ALL THE SHIPS THAT NEVER SAILED:
A GENERAL MODEL OF ILLICIT MARKET SUPPRESSION

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By

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ABSTRACT

This model predicts progress in transnational illicit market suppression campaigns by comparing the relative efficiency and support of the suppression regime vis-à-vis the targeted illicit market. Focusing on competitive adaptive processes, this ‘Boxer’ model theorizes that these campaigns proceed cyclically, with the illicit market expressing itself through a clandestine business model, and the suppression regime attempting to identify and disrupt this model. Success in disruption causes the illicit network to ‘reboot’ and repeat the cycle. If the suppression network is quick enough to continually impose these ‘rebooting’ costs on the illicit network, and robust enough to endure long enough to reshape the path dependencies that underwrite the illicit market, it will prevail.

Two scripts put this model into practice. The organizational script uses two variables, efficiency and support, to predict organizational evolution in response to competitive pressures. The suppression network should become ‘flat’ and ‘market-like,’ in order to rapidly adapt, and it should maintain a deeply embedded social movement backing the campaign. Success allows for progress through the operational script, which predicts changes in the illicit market using economic theory. Initially, the illicit market uses public ‘focal points’ to conduct business. If the suppressor succeeds in injecting unacceptable risk in these focal points through patrolling, the illicit market is forced to take a firm-like ‘black market’ form. The suppressor shifts to
interdiction in response, and if successful again, they subsidize alternate demand path dependencies. Suppression ends either by the suppressor abandoning the attempt or through a path dependency swap to a benign substitute.

I test these theories using historical cases - the British suppression of the Atlantic Slave Trade and the USCG’s ‘Rum War’ during Prohibition. Using a multi-method approach inspired by operations research, I use process tracing, statistical analysis, primary historical research, and social network analysis to evaluate changes in relative efficiency and support over time. I then apply the model to contemporary cases – piracy, human trafficking, money laundering, and drug trafficking – for sensitivity and robustness checks. A large-n analysis provides further scoping. Finally, I apply the model to the policy problem of cyberspace-facilitated modern-day slavery.
To all the captives who deserved freedom
And all the heroes who deserved glory
And all the guardians who deserved respect
And all those in chains who deserve better
I thank my long-suffering family and friends for their patience over the last few years. Specifically, I would like to thank my father, Sergeant Bruce Blair (Retired), Montgomery County Police Department, my mother Linda, sister Katy and brother-in-law Conner for their time and thoughts about this project, and their support in general. My friends have been a source of endless encouragement, joy and solace over this time. I am especially indebted to Jess, whose keen mind and generous gift of time shaped this project tremendously. I could not have asked for a better experience at Georgetown, and I am thankful for all classmates, faculty and staff that made it so. The members of my committee have shaped my intellectual journey in ways I am just beginning to realize – mostly by way of cringing after re-reading papers I’d previously written. I thank them for their mentorship and inspiration. I am lastly thankful to the Air Force for giving me this opportunity. I will do my best to ensure their investment proves worthwhile.

S. D. G.
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## Special Addenda

Rum War Capture & Intelligence Report Animation ....................................................... Digital Media
SECTION 1: THEORY
CHAPTER 1, INTRODUCTION:
WICKED PROBLEMS AND COMPLEX SOLUTIONS.
SUCCESS AND FAILURE IN TRANSNATIONAL ILLICIT MARKET SUPPRESSION CAMPAIGNS.

RESEARCH QUESTION: WHY TRANSNATIONAL ILLICIT MARKETS?

International Security inherently involves questions of control. In an increasingly interconnected world, that control is expressed in gradients rather than lines. As I write this chapter, more than a half-dozen nations are fully engaged in major shooting wars, none of which involve states openly fighting other states.\(^1\) At least a dozen more are embroiled in protracted struggles with illicit criminal networks for functional control of their own state. These sub-state struggles for control are not confined to weak states - despite the enormity of American power, the nation cannot presently consolidate functional control over its southern border, and its southern neighbor is caught up in a civil war with criminal networks. Whether terror networks, criminal networks, insurgent networks or a combination of the three, the afflictions of these states do not fold nicely into Westphalian theories of warfare.

Conditions on the ground in these contemporary conflicts have less to do with the positions of bold lines on maps, and more to do with the panoply of actors between the nominal sovereign and the ground truth. Local government, insurgents, hostile powers, criminal networks and the various factions of public opinion interact in complex patterns of cross-cutting interests. This unpredictable cocktail might amplify, dampen, or even reverse the initial intent of the formal authorities on a given issue. If sovereignty is the monopoly of legitimate force within a space, malign violent networks within that space may constitute as much of a threat to sovereignty as any neighboring power.

\(^1\) Ukraine, Iraq, Syria, Afghanistan, Israel, Palestine, Somalia, amongst others.
These sub-state, non-state and inter-state threats muddle the division between national security and law enforcement. For instance, drug trafficking finances insurgencies while insurgencies provide sanctuary to drug production. Admiral James Stavridis describes this convergence as the “dark side of globalization,” where low-level illicit actors of all sorts make use of common global information and transportation architectures, and hence begin to emulate and even partner with each other. Mexico’s present drug war, well into the realm of insurgency by now, stands as a particularly regrettable study in this process.

Sovereignty is not what it used to be, but perhaps it never was. Peter Andreas, in Smuggler Nation, argues that the American Revolution owed much to smuggling networks, both in its origin and in its conduct. During the height of the Pax Britannica, the British devoted a considerable portion of their military strength to suppressing the slave trade, yet almost abandoned the endeavor in exasperation after a half-century’s effort. The United States amended liquor suppression into its Constitution, and ended up amending it back out after a decade of frustrating enforcement failures. Due to the lack of a counterfactual, the ever-controversial ‘War on Drugs’ is hard to assess, but it has certainly proved costly for much of the Americas. In each of these cases, and in a great many others, transnational illicit markets thwarted the will of a sovereign state both at home and abroad.

It is puzzling that great powers at the height of their power find it so difficult a task to suppress these marginal non-state actors. Their inability to do so presents a pressing policy problem, from the drug-fueled civil war in Mexico to the global scourge of modern-day slavery.

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3 A exposition of his theory, as it relates to legitimacy and the conduct of illicit commerce, is included in Appendix A.
5 Peter Andreas, Smuggler Nation: How Illicit Trade Made America (Oxford University Press, USA, 2013).
In this dissertation, I will attempt to solve this puzzle by determining what factors best predict success in transnational illicit market suppression campaigns. In the course of unlocking this puzzle, we will explore the processes that make these sorts of markets so resilient – this will help policymakers dampen the illicit market’s adaptive faculties, while appropriating some of these adaptive structures for themselves.

This work ultimately aims to produce a general model of illicit market suppression, identifying fundamental mechanics and mechanisms common across all suppression attempts. Given a politically actualized desire for suppression, how do the levers of government translate that desire into social and economic effects? By making a general model, we can use the past to talk about the present and extricate ourselves from the deep data problems of modern human trafficking and the rancorous drug war debates. By focusing on conduct of suppression, we outflank the intractable debates about the merits of outlawing or legalizing controversial substances and practices.

This approach is calibrated to law enforcers (the ‘Admiralty’) rather than lawmakers (the ‘Prime Minister’.) I focus on the ability of a movement-backed and government-supported transnational suppression campaign to achieve their ends against an illicit market.6 This comes at the expense of evaluating the societal opportunity costs of a given suppression campaign. We gain in ‘how’ at the expense of ‘why’ - the former is a formidable enough challenge to warrant bracketing the latter for the time being.

Place in the Literature. By doing so, this work complements existing International Relations literature approaches to organized crime. In his work on international cooperation

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6 For this reason, I do not directly explore the governmental use of force to support its own hold on national power, and I restrict this study to campaigns led by liberal states. I have no interest in helping illiberal states better suppress societal demands for liberal reforms.
against illicit trade, Asif Efrat identifies four theoretical approaches for explaining the resilience of illicit markets in the face of state suppression.\(^7\) States may run aground on well-entrenched norms abroad (Nadelmann and Andreas), they may be maneuvered in the international by nimble criminal networks (Naim), they may not apply an appropriate regime to the problem (Jojarth) or they may simply not care enough (Efrat.) We will explore each of these briefly.

First, Nadelmann and Andreas propose a ‘societal-resistance’\(^8\) explanation. According to their model, nations attempt to proselytize their preferred norms through international illicit market suppression efforts. These attempts are countered when they encounter long-held societal norms abroad, which generates sanctuary for illicit networks and triggers a suppression contest. They argue that the most resilient criminal activities “require limited and readily available resources and no particular expertise to commit… are easily concealed… are unlikely to be reported to the authorities, and those for which consumer demand is substantial, resilient and not readily substituted.”\(^9\)

While this accounting of resilience is compelling, it does not adequate explain how the British were able to succeed in suppressing a slaving fleet which enjoyed all of these advantages at the outset, along with sanctuary and legal cover from a number of European powers and protection from coastal West African powers.\(^10\) These scholars effectively explain the role of sanctuary and global norms in suppression, but lack an effective theory of success and failure in

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\(^8\) Ibid.


\(^10\) Nadelmann argues that this was due to the specific vulnerabilities of the exploitation side of the slaving enterprise. While domestic enforcement was crucially important, it only came about with the support of sustained suppression efforts. I hold that the British suppression was far more difficult than he acknowledges. In addition, he discounts rumrunning suppression as ineffective, which I dispute with him in my analysis of the Rum War case. Ibid.; Ethan A. Nadelmann, *Cops Across Borders: The Internationalization of U.S. Criminal Law Enforcement* (Pennsylvania State University Press, 1994).
suppression itself.

Second, Moises Naim proposes a “criminal-capacity”\textsuperscript{11} theory rooted in globalization, the concomitant democratization of power and the diminution of the state. Illicit networks are better able to innovate and communicate using novel technologies than bureaucracy-bound states, thereby improving their relative capacity \emph{vis-a-vis} the state. The juxtaposition of often-arbitrarily bordered political world with an increasingly borderless global market further complicates this problem. Therefore, since illicit markets are lighter on their feet, they can stay a few steps ahead of state enforcement efforts and thereby survive.\textsuperscript{12}

I take to heart Naim’s core thesis about the native efficiency advantages of illicit markets. However, illicit markets have long since been first movers in novel technical spaces. Slavers had the run of the open Atlantic for much of British slave trade suppression. Like the Internet, the open ocean was a technical commons – ships and sextants are socio-technical constructs that opened the space for human purposes. The British used a combination of international law and improved naval engineering to overtake that technical commons. During Prohibition, the rumrunners made extensive use of the electromagnetic technical commons with radios and codebooks. In response, the Coast Guard tamed the commons with registration requirements and cryptanalysis. Control over these spaces is an essential element of transnational illicit market suppression attempts, but the struggle for control is an essential element of the story and is far from deterministic in its outcome. Criminals generally exploit new technologies faster, but governments can gain and hold a measure of control over technical commons through registration schemes. Naim, too, requires a theory of struggle in his account of suppression suppression itself.


\textsuperscript{12} Ibid.
Third, Christine Jojarth applies transaction cost theory to these suppression attempts. We will explore her work extensively in the next chapter, but she identifies ideal types of suppression regimes for given illicit markets. For instance, a stable and predictable problem tends toward a tighter formal regime, since the problem can be fully specified at the outset. Conversely, an adaptive problem requires a looser regime – the enforcers require room to maneuver in order to update the regime to changes in the threat.

This central insight – adaptive threats require adaptive regimes – is tremendously helpful. However, her model does not explain how that adaptation might occur. Additionally, the suppression regime may itself change in order to cope with the illicit market during a protracted suppression attempt, subject to a contingent continuing social commitment to the cause. Should that commitment exhaust itself in the course of this updating, the attempt will likely fail. This account also requires a theory of change and struggle.

Finally, Efrat offers a theory of domestic commitment. Situating the focus of suppression in the domestic will to suppress a given illicit market, he identifies determinants of domestic commitment. If the illicit market creates major negative externalities for a country, domestic political forces will demand suppression, and vice versa. If the beneficiaries of an illicit trade are influential in a country, the nation’s commitment will be diminished. If illicit exporters or consumers are marginal players, they will not impact the nation’s policy on suppression.

The core finding of Efrat’s model rings true – domestic politics plays a key role in commitment to illicit market suppression. However, the effectiveness of suppression itself does

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14 Ibid.
15 Ibid.
much to shape societal perceptions of the tradeoffs between harms and costs. During suppression of the slave trade, grueling decades of the campaign eroded the political will of the abolitionists over time. Conversely, the British deliberately attempted to influence the social role of slave traders in partner countries – their endgame in Brazil hinged on a rebalancing of the Brazilian legislature away from slave-holding agriculturalists and toward middle-class industrialists. This model, too, requires a theory of struggle and change.

I hope to offer that theory of struggle and change in my model, opening the black box between regime design and suppression campaign outcome. In the course of doing so, I will appropriate pieces from all each of these models. Ideally, this will allow extant models to speak to each other in new ways and thereby close a gap in the present literature. This project is multidisciplinary by necessity, as the problem spans fields as diverse as social networks, economics, complexity theory and institutional design.

In order to find a satisfactory answer, we will have to venture beyond deterministic structural theories – complex systems theories predict stability or instability, but they cannot reliably predict how instability will manifest itself. Therefore, we will be able to tell what sorts of regimes can best make sense of a complex world, but we cannot \textit{a priori} determine what that world will look like. I hold that the side most likely to prevail is the one best able to stabilize its own positions of advantage while destabilizing an adversary’s advantages. Accordingly, the comparative ability to make sense of a complex world is a good predictor of success. We begin here, with the world of ‘wicked problems’ and the challenge of competitive sense-making.

\textbf{THE CORE ‘BOXER’ MODEL.}

\begin{footnotesize}
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\item Leslie Bethell, \textit{The Abolition of the Brazilian Slave Trade: Britain, Brazil and the Slave Trade Question}, 1st ed. (Cambridge University Press, 2009).
\item Loosely adapted from Miyamoto Musashi, \textit{The Book of Five Rings}, trans. Thomas Cleary (Shambhala, 2005).
\end{enumerate}
\end{footnotesize}
The Dynamic Competing Regimes model (or ‘Boxer’ model) envisions this contest of competitive sense-making and action as a bout between two boxers, each weaving and dodging and attempting to land blows while their opponent does the same. While we might not be able to predict any given punch, we can observe clues in the boxers’ form that reveal their constitution and their nimbleness. The model predicts success in suppression through joint relative superiority in regime operational efficiency and regime social support. Efficiency is revealed by the ease with which novel ideas flow through the operators’ social network, while support is revealed by the willingness of the backing social movement to pay the requisite costs to sustain and improve the regime.

These two variables yield four worlds. The ‘success’ world, high efficiency and support relative to the illicit market, is the best for the suppressor. In this world, the suppressor can both beat their adversary to the punch and deliver knockout blows. In practice, a suppressor in this state space can enforce whatever settlement they wish on the illicit market. That said, ‘mission creep’ in the suppression campaign is liable to come at the cost of social support if the objectives stray too far into unpopular territory. The British suppression of the Atlantic slave trade occupied this space during the latter years of the campaign, as they were picking off the remnants of the then-isolated illicit networks.
The worst world for the suppressor is the ‘failure’ world of low relative efficiency and support. Neither can they dodge blows nor can they withstand them. In this world, the suppression campaign foolishly expends political capital to no avail. The suppressor is left with the choice of terminating the campaign or re-booting it under the auspices of a different suppressing institution. The early years of the ‘Dry Navy’ from Prohibition lived in this world – the Prohibition Bureau’s small rum interdiction fleet became a laughingstock and ultimately a liability to their supporting social movement.

Most active campaigns reside in one of the two stalemated worlds, where one variable favors the suppressor and the other favors the illicit market. In the strong stalemate, the suppressor has the benefit of robust social support but lacks the institutional maneuverability to keep up with the illicit market. The state can write more checks than the criminal network, but they suffer from a terrible exchange ratio against the illicit market, resulting in a marginally stable equilibrium. On one hand, a smart suppressor will use the time to flatten their organization and build ad hoc partnerships, thereby increasing their efficiency. On the other hand, the suppressor is typically burning support as time goes on. Still, this stalemate provides the suppressor the space to degrade the illicit network while improving their own, which allows them to advance into the ‘success’ quadrant. The early British suppression of the slave trade was a ‘strong stalemate’ - their regime was not yet efficient, but was becoming so in time, and the depth of British support for abolitionism gave them that time.

Finally, the weak stalemate is the reversal of the strong. In this world, the suppressor has the better network, but their support has eroded. They can achieve excellent exchange ratios against illicit innovations, but the suppressor must to maintain these ratios against an adversary capable of generating far more resources in order to hold their position. This is a worse position than the
strong stalemate, because time favors the illicit market. The Coast Guard during the later phases of Prohibition was in this position – the service did very well for the resources they had, but the rum fleet could seemingly endlessly recoup losses.

*The Scripts.* We will explore each of these spaces with two major historical cases – the British Suppression of the Atlantic Slave Trade and the US Coast Guard’s contest against Prohibition liquor traffic during the Rum War. The British-led suppression of the Atlantic Slave Trade is a richly documented international suppression campaign conducted on a commons, and one of very few clear successes. This case is balanced by the US Coast Guard’s maritime campaign against liquor during Prohibition (the ‘Rum War,’) which is similarly data-rich, but fraught with setbacks and a lack of support. The suppression of international smuggling was the sole bright spot within the larger Prohibition campaign, and the disastrous performance of the Prohibition Bureau during this period provides an excellent foil.

In order to make sense of these conflicts, we will evaluate them using two ideal-typical scripts derived from the Boxer model. In the ‘organizational script,’ a suppressor advances to the ‘success’ quadrant of the model by flattening their organization. This reduces friction on the flow of information, and allows the construction extra-institutional partnerships while spending support as slowly as possible.

In the ‘operational script,’ the suppressor forces the illicit market into the ‘failure’ quadrant in three phases. First, in the ‘grey market’ phase, they inject unacceptable risk into public illicit focal points – e.g. red light districts or known criminal hangouts – through patrolling. This forces the illicit network to reform into syndicates, which leads to the ‘black market’ phase. In this phase, the suppressor attempts to interdict the internal structures of these syndicates with intelligence-led operations. Finally, if both phases are successful, suppression subsidizes a swap
in path dependencies away from the objectionable good or practice and toward a more benign alternative. If both cases demonstrate both the operational script and the organizational script in operation, then the ‘Boxer’ theory will stand on strong footing. In this main body of this work, we will evaluate the model using these two historical cases and then extend the model to contemporary cases.

**OUTLINES & LAUNCHPADS.**

This work contains four sections – the first builds the ‘Boxer’ model, the next two apply the model to historical cases, and the last extends it to contemporary cases. This model builds on insights from fighting adaptive networks during the various American-led struggles against al-Qaeda of the last decade, which we will explore presently. These insights serve as a springboard toward the Dynamic Competing Regimes model, which we will build in the balance of this first section. Chapter Two gathers theoretical foundations from various disciplines to use as building blocks for the remainder of the work. Chapter Three derives the Boxer model’s two key variables from a combination of regime theory and John Boyd’s theories about adaptive conflict. Finally, Chapter Four builds the operational and organizational applied scripts from the dictates of the Boxer model.

The second section interprets the British suppression of the slave trade through the lens of the Boxer model. Chapter Five focuses on the British diplomatic effort to deny the commons to the illicit market and their early efforts to shut down the grey market off the West African coast. Chapter Six continues to the black market suppression efforts and the contest between the hardened remnants of the slaver networks and the greatly improved suppression networks. Chapter Seven delineates how the successful conclusion of the campaign led to durable changes in preferences and production modes on both Atlantic shores.
The third section does much the same with the US Coast Guard’s Rum War against liquor smuggling during Prohibition. Chapter Eight begins at the end of the campaign, building a working theory of drinking demand shifts due to the maritime suppression campaign. Since the effects of Prohibition remain hotly contested, a series of nested black boxes allow us to work from Prohibition’s overall effects on drinking down to the specific role of the Coast Guard’s efforts. Chapter Nine outlines the overall diplomatic campaign, the catastrophic failure of the Prohibition Bureau’s smuggling suppression fleet, and the Coast Guard’s shuttering of Rum Row. Chapter Ten proceeds with the black market stalemate between the hardened and networked rum syndicates and the remarkably innovative service. This case concludes a few years after repeal, with the last surge and final collapse of large-scale rum-running.

The fourth section concludes the model and extends it to modern problems. In Chapter Eleven, we conclude our historical case testing of the primary ‘Boxer’ model. Chapter Twelve applies the model to four contemporary mini-cases to determine generalizability and scope conditions. Chapter Thirteen extends the model to the known universe of major transnational illicit market suppression, with very brief explanations for each of the hundred-some cases. Finally, Chapter Fourteen wraps up with the concept of ‘information friction,’ which provides policymakers with a heuristic for applying the Boxer model. We will demonstrate these policy applications with general recommendations for reducing ‘information friction’ in a hypothetical coordinated trans-national campaign against human trafficking.

As a note of quick introduction, this work owes an intellectual debt to the long counter-network campaign against al-Qaeda. The theories of adaptive organizations and network attack developed over the last decade stand as conceptual forerunners to this project. Since these ideas and experiences serve as a backdrop for both theory and cases, we open with idea of ‘wicked
problems’ and a survey of effective approaches to those problems from the world of counter-terrorism.

**Counter-Terror as a Launchpad: Solving Wicked Problems.** Considering the power of criminal networks to thwart functional sovereignty at the ground level, and the resulting real-world impacts, transnational organized crime remains under-researched. We might assign this dearth to the traditional inclination of international relations toward great power wars, but I propose an alternate explanation: complexity. Since these illicit enterprises cross multiple borders, generally operate from the shadows, and change their nature in response to threats, they prove very difficult to definitively solve. Making matters worse, these cases suffer from ‘legibility’ problems – much of the throughput of an illicit market might occur informally, and both the researcher and the policy-maker have a difficult time accounting for these unstructured transactions. In this, research into terrorism, insurgency and organized crime share common cause.19

These criminal organizations, much like aspects of terrorism and insurgency, constitute classic ‘wicked problems.’20 ‘Tame’ problems end at a discrete point with a discrete outcome, and belong to a general category of similar problems with similar solutions. In contrast, wicked problems share most or all of the following characteristics:

1) “You don't understand the problem until you have developed a solution.

2) Wicked problems have no stopping rule. *[i.e. no clear ‘victory’ or ‘defeat.’]*

3) Solutions to wicked problems are not right or wrong.

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19 Research into sub-state political violence increased geometrically following the Al-Qaeda attacks of 2001, but the ink-to-blood ratio for non-political criminal violence remains disproportionately low.
4) Every wicked problem is essentially unique and novel.

5) Every solution to a wicked problem is a ‘one-shot operation.’

6) Wicked problems have no [discrete, clear or obvious] alternative solutions.”

For instance, American Prohibition did not stop American consumption of liquor, but neither did repeal eliminate the illicit liquor market – the American bootlegging tradition is as old as the Whiskey Rebellion and is alive and well today. The innovations that worked well for both sides during that campaign were highly specific to their specific context, and as soon as the other side understood them, they were generally countered and rendered ineffective. The half-life of any given technology, tactic or strategy was short at the outset of the campaign, and grew much shorter as both sides became more agile. Wins and losses were clear only in retrospect, if at all.

Even after the relatively conclusive British suppression of the Atlantic Slave Trade, some portion of the execrable trade mutated into continental African slave flows and human trafficking from Asia. It is difficult to make meaningful and stable models of these sorts of phenomena.

Given these barriers, it is understandable that one might not opt to pick a wicked problem as a research puzzle. Unfortunately, wicked problems have a nasty habit of elbowing their way onto research agendas in spite of the preferences of researchers.22 Terrorism and insurgency, both wicked problems as well, received long-overdue attention after the events of September 2001. The resulting scholarly and policy work on that set of wicked problems revealed key insights about attacking wicked problems in general. That body of work provides an avenue for attacking the wicked problem of transnational crime.

Those lessons from the fight against Al-Qaeda and the Taliban serve as a launchpad for

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22 Or, loosely paraphrasing Yakov Smirnoff, “In academia, you pick wicked problem. In policy, wicked problem picks you.”
understanding the suppression of transnational illicit markets. Three core insights from the counter-network battles of the last decade and a half present an excellent foundation for overall approaches to wicked problems. First, the US Army’s Counterinsurgency Field Manual as a ‘meta-manual,’ rather than a manual.\(^\text{23}\) A traditional manual provides approved solutions for given conditions, but a meta-manual provides the resources and theoretical scaffolding for users to assemble locally appropriate solutions themselves.

The same principle applies more broadly – while any given institutional strategy will decay due to adversary adaptation, certain types of institutional structures allow their members to devise and adapt strategies more quickly. While wicked problems defy formulaic solutions, learning organizations allow their members to quickly adapt to whatever conditions may arise. A flat structure, while not an answer in and of itself, helps operators more easily coordinate amongst themselves and take better advantage of transient opportunities. While we might not be able to predict the best approaches for a given situation, we can predict what sorts of institutions will most quickly find identify and implement appropriate approaches for their situation. Therefore, an effective way to attack a wicked problem is to accelerate one’s own institutional learning.

Second, not only can you speed up your own organization, you can slow down your adversary as well. If the threat network’s command and control lines can be converted into liabilities through effective intelligence and targeting,\(^\text{24}\) this effect is multiplied. This finding carries over to agentic wicked problems such as organized criminal networks. Vanda Felbab-Brown recommends attacking the middle tiers of an adaptive adversary network in order to

\(^{23}\) Credit for this idea goes to Daniel Nexon, from a conversation in 2013.
remove the brokers and connectors that provide organizational agility.²⁵ By removing these players, the institution’s innovation and sense-making processes bog down. While the current strategy might last for a time, the threat network will have a difficult and slow time rebooting once that strategy is countered. Attacking the institutional learning structures of a complex adaptive adversary accomplishes the same ends as accelerating one’s own structures, as these sorts of contests are generally graded on a curve.

Finally, adaptation takes time, and organizational flattening takes a lot of time. Therefore, in order to succeed against a wicked problem, one must bank enough political and social capital to keep winding the clock. This finding carries over as well – victory is ultimately found in the population. In the case of illicit market suppression, this population is split between those backing the suppression campaign, those supporting the illicit market through their contraband consumption, and the unaligned population between. As in counter-insurgency, law enforcement in these suppression campaigns must consider population support – including the population that presently constitutes illicit demand – as the ultimate objective.

These three insights provide an initial vector for this project – against an agentic wicked problem, institutional culture is life and political support is destiny. These serve as a North Star, but they are insufficient as either a theoretical map or a conceptual compass. Therefore, we will leave them as initial background and press forward with model building. In the next chapter, we will build a map of theoretical waypoints from extant literature. In the two model-building chapters that follow, we will build a compass for navigating illicit market suppression campaigns. We proceed.

CHAPTER 2, LITERATURE REVIEW: THEORY FOUNDATIONS
SCOPE CONDITIONS, BUILDING BLOCKS, AND WORKING ASSUMPTIONS.

CHAPTER OVERVIEW.

This chapter will do three things in preparation for the next chapter’s model-building. First, we will fence off the ground upon which we will build our model by imposing scope conditions. Any attempt to build a general theory of illicit market suppression is by its very nature both broad and synthetic. This is both a strength and a weakness – such a theory reveals new insights by bridging a number of fields, but in doing so sacrifices the depth, resolution and parsimony that would come from being deeply grounded in one field. The first step toward that end is to decide what questions we are not answering. Since we are focusing on effectiveness, we scope our question by tabling ‘why’ questions in favor of ‘how’ questions.

Second, we will search for puzzle pieces in order to build the foundations for a general theory.¹ Rather than a quixotic attempt at a comprehensive review of all relevant fields, this survey-and-search approach looks for building blocks for a solution while simultaneously identifying competing hypotheses. The concepts we identify and describe here will be treated as given for the rest of this work. In effect, we’re filling our wheelbarrow with bricks, and will use them to build a ‘theory of victory’ in the next chapter. Regime theory describes structures that have proved successful in international coordination against relatively benign threats. Economic theory explains the micro-foundations behind these designs, which will allow us to adapt them further. Network theory identifies structures that are efficient in dealing with complex, adaptive threats. Lastly, complexity theory examines mechanisms that enable those structures to work.

¹ A quick note of caution. Quoting George Box, “All models are wrong, some models are useful.” George E. P Box and Norman Richard Draper, Empirical Model-building and Response Surfaces (New York: Wiley, 1987), 424. The following descriptions are models; they are wrong (but not false) insofar as they are each missing variables and context, but they are useful insofar as they briefly summarize key points essential to the microfoundations of the general model.
Third, we will lay a foundation for our theory by building on the nascent convergence literature. Illicit market suppression is necessarily intertwined with governance (largely in messy ways,) so we lay out our assumptions about the relationship between governance, states and illicit markets in a graphical model. Stabilizing these pieces now makes for a cleaner theory build later.

**Staking the Boundaries: Scope Conditions.**

Three scope conditions help us manage the size of our search. First, in order to better understand ‘how suppression works,’ we leave the question of ‘why suppression happens’ to others. Though the dynamics of social movements and the mechanics of norms are crucially important in starting a suppression attempt, we will treat them as given until the beginning of the attempt itself. For instance, the rise of abolitionism in Britain is a fascinating story in its own right, with transnational advocacy networks\(^2\) weakening the domestic slave trade lobby through normative entrepreneurship and progressively increasing the regulatory burden on slavers, until they were able to proscribe the trade outright.\(^3\) Our exploration will begin at that last point and end where the trade is disrupted or the suppression attempt is abandoned – in this case, the resilience of the coalition underwriting abolition was key to carrying the half-century suppression effort to its successful conclusion.\(^4\) The norms that held the coalition together are beyond our scope, but the fact that they did is a crucial consideration, especially insofar as the

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suppression effort itself undergirded that coalition.

Second, we treat international law enforcement efforts as a necessary but not sufficient condition of successful market suppression. Law enforcement is almost certainly going to be part of any comprehensive illicit market suppression attempt against an entrenched market (the exception being state-driven markets, such as for illicit nuclear technology, where state policy alone is a sufficient lever to eliminate a market.) Affirming the importance of transnational activist networks, global trends, and the like, we focus on what factors best explain whether deliberate suppression efforts achieve their operational goals of market disruption. Therefore, we answer ‘what factors make suppression most effective,’ rather than ‘how does suppression compare to other policy options for dealing with illicit goods.’

For instance, Britain used the Royal Navy to suppress of the Atlantic slave trade, alongside development subsidies in West Africa, economic restructuring in the Americas, diplomatic and social normative entrepreneurship, and all this amidst changes in global production patterns. Still, it is difficult to imagine the collapse of the Middle Passage in a similar timeframe without the roadblocks of suppression in place. In our exploration, we’ll look at how improvements in the British suppression effort contributed to the successful conclusion of the campaign, but will not conclusively answer whether spending those resources in other ways would have been more or less successful.

Imagining ourselves as an actor in this case, we are the Admiralty, determining how to best bring force to bear against the slaver networks, not the Prime Minister. By treating

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5 This does not map onto the supply-side vs. demand-side debate, as demand figures prominently into successful suppression as well.
6 Drescher, *Econocide*.
objectives as exogenously given, we can sidestep the intractable debate about the costs and benefits of suppression or legalization. Harm reduction advocates should appreciate the logic behind this ‘assuming you’re going to do it anyways, how do you do it best’ approach.

Finally, one major question that appears often in the pop-literature about narcotics suppression asks ‘does suppression work?’ This question seems central to a model of illicit market suppression, but it is a red herring. If the question is scoped narrowly as one of effectiveness, does suppression achieve its immediate intent of reducing the consumption of an illicit good, the answer is simply ‘yes.’ Even during the American prohibition of alcohol, held by the same pop-literature as the archetype of the futility of illicit market suppression, per-capita alcohol consumption dramatically decreased and remained at relatively lower levels well after the end of total suppression. The question society asks itself prior to and during a suppression attempt is: do the social benefits of suppression outweigh the costs and consequences of the attempt? The perceived success or failure of the suppression attempt changes this calculus and therefore changes the resources available for the attempt. This model makes no attempt to weigh the costs and benefits of these attempts, but must nonetheless account for the fact that perceptions of success or failure are often self-fulfilling by way of this calculus.

British slave trade suppression attempt serves as an example here as well. It is an uninteresting question whether or not Royal Navy frigates reduced the number of slavers off the coast of West Africa. They did. More interesting questions look at the cost per unit of reduction, especially considering second and third order effects such as deterrence and induced

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8 This is supported both by research during the case and after, by scholarly sources on both sides of the Prohibition question. Clark Warburton, The Economic Results of Prohibition (Columbia university press, 1932); Daniel Okrent, Last Call: The Rise and Fall of Prohibition (New York: Scribner, 2010); Jeffrey A. Miron and Jeffrey Zwiebel, Alcohol Consumption During Prohibition (National Bureau of Economic Research, 1991), http://www.nber.org/papers/w3675.
demand shifts; the British re-captured approximately 9% of the captives sen through the illegal Atlantic slave trade, but they deterred an estimated additional 32% of the trade through their suppression efforts.\(^9\) Additionally, insofar as suppression played a role in the long-run changes that extinguished the trade itself, the policies had an even greater impact. Historian Seymour Drescher estimates that without British interference, the peak of the Atlantic slave trade would have been in the late 1800s; the actual trade had been eradicated before the peak of the counter-factual licit slave trade.\(^10\) However, the British Parliament did not have access to this information when they were debating de-funding their seemingly interminable suppression effort in 1850 in light of an apparent lack of success.\(^11\) The weighing of the good created by suppression in light of the costs imposed is outside the purview of our question, but the fact that this weighing occurs is quite important, as are changes driven by perceptions of efficiency.

While these restrictions dramatically narrow our question to something manageable and answerable, they also exclude much of the useful prior academic work on this topic. On the first count, rich theories describe how transnational activists can spur state action, but we lack strong theories about what happens afterwards, about how these policies become realities in the face of determined illicit opposition. On the second count, a long-running debate divides traditional law enforcement of illicit goods from “harm reduction”\(^12\) approaches, but regardless of which side prevails, there remains a residual enforcement problem (that is, unless one legalizes a previously

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\(^9\) Number computed with Voyages Database as Baseline (conservatively using 1.8 million moved partially or entirely illegally,) Royal Navy Archival Numbers for captures (160,000 recaptures), and Le Veen’s Elasticity estimates for deterrence (850,000 deterred.) Eltis, Voyages; Siân Rees, *Sweet Water and Bitter: The Ships That Stopped the Slave Trade* (UPNE, 2011); LeVeen, “British Slave Trade Suppression Policies, 1821-1865, Impact and Implications.”

\(^10\) Drescher, *Econocide*.


illicit good under all circumstances without any taxation.) In either case, effective suppression is a pre-condition for success.

On the final count, debates about the efficiency of suppression are endogenous in the policy-relevant moment – if a suppression attempt is successful at lowering demand in a lasting way for the objectionable commodity, then it will likely have been worth it in retrospect; if unsuccessful, then the attempt will likely seem wasteful. This cannot be known in advance, as it is a function of the outcome of these debates themselves. Especially if these findings are to be useful in ongoing cases, our model must not have to wait for the end of a case for the successful strategies to stabilize. It is then preferable to understand mechanisms and processes that promote successful outcomes, rather than project the probability of success, which results in part from the perception of that projection. These mechanisms are better suited to building a ‘theory of victory’ that is usable in the midst of a case.

**GATHERING MATERIALS: SURVEY AND SEARCH.**

In order to build this ‘theory of victory,’ we must cobble together bits and pieces from a number of fields in order to identify ways to succeed (and hence, ways to fail,) in contests against complex, adaptive illicit markets. We do so presently, using two literatures that explore aspects of static international organizational design – regimes and economics - and two literatures that wrestle with the dynamic side of things – Networks and Complexity.

**Regimes.** Regime theory explores international institutional design and performance, while organized crime literature looks at similar coordination and public goods problems within

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illicit markets\textsuperscript{14} – I propose that these crime control and ‘crime production’ regimes are two sides of the same coin and consider these two literatures as one. Regimes explain well the construction of control over marketplaces, but cannot fully account for the adaptive processes that undermine that control.

In order to coordinate actions amongst a number of players, these players must converge around similar expectations and standard operating procedures.\textsuperscript{15} This is true for both a states making an illicit market suppression attempt and the market under suppression. A poorly engineered regime will be sluggish, unresponsive and inefficient, as gaps in the regime create friction. Moreover, a gap-ridden regime is particularly vulnerable to exploitation by adaptive adversaries which can drive through these holes.\textsuperscript{16} Regime design approaches describe suppression regime efficiency, and critical approaches explore how suppression regimes use power to advance norms. By linking these to organized crime approaches, we can construct a model of licit/illicit regimes in competition.

The ‘transaction cost’ approach advanced by Christine Jojarth approaches regime design as a functional problem to be solved from a rational choice point of view.\textsuperscript{17} In this view, regimes solve a collective action problem, and allow players to act coherently to solve a shared problem.\textsuperscript{18} Asset specificity, the degree to which investments are ‘locked in’ to the regime, drives more binding regimes as main contributors must be offered assurances that other players


\textsuperscript{17} Jojarth, \textit{Crime, War, and Global Trafficking}.

will not back out of the project. Similarly, greater uncertainty about the actions of regime
partners (behavioral uncertainty) requires more binding regimes. However, the more binding the
regime, the less flexible it becomes – this becomes a crucial problem when facing high degrees
of environmental uncertainty (degree to which the problem can change), which require high
levels of flexibility.

Applying this approach to our problem provides both a building block and an alternate
hypothesis. A ‘nicely-behaved’ illicit market, which displays little agency, change or adaptation,
results in little environmental uncertainty. Hence, it can be countered with a specific and highly
binding framework. Candidates for this category include state-driven markets, where
governments own the demand levers – a landmine regime or a binding international prohibition
regime for Weapons of Mass Destruction would work in a world of perfect compliance since
states are by far the primary consumers of both. Similarly, states own the initiative in the fight
against counterfeit currency since they can control the form of the currency itself – by
introducing anti-counterfeiting measures, they force criminals to respond to them and hence tame
the problem.

Other candidates for ‘nicely-behaved’ illicit markets are single-point-of-failure supply
chains, where the criminal market depends on a known, specific and fixed element. For instance,
conflict diamonds are a specific commodity from a specific region. By connecting a normative,
regulated system of provenance to the demand for diamonds, the market can be decisively
disrupted.\(^{19}\) Unfortunately, our motivating problems of human trafficking and drug trafficking
are ‘nastily-behaved’ agentic, adaptive and clandestine market players. Regime design for these
issues will prove far more challenging.

\(^{19}\) Jojarth, *Crime, War, and Global Trafficking*. 
Building Block: ‘Nicely-behaved’ illicit markets can be countered with highly specified binding regimes. ‘Nastily-behaved’ adaptive, agentic and clandestine market players cannot, and instead require an adaptive countermeasure regime.

Link: Complexity theory, “Complexity cannot be easily engineered.”

Jojarth’s model well explains what sorts of regimes arise in response to illicit markets. In their soft form, her insights provide a key piece of a general theory of illicit market suppression. In their hard form, however, her model becomes an alternate hypothesis – if static regime design is adequate to predict success or failure in suppression attempts, then her model solves our puzzle. However, the box ‘environmental uncertainty’ contains the adaptive and agentic processes that make ‘nastily-behaved’ illicit markets so difficult to defeat. Therefore, for our purposes, this model is helpful but underspecified.

Alternate Hypothesis: Static regime design predicts success or failure by coordinating inter-state action against a common problem.

Jacob Shapiro’s The Terrorist’s Dilemma explores the other side of this coordination problem. An organization needs to solve collective action and principal-agent problems, and binding regimes with formal ties provide the best means to do so. However, these linkages present a clandestine organization with vulnerabilities as well. In order to communicate across these ties, players create signatures and expose themselves to possible detection. Therefore, the need for control and the need for secrecy are at cross-purposes with each other.

**Building Block:** Command, control and communications are necessary liabilities for an illicit structure. The risk of detection is inversely correlated to the organization’s span of control.

The more effective the state is at interdicting and exploiting these pathways, the more costly communications becomes for the criminal organization. Hence, effective state intelligence efforts reduce the organization’s span of control. Conversely, as Diego Gambetta explores in *Codes of the Underworld*, if criminals develop effective security measures, they can operate with greater freedom. Therefore, the suppression regime and the illicit market will struggle to respectively exploit or protect communications links.

**Building Block:** Law enforcement will attempt to exploit illicit coordination mechanisms. Illicit actors will attempt to secure the same. The balance of power in this contest determines span of control.

**Testable Implication:** If the ‘terrorist’s dilemma’ mechanism is active in illicit markets, we would expect to see contestation over communications security measures, especially as criminal groups become more organized.

**Link:** Economics – *The Theory of the Firm* describes external costs for doing business on the open market, and internal costs for doing business inside an organized structure. By exploiting coordination mechanisms, a suppressor can increase illicit internal costs.

Both licit regimes and illicit regimes must solve coordination problems. Illicit regimes have the added problem of using clandestine communications to do so. However, the illicit market

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22 Gambetta, *Codes of the Underworld*. 
has demand and market mechanisms working in its favor. In order for the suppression regime to sustain its attack on the illicit market, there must be a countervailing demand for suppression.

Critical regime theories describe the relationship between norms, power and regime expansion that underwrites this suppression demand. Ethan Nadelmann’s work on global prohibition regimes\textsuperscript{23} describe a five-stage process whereby a substance or practice is stigmatized, sanctioned and suppressed. These regimes ratchet sanctioning efforts through social movements until checked by demand functions. The suppression regime will contest the demand function until higher-level suppression is stabilized, or until social momentum is exhausted (and will then retreat to the previous stable regime.) This equilibrium will hold until exogenous shocks reshape either the social momentum or the demand function.

**Building Block:** Suppression is a two-level game, with deep contestation between suppression demand and illicit demand underwriting a visible contest over organizational coordination and control of market domains.

Critical regime theory provides an additional key insight about the nature of illicit market suppression: a commodity or practice exists along a spectrum from unregulated consumption to complete eradication, and rarely at either of the endpoints.\textsuperscript{24} Narcotics are not themselves illegal, but they are illegal as recreational drugs, or as therapeutic drugs without a prescription. During Prohibition, alcohol was legal in industrial applications, or with a doctor’s signature, or in homemade wine, or as hard cider.\textsuperscript{25} Even something as benign as food is illegal to purchase


\textsuperscript{24} Andreas and Nadelmann, *Policing the Globe*. Nadelmann, “Global Prohibition Regimes.”

\textsuperscript{25} Okrent, *Last Call*. 

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without paying a tax in most places. (Accordingly, the ancient profession of smuggling is still going strong.)

As the Whisky Rebellion demonstrates, when the needle of regulation is moved, it encounters resistance. A demand for illegality grows between the *de jure* laws and individuals’ preferences. If the extant capacity for suppression exceeds this demand, such as as when these illegal preferences are held only by outliers and the laws are considered generally just, then this illegality exists at some residual level, and the suppression effort needs only to perform maintenance. However, if there are large portions of the society who do not support the suppression effort, or if the suppression effort is broadly supported but those who oppose it are particularly violent or powerful, the suppression effort will be contested.

**Building Block:** *Regulation exists in gradients. The gap between consumers’ preferences and regulations creates demand for the illicit good or practice.*

Altogether, regime theories provide a core element of a solution: illicit market suppression is a two-sided coordination game. Both the suppression regime and the illicit market must solve collective action and principal-agent problems. Building efficient structures, and disrupting efficient illicit structures, is essential for success. States must increase the coordinating costs for illicit networks, while those networks will fight through innovation to keep those costs low. Therefore, ‘competitive innovation’ is a key mechanism driving efficiency in our model. Additionally, since social forces underwrite these efforts, our model must account for ‘competitive demand’ in supply.

**Economics.** In order to understand the relationships between competing supply and demand forces, we turn to economics. Formal models provide a very rigorous means of specifying
assumptions and identifying processes, but they “help you tell a story” rather than exhaustively describing the world. These models typically assume a system in equilibrium, which is inherently not the case in any dynamic struggle; they generally limit complexity by modeling preferences as given, which limits their ability to capture emergent behavior. Accordingly, they are unsuitable for direct policy application, but very helpful in understanding the micro-foundations to good policy. We will weave some of the insights from these stories into our project; in doing so, we will also respond to some of the mistakes made through direct policy applications of formal economic models.

The concept of “rent-seeking,” from public choice theory argues that any policy has winners and losers. The potential winners and losers therefore attempt to shape policy to their advantage. This explains strange coalitions such as in the later phases of Prohibition, where bootleggers and anti-alcohol ‘drys’ both defended anti-alcohol laws at the ballot box. The bootleggers would lose if alcohol were legalized, as profits would shift back toward legitimate business; the ‘drys’ would also lose, because the overall level of alcohol would increase. Applied to the problem at hand, changes in the legal status of a good or practice shifts its provisioning from one group to another – prior to the British ban on the Atlantic slave trade, the vast majority of the trade was conducted under the Union Jack; afterwards, the trade shifted to a mix of Spanish, Portuguese, French and American-flagged vessels. The shifts under Prohibition were much less benign – the provisioning of alcohol by organized crime created huge negative externalities of violence, along with a rash of poisonings due to unregulated quality.

26 Rosendorff, Peter. Class Lecture. Georgetown, Fall 2013.
28 Okrent, Last Call.
This combination of volume reduction along with negative externalities is typical of outlawing a previously legal good.

**Building Block:** Outlawing a good or practice shifts production to illicit actors, which results in negative externalities, but it also reduces volume. These negative externalities along with the cost of suppression are weighed against the perceived social benefits of suppression that creates a demand for suppression.

On a macro level, changes in production create coalitions that attempt to protect their position. For instance, during the crafting of Prohibition’s Volstead Act, an agricultural lobby for apple farmers exempted hard cider from the ban on alcoholic beverages. Had the Napa vintners had a crystal ball, they would have likely welcomed Prohibition – the fruit juice exemption created a major shift toward home-brew wine as a licit source of alcohol.\(^{30}\) As industries stabilize around new modes of production, they engage in these rent-seeking behaviors through different forms of protectionism.

Altogether, this results in a *status quo* bias (as there is no lobby for industries which do not yet exist.) This bias can cut both ways – at the outset of the conflict, it works against the suppression attempt, but with time, the effort can create new structural constituencies. For instance, by the late phases of suppression of the Atlantic slave trade, shifts toward industrial production and a trade in marginally more free workers from Asia filled the demand for labor once occupied by the African trade.\(^{31}\) This created a new convergence of interests who were deeply invested in the slave trade suppression campaign. In turn, this creates a demand feedback loop which locks-in the new economic mode at the expense of the old.

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\(^{30}\) Okrent, *Last Call*.

Building Block: Political pressure from established players that lose from suppression is felt immediately; pressure from new players who gain from suppression requires time for their lobbies to organize, unless profits can be anticipated in advance. This requires time and effectiveness to overcome inertia, but can result in ‘lock-in’ through restructuring.

Corollary: However, there is no guarantee that these new players improve conditions – criminals, as well as benign alternatives, have interests.

This idea of ‘lock-in’ brings us to the concept of “path dependence.” Simply, this is the idea that “history matters.” (This is a multidisciplinary idea – networks consider an “adoption curve,” where the more people use a technology, the more useful it is for everyone. Similarly, complexity theory focuses on a system’s sensitivity to initial conditions – minor early variations can result in major late-phase impacts.) More specifically, path dependence is a condition of increasing returns for a practice – the more one continues to do the same thing, the more utility they get from that thing. Thinking about this in retrospect, since there are these returns, there must be some point in the past where another path could be traveled. This is a “critical juncture.”

Building Block: Illicit markets, like any other path dependent process, are rooted at a ‘critical juncture’ at some point in the past. There is, therefore, a possible world where whatever desires they are serving might have been met in another way.

33 This is described famously through the famously inefficient QWERTY keyboard by Paul David – because it would be so impossibly costly to swap to a more efficient keyboard design, we are all stuck with a keyboard layout designed to be slow. Paul A. David, “Clio and the Economics of QWERTY,” The American Economic Review 75, no. 2 (1985): 332–37.
As the genesis of the Atlantic slave trade demonstrates, small effects iterated over time result in dramatic impacts. Malaria was a severe impediment to agriculture in the Americas. After a trial and error process, West Africans’ immunity to the disease made them the most attractive target amongst all the potential groups vulnerable to exploitation (Native Americans, the Irish, prisoners, and urban poor.) However, the longer the Middle Passage ran, the more entrenched it became, even as malaria became a less important factor.

As I will argue later, the British suppression effort eventually forced a new ‘critical juncture’ by eliminating the path-dependent gains for the slave trade as compared to the next best option for meeting demand. As this set in, the combination of the palm oil trade in West Africa and new labor trading interests in India and China created a new path dependency. Therefore, by the late 1800s, even an individual with no ethics whatsoever would make more profit investing in these new labor trades than by trying to re-boot the Atlantic slave trade. If a trade collapses, there are major initial costs that must be paid in order to re-constitute. This provides a lock-in mechanism.

**Building Block:** If the path dependent benefits can be reduced through suppression so that another latent path becomes preferable to the current path, it is possible to force a new ‘critical juncture,’ and thereby swap path dependencies.

**Corollary:** If the potential path dependent benefits of that latent path will eventually exceed the suppressed benefits of the current path, then suppression can be eased out as the new path dependency sets in.

Corollary: The costs imposed on the target market by the suppression regime must equal the ‘switching cost’ from one path dependency to another to be effective (minus any subsidies given to the new benign path dependency.)

Link: Network theory – practical (‘tacit’) knowledge exists in social networks, and if those networks are disrupted, this knowledge is lost.³⁸ This provides a ‘Lock-in’ mechanism.

The discussion of path dependency links to a rich economic literature on addiction. In this reading, addiction is a sort of path dependence that suffers from ‘time inconsistency.’³⁹ This is a problem where an actor’s preferences change over time – for instance, right now I may really want to eat an apple fritter, but I know that in the future, I won’t be happy I ate it.

‘Hyperbolic discounting’ drives this problem.⁴⁰ All else equal, I would prefer something now to something later. This is called ‘discounting.’ Hyperbolic discounting is an aggravated version of this concept – things I can get now are much more attractive, while things I can get later look all the less attractive. This causes me to trade high-value goods in the future for low-value goods right now, because I cannot push through the initial hyperbolic short-term to get to my long-term preferences.⁴¹

Economists Jon Elster and Michael Farrell describe this as ‘myopic addiction,’ where an initial choice alters an individual’s utility function such that they are locked into a set of choices

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that they would prefer to avoid in the long run. An addiction is a particularly virulent form of path dependency. This model explains well the actions of many smokers who desire to quit but are unable to do so; it comports well with common-sensical views of addicts. If addiction applies to individual path dependencies, it should apply to group path dependencies as well.

Societally embedded economic practices act as an addiction, creating path dependencies and reducing elasticity. By the early 1800s, slavery was an increasingly deplorable practice in the British Empire, but it still required approximately 2% of national income per year for half a century to fully undo. In the long run, the British decided that abolition was where they wanted to be, but it took a great deal of commitment to get through the short-term pain enroute to that end. W.E.B. DuBois argues in his dissertation that the lack of this commitment during the Constitutional Convention, and the resulting two-decade reprieve granted to the slave trade, locked in a path dependency that led to the Civil War. If his ‘no trade, no war’ counterfactual is correct, then an early weaning off of slavery would have been far preferable to the catastrophic cold turkey correction that came later. This was not possible, due to weak governance and hence the lack of credible pre-commitment devices.

We can aggregate these social addiction effects into decreasing price elasticity of demand. The longer the practice embeds itself into the culture, the less elastic it becomes. However, the same holds in reverse – suppression becomes a form of detox, a commitment device that diminishes the short-term utility of the practice in hopes of arriving at later, better hour where other practices take its place. This increases price elasticity of demand over time.

45 Elasticity is the change in quantity demanded per unit change in price; decreasing elasticity means the demand is becoming more price-sensitive.
Since this effect requires time to clear the short-term preferences out of the system, it introduces a dynamic element into the demand model. In effect, sustained suppression partnered with demand reduction can begin to ‘tip’ the demand curve, which then makes both efforts increasingly more effective. This effect is contingent upon there actually being high opportunity costs for the practice once clear of the influence of the path dependency. That is, in turn, a function of the other options available.

**Building Block:** Societally embedded economic practices act as an addiction, creating path dependencies and reducing elasticity. Suppression helps to break the addiction by reduces the short-term gains of illicit consumption, thereby dis-embedding it, increasing elasticity, and subsidizing alternate paths (See graph.)

**Corollary:** Suppression must be sustained for enough time for the system to cycle from the addictive preference to the alternate preference, with enough magnitude to keep the addictive path utility below that of the alternate path.

**Testable Implication:** If the addiction model holds for social phenomena, then we would expect to find an endgame with a ‘path swap’ from the suppressed good to another basket of goods that take its place in social demand in successful cases.

**Link:** The crossover point between the two paths provides the same insight as the ‘Critical Juncture’ – time and depth of suppression lead to preference swaps.
Building on further work by Becker, we now scope back out to a seminal argument in the economics of crime. In his “Crime and Punishment: An Economic Approach,” he argues that there is a non-zero socially optimal level of crime – at some point, the costs of suppressing one more unit of crime exceed the benefits of doing so. In a simple version of his model, if the payoff for crime control benefits of solving a crime are exponential - solving a case of murder results in far more benefit than solving a case of graffiti - and the costs of crime control are linear - it costs about the same to hire the 100th police officer as it does to hire the 10th - then there is some cross-over point where the marginal benefits and costs collide (Figure 2, below.) This leads to the policy implication that it is better to try to manage rather than try to eliminate certain classes of crimes. Broadly applied, this results in ‘harm reduction’ policies, where the consequences of non-predatory crimes are mitigated through a public health approach, rather than law enforcement.

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Figure 1: Path Dependency Swap Cross-Over Point, assuming no Alternate Path Incentives (Author)

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47 Ibid. P. 45.
Ethan Nadelmann reaches similar conclusions through a normative lens, yielding a strain of critical theory that argues against the ‘War on Drugs.’ To his reading, counter-narcotics prohibition campaigns are largely ineffective, and their costs are borne disproportionately by marginalized communities. He argues that the vulnerability of a practice to suppression drives the value of a prohibition regime vice a ‘tolerate and tax’ approach; since drugs are less vulnerable than slavery, then the latter approach is preferable. Though I do not engage his argument directly, I will argue later that Atlantic slavery was more resilient than he presents, and Prohibition actually dramatically changed the form and societal role of American drinking. If his arguments hold, then along with Becker, suppression of inelastic markets does not work.

This leads to a null hypothesis – exogenous demand shifts explain apparent success of suppression regimes. In this model, ‘demand will find a way’ through suppression regimes, provided that demand is inelastic. Suppression regimes may appear at the same time as demand shifts, but while states pursue suppression policies because they are equipped for social control through force, it is the demand shift itself that is doing the work. Suppression efforts raise the price and reduce the quantity consumed in accordance with price elasticity of demand, but do not

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48 Nadelmann, *Cops Across Borders*; Nadelmann, “Global Prohibition Regimes.”
50 Andreas and Nadelmann, *Policing the Globe.*
ultimately change demand and therefore cannot effect an end-game. Therefore, if a market actually dies, it is due to exogenous shifts in determinants of demand and suppression regimes are epiphenomenal.

The argument between this model and my own hinges on the illegal Atlantic slave trade, given its flagship status as the clearest and largest-scale case of complex market suppression. If the slave enterprise was dying of its own accord and the suppression regime hastened its demise, this null will deal a fatal blow to the dynamic regimes model we are building here. However, if the slave enterprise was destroyed while still in its prime, then I will reject this null.

**Null Hypothesis:** Unless the illicit market is specifically vulnerable, and unless there is adequate will and capacity on the part of all affected players, suppression is ineffective. Seeming successes are the result of exogenous processes.

Answering Becker, the equally luminary James Q. Wilson argues that crime is a social phenomenon where toleration for minor crimes signals lawlessness and hence makes room for larger crimes. In his ‘Broken Windows Theory,’ minor public crimes are relatively easy to prosecute; by doing so, law enforcement removes sanctuaries for lawlessness, and hence indirectly reduces major crime at relatively low cost.

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51 Becker presents both a hard and soft version of this model. In the hard case, suppression can result in socially sub-optimal results against highly inelastic goods with fixed determinants of demand. In the softer case, consumption in earlier periods changes demand in later periods through ‘rational addiction,’ where knowing and accounting for negative future externalities in earlier choices it still may be rational to engage in addictive behaviors. Becker and Murphy, “A Theory of Rational Addiction”; Gary S. Becker, Kevin M. Murphy, and Michael Grossman, *The Economic Theory of Illegal Goods: The Case of Drugs* (National Bureau of Economic Research, 2004), http://www.nber.org/papers/w10976.


53 Drescher, *Econocide*.

The primary difference between Wilson and Becker’s models rests on modeling assumptions – as in the larger rational choice vs. constructivist debate, if preferences are independent and exogenously given, Becker is right; if preferences are constructed in a social space of shared cultural meanings, Wilson is right.

The dispute between Wilson and Becker culminates around the topic of drug prohibition. Becker argues in ‘Crime and Punishment’ that a state can either increase fines or improve prosecutions to deter crime, since the individual cost of law-breaking is a function of the penalty and the probability of getting caught. Because it is relatively cheap to increase fines, and relatively expensive to improve prosecutions, the state should prefer to increase fines.\(^{55}\) He extends this logic into drug war debates by arguing that under certain conditions, legalizing and taxing objectionable practices can reduce the practice more than outlawing and prosecuting the practice, and at lower cost.\(^{56}\) He argues that relatively elastic legitimate producers are more responsive of to price pressures than inelastic illicit producers.

Wilson offers a fusillade of rejoinders. First, the illegal drug market includes a number of hidden costs (the cost to search for clandestine sellers, the cost to find quality in the market), which understate the effect of suppression.\(^{57}\) Second, geometric increases in drug users have followed legalization in Britain, and this enormous increase led to a slew of other social ills. Finally, he presents a moral case that while well-off users may be able to manage the consequences of consumption, these practices would wreak havoc on less well-off communities, and hence should remain banned.

\(^{55}\) Ibid.
\(^{56}\) Becker, Murphy, and Grossman, *The Economic Theory of Illegal Goods*.
These two arguments form the backdrop of our entire discussion. When the British were debating defunding suppression of the Atlantic slave trade in 1849, both ‘tolerate and tax’ and ‘suppression works’ arguments were made. The same two arguments were similarly made during Prohibition. The debate between the ‘Sex Workers Movement’ and the anti-human-trafficking orthodoxy follows the same strains. Since both arguments describe counterfactual ‘non-suppression’ worlds, they are both highly sensitive to modeling assumptions and therefore difficult to evaluate against each other. While recent marijuana legalization laws provide a rare new source of data to feed the debate, for our purposes, I consider the debate unresolved.

Since we’re building a model for the Admiralty, not for the Prime Minister, we can table the answer to the debate – we assume suppression (and thereby assume that Wilson is right; if Becker is right, the question is moot.) What is crucially important, however, is the fact that there will be a debate, as which side wins has direct implications for the suppression campaign. If the ‘legalize and tax’ side wins outright, the campaign ends; if they gain ground, the resources available to the suppressor decrease.

Since these competing theories will use any available new data to support their side, the production of statistics will play a key role in this debate. However, both models are talking past each other - in Kuhn’s words, “competing and incommensurable solutions.” Since the data

58 Rees, Sweet Water and Bitter; Robert Thorpe, A View of the Present Increase of the Slave Trade, the Cause of That Increase, and Suggesting a Mode for Effecting Its Total Annihilation: With Observations on the African Institution and Edinburgh Review, and on the Speeches of Messrs. Wilberforce and Brougham, Delivered in the House of Commons, 7th July, 1817 (Longman, Hurst, Rees, Orme, and Brown, 1818); Denham, The African Squadron and Mr. Hutt’s Committee.


62 Ibid.
sources in a suppression campaign are inherently incomplete and endogenous, they will likely reach exactly opposite conclusions from the same data. Prohibition economic arguments speak to this – the legendary Yale economist Irving Fisher using metrics as improbable as arrest rates for foul language as proxies to defend the policies, while the no-less-impressive Columbia economist Clark Warburton attacked the policies by running linear regressions on expenditure estimates that the US Coast Guard effectively generated from thin air. In Okrent’s words, “the numbers became a jump ball, each side trying to top them toward its own goal.” Similarly, anti-slave-trade-suppression forces in Britain use statistics to argue that suppression is a failure even as, in retrospect, the effort finally had turned a corner. As a complex phenomenon, these contests are largely indeterminate on the strategic level until they stabilize in an endgame, but the perception of success or failure is critically important to the maintenance of the effort.

**Building Block:** Societal demand for suppression is rooted in a rational calculus of cost and benefit. This calculus is shaped as much by paradigmatic assumptions as by data about success or failure – especially when contestation is most severe.

**Corollary:** ‘Statistics wars’ are a key aspect of the struggle to maintain support for suppression. As in counterinsurgency - COIN - senior leaders need to both be ‘first with the truth’ and need to make the campaign comprehensibly connected to an end-state.

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63 Okrent, *Last Call*. 247-249. Fisher, *Prohibition at Its Worst*, Warburton, *The Economic Results of Prohibition*. Correspondence between CAPT Charles Root, Chief of USCG Intelligence, RADM Billard, USCG Commandant, and Dr. Clark Warburton, National Archives Record Group 26. Warburton asks the USCG for expenditures to suppress rum-running, but since ships are not acquired for specific purposes, there’s not a good answer to that question. Since the inquiry needs a response, CAPT Root estimates that the Coast Guard spends half its time suppressing rum-running, so he answers the response by multiplying the annual Coast Guard budget by 50%. Warburton then cites this number as authoritative and uses it in statistical analyses.

64 Okrent, *Last Call*. 248.
Finally, Coase’s Theory of the Firm provides our final economic building block.\textsuperscript{65} We know that crime exists in organized and unorganized forms,\textsuperscript{66} but we need a model that explains why criminals choose to organize or not to do so. Coase was considering a similar problem – if people could solve all the problems on the open market, why do we see firms and organizations? He argues that there are two types of costs of doing business: external costs in the open market, and internal costs inside organizations (see graphic below.) Certain transaction costs, such as repeated events or hard-to-specify costs, are better handled internally. For instance, if you’re driving to a notary daily, it may make sense to hire the notary full-time. Because of this, we see firms that internalize these costs and are thereby able to take advantage of these efficiencies.

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{Theory_of_the_Firm.png}
\caption{Theory of the Firm (Creative Commons, CC BY 3.0.)}
\end{figure}

I propose that this model of internal and external costs helps us understand the relationship between organized and unorganized crime. Criminals would prefer to be on the open market rather than to pay rents to an organization, but they can only do so if the external transaction costs are low. Law enforcement can increase these costs by patrolling likely marketplaces. Doing so makes internal costs relatively lower, and hence we see organization when law


enforcement is successful at patrolling. However, law enforcement can also target internal costs, using surveillance technologies and interdiction strategies. This will make external costs relatively lower, and thereby decrease organization. Accordingly, the degree of criminal organization and the selection of law enforcement strategy are both locked into a feedback loop together.

**Building Block:** There will be more organization in crime where law enforcement makes open-market costs high, and vice versa. Law enforcement has two strategies – patrol and interdict – and their optimal strategy is to match the strategy mix to crime’s degree of organization.

**Testable Implication:** We should see organization in response to effective patrols, and decentralization in response to effective interdiction.

**Link:** Regimes – this is a similar dynamic to the ‘cost of communications ties’ approach advanced in Shapiro’s Terrorist’s Dilemma.

**Networks.** A complement to the economics literature, network methods focus on the social interaction between elements, while economics tend to treat elements as atomistic pieces of a curve. Therefore, many ideas that economics misses are well described by networks, and vice versa.

Demonstrating this point, we can describe a perfect market in network terms.\(^6\) Such a market requires us to assume perfect competition, which includes complete information with zero transaction costs. This can be imagined as every element (node) having a link (tie) to every other element in the network. Re-expressed in network terms, assuming perfect information is

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the same as assuming no information brokerage. Additionally, a perfect market has infinite buyers and sellers, so this graph has both infinite ties and infinite points. As with physics, such a graph is best imagined as a field rather than a collection of points. The gradients of this field—market forces—are a description of the behavior of a particular network. This sort of network does not exist anywhere in the real world, and is therefore an ideal type.

Bureaucracies tend toward hub-and-spoke structures that have high brokerage at the center, while free associations and partnerships tend to have lower and more equally distributed brokerage. The state and large corporations tend toward the former, small businesses tend toward the latter, but neither actually achieves the zero-brokerage ideal type market. Therefore, I define ‘the market’ not as a space other than the state, but rather as a social structure that is reflected to various degrees within both states and civil society. While state structures tend to embody markets less than civil structures, a bureaucracy can devolve authority and therefore become more ‘market-like.’ Similarly, a few powerful non-state actors can engineer bottlenecks to funnel social relations through themselves, and in doing so become less ‘market-like.’ These organizational structure choices drive a number of key variables for the struggle against illicit markets—market-like structures tend to be more innovative, if less deliberate; they tend to move quicker, if less consistently; they derive great benefit from emergent processes, but much less from planning. All the former are preferable to all the latter when confronting a complex, adaptive adversary.

Building Block: Markets are an ideal type of social relations with zero information brokerage, not a state of being ‘not the government.’ Both the suppression network and

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the illicit market itself are both capable of being more or less ‘market-like’ based on their organization choices. This also affects their speed of adaptation against each other.

**Testable Implication:** We should expect to see suppression regimes become more ‘market-like’ as they adapt to a comparatively ‘market-like’ adversary, assuming they respond to competitive pressures.

**Link:** Counterinsurgency – General Stanley McChrystal’s ‘It Takes a Network’ describes the struggle to overcome bottlenecks to become more ‘market-like.’

The best way for a bureaucracy to become more market-like is through increasing the ease of low-level *ad hoc* linkages between members. Task forces capture this principle well, where lower-echelon interagency representatives work together for a specified end. Such structures allow for creative unstructured conversations, while traditional bureaus rely instead on formal processes. Mid-level commanders whose informal power exceeds their formal power provide a

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common avenue toward these ‘market-like’ reforms - in Gladwell’s words, ‘connectors, mavens and salesmen.’\textsuperscript{70} Similarly, liaison officers perform this function formally as a standing ‘epistemic community.’\textsuperscript{71} However, since these low-level linkages reduce the social power of the senior leaders in the network core, formal leaders may perceive these informal linkers as threats. Therefore, the relationship between formal leaders and informal linkers is crucial in managing ‘market-like’ reforms.

\textbf{Building Block:} ‘Informal linkers’ make bureaucracies more market-like by providing alternate, shorter routes between operators. A nexus of liaison officers would achieve a similar result. This accelerates the network and makes ad hoc alliances easier to build, but comes at a cost in the core’s control.

\textbf{Corollary:} A collegial, de-conflicted relationship between informal linkers and formal leaders is essential to managing ‘market-like’ characteristics in bureaucracies.

This central theme rests on a number of core social network analytic (SNA) concepts. I will do my best to present these in plain English here and throughout – for those familiar with SNA terms, I will include the results of later calculations in footnotes.

The first of these is the idea of centrality.\textsuperscript{72} Centrality describes the relationship of a given point (node) to all other points on the graph. There are a number of flavors of centrality, but the most important one for our purposes is ‘betweenness centrality,’ which is a measure of brokerage. Formally, this is derived by drawing shortest-possible paths between every pair of

\textsuperscript{70} Malcolm Gladwell, \textit{The Tipping Point: How Little Things Can Make a Big Difference} (Back Bay Books, 2002).


points on the graph (‘geodesics,’) and then counting the number of these paths that a point sits atop. This is generally normalized by comparing it against the highest node on the graph.

The intuition here is that there are potential flows between every possible member of the graph, but if most of those flows have to go through one player, that player can extract rents from their social position. Similarly, if one player is particularly good at linking previously unlinked groups, they will have high betweenness centrality. Therefore, players with high betweenness centrality serve as key organizational linkers. There are two ways for a player to get high betweenness centrality – constructively, by linking previously unlinked groups, or destructively, by removing other links so that all flows have to go through them. The former is typically better for organizations.

**Building Block:** ‘Betweenness centrality’ describes brokerage, and players with high betweenness centrality typically serve as linkers for the larger organization.

**Corollary:** These individuals are therefore important members of the organization, as without them, distance between other players would be much higher. Therefore, they are attractive targets – but if they are raising their centrality destructively, then it may be better to let them finish their work first.

This brings us to the idea of the ‘Clustering Coefficient,’ which describes the tendency of social networks to have mutually reinforcing ties. Simply, this is a measure of how many of your friends are friends with each other. In strong clusters, everyone knows each other, in weak clusters, there are a number of ‘structural holes,’ where people who share common ties are not themselves tied. For instance, all the people in a given office should know each other if the office is to work well.
Where clustering speaks to local order, ‘Average Path Length’ speaks to the ability of any player to reach any other on the entire graph. This is simply the average number of links along the shortest path between all pairs of players. The intuition here is that shorter average path lengths means more efficient communications between points. This is particularly important when communications ties are costly, as in the *Terrorist’s Dilemma*.\(^73\)

These two concepts interact in interesting ways. In *Nature*, Watts and Strogatz built an experiment where with a circle of nodes, each connected to their neighbor and their neighbor’s neighbor, were randomly rewired to another node across the circle.\(^74\) Initially, since all the neighbors were connected, clustering coefficients were high, but so was average path length, as paths to the other side of the circle had to go through many links. The first couple of re-wirings radically reduced average path length by creating shortcuts, but as the re-wirings continued, the network started to lose coherence – clustering coefficient decreased as the shortcuts were no longer as helpful, and eventually started to disrupt the graph. There is, therefore, a ‘sweet spot’ when only a few links are rewired, where there is still local order, but enough shortcuts to get anywhere quickly. This is a ‘small-world network,’ and both common and important in nature and the social world.

For a real world equivalent, imagine a number of academic departments where everyone knew each other, but no one knew anyone from another department. Randomly rewiring a few of these intradepartmental ties to another department helps the whole set of people connect to each other – there are enough shortcuts to get from one cluster into another, but everyone in the clusters still basically knows each other. Say, however, we rewire so many ties that nobody in

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\(^73\) Shapiro, *The Terrorist’s Dilemma*.

departments knows each other anymore – this is no longer an efficient network, as everyone is confused about who knows whom.

A partner to the ‘small-world network’ is the ‘scale-free network.’ Like a small world network, a scale free network is an efficient shape common in nature and the social world. They are slightly different: a small world connects every player to each other in an efficient manner, while scale-free-ness means that a network can grow indefinitely without bogging down. For instance, one don't notice when another million users log on to the Internet in India, but one notices intensely when another thousand users log onto a campus network – the Internet is scale-free, while the centrally managed hub-and-spoke campus intranet is not. The core intuition of both of these models is similar - for an efficient network, we need a mix of strong local clusters with a few key players that link the whole network together.

**Building Block:** ‘Scale-Free’ and ‘Small-World’ networks are efficient configurations with both strong local order and an ability to get anywhere quickly. These are desirable structures for an adaptive organization’s efficiency.

Sean Everton’s work on dark networks builds on these ideas. A counter-terror strategy should prevent a terror organization from occupying this ‘sweet spot’ of efficient structures. His strategy against dark networks is to sculpt them in such a way as to push them out of the ‘sweet spot’ one way or another. Since the network needs both links to the outside and strong core connections, he targets whichever of the two is relatively scarcer. So, if a network has many linkers, he recommends disrupting the any tight clusters – doing so makes the network ‘too cosmopolitan’ and therefore ineffective. Conversely, if a network has strong cores, he

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75 Formally, a scale-free network is one where the degree distribution – number of links a node has – follows a power-law distribution – long tailed distribution where a few nodes have the majority of ties.

76 Dr Sean F. Everton, *Disrupting Dark Networks* (Cambridge University Press, 2012).
recommends attacking the linkers in the network – this makes the network ‘too parochial’ and similarly ineffective.77

**Building Block:** An excellent counter-network strategy is to build one’s own organization toward network ‘sweet spots’ of local order and low overall path length, while tipping your opponent away from the same.

**Corollary:** Organized crime tends toward strong clustering, so target their linkers; disorganized crime lacks strong clusters, so disrupt their ability to cluster together. In all cases, the illicit market should be prevented from achieving the network ‘sweet spot.’

**Link:** Economics – the network ‘sweet spot’ can serve as a real-world proxy for ideal market conditions, as information moves cheaply and there are no scale constraints. It is more useful in organizational design, because it exists in nature.

Continuing the ‘network targeting algorithms’ strand, the field of Operations Research uses networks to identify vulnerable points in supply chains.78 The Maximum-Flow Interdiction Problem (MXFI) attempts to maximally disrupt a supply chain’s resource flow with a minimal use of resources.79 As with centrality-targeting algorithms, the goal here is to find key chokepoints, but the flavor is slightly different as this method looks at flow volume. An effective strategy for solving this strategy is to maximally lengthen the shortest path from the

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77 Ibid.
78 This line of research stretches all the way back to the Second World War’s Industrial Web theories intended to shut down the German wartime economy – of course, given the disappointing results of the Schweinfurt raid, it is some comfort that these theories improved with time.
start to the end-point.\textsuperscript{80} While computationally complex, the insight from this method is that certain players possess rare skillsets, and removing these players from the network greatly reduces its flow.

\textbf{Building Block:} An effective way to reduce network flow is to remove pieces of the shortest path in order to make the shortest route from beginning to end as long as possible.

\textbf{Corollary:} Certain skills or resources are very difficult to do without – any shortest path will route through players who hold rare essential resources. Therefore, players who possess these skills or resources are attractive targets.

Closing the loop on network targeting algorithms, David Kilcullen is generally not in favor of kinetic-focused approaches to counterinsurgency. However, he does make an exception in the appendix of his \textit{Counterinsurgency} for a high-volume ‘connector and facilitator’ approach.\textsuperscript{81} This idea builds on the ideas of Everton’s ‘sweet spot’ - since most insurgents maintain tight cells for security’s sake, they are relatively short on linkers, hence target these connectors. Similarly, this approach is compatible with MXFI insights - certain people have difficult-to-replace skillsets, hence target these facilitators. He adds a dynamic element, as well – since the network can repair damage, one must remove these players faster than they can be replaced. Altogether, this does not destroy the network outright, but causes it to bog down enough to give the state a free hand in reshaping governance.


\textsuperscript{81} David Kilcullen, \textit{Counterinsurgency} (Oxford University Press, USA, 2010).
This ‘Kilcullen Algorithm’ can also be applied to the problem at hand. Illicit markets share certain aspects with the Al-Qaeda networks Kilcullen is describing, as both are decentralized, make use of supply chains, and rely on communications technologies. While these problems are obviously not wholly isomorphic, illicit markets require connectors and facilitators as well, and illicit markets regenerate damage arguably better than terror networks. Therefore, his algorithm should work; in fact, it may work even better on a human trafficking supply chain than on the Improvised Explosive Device supply chain for which it was designed.82 As the endgame in counterinsurgency is restructuring governance, the endgame in illicit market suppression is restructuring the demand function, so an immobilization strategy should buy moral suasion and alternate path subsidies the space to work.

**Building Block:** The ‘Kilcullen Algorithm’ – remove connectors and facilitators more quickly than the network can replace them – immobilizes an illicit network long enough for demand restructuring to take place.

**Corollary:** In order to execute this algorithm, the suppressor needs intelligence to find and fix these nodes, operators to finish them, and feedback to quickly continue the cycle across the network topography.83

**Link:** Complexity – the speed at which a suppressor can iterate through this cycle is a function of their ability to quickly make sense of their adversary (and themselves) as they adapt,84 which is a function of organizational structure.85

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82 Personal Interview, Gen Montgomery Meigs, 2012.
85 Scott, Seeing Like a State.
This raises another discussion – algorithms vs. heuristics. An algorithm is a fully specified set of behaviors; heuristics capture general principles and patterns. The problem with algorithms is that they rely on a degree of knowledge of the overall network that is generally unrealistic against a clandestine network. For instance, if I choose to target players with high betweenness centrality in order to disrupt the class of connectors, I need to see enough of the network structure to identify these players.

The last point parallels a classic ‘ops v. intel’ argument about attacking or observing a known target. If you neutralize the target, it no longer produces intelligence value, but it is also no longer a threat. But if you neutralize a minor target and thereby never find a linked major target, you may be worse off. This algorithmic discussion may result in decision paralysis for structural disruption strategies against dark networks.

Heuristic solutions are typically better suited against illicit networks – some simple rules can yield elegant solutions if they follow the contours of the network’s internal logic. For instance, if I want to target connectors, I can simply pull on connections – pull on strings and you’ll find knots more often than not. So if I raid a target, exploit the intelligence from the target to find more linked targets, and then raid those targets, I’ve made efficient coordination structures into a liability for the illicit network. This heuristic is simple to implement yet remarkably effective at denying scale-free ‘sweet spots’ to illicit networks.

This insight is supported by a broader theme from network science – scale-free networks are very damage-resistant but very virus-prone. If someone burns down a server farm, the Internet will route right around it with minimal impact. But if someone writes a new virus, it will bounce

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from one server to another and infect large numbers of computers. Scale-free networks are remarkably efficient a ‘boundary spanning’ – finding routes around any blockage – and therefore inducing a blockage by attacking a node doesn’t do much. In effect, damage cuts against the grain of the network. Viruses, on the other hand, hijack the structure and thereby follow the grain of the network. Heuristics determine the key organizing principles of the network and inject risk into them.

**Building Block:** Scale-free networks are damage-resistant but virus-prone. Attacks that follow the natural contours of the network are more effective. We can impose costs on the illicit market by pirating its coordinating mechanisms.

**Link:** Regimes – Shapiro’s Terrorist’s Dilemma explores this coordination efficiency problem.

In order to effectively engage illicit flows, we must solve targeting problems – for instance, how do we focus suppression the vulnerable points in the system; how do we figure out what we do and don’t know about the illicit network?\(^{87}\) But if our whole question of illicit markets is reducible to a targeting problem, then we have a relatively simple answer to our puzzle. As with regimes, the soft version of these network targeting hypotheses will be incorporated into the adaptive network model I am proposing. These theories might also stand alone as an alternate hypothesis, which I summarize as ‘power applied correctly disrupts illicit markets.’

**Alternate Hypothesis:** Illicit market suppression is a targeting problem – power applied to critical points results in successful outcomes.

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Taking a step back, networks formalize the constructivist insight of ‘agent-structure co-constitution.’88 This is the idea that players both shape and are shaped by their social relations. Any organization has a narrative that holds it together, but that narrative both shapes its members and is shaped by its members. For instance, political parties’ platforms attempt to bring coherence to its diverse coalitions, so they are driven by the membership; simultaneously, those narratives stabilize relations within the coalitions, so it drives membership as well. Mark Granovetter describes this in network terms in “The Problem of Embeddedness,”89 where individual choices are embedded within social structures that constrain those choices.

This supports another constructivist insight: demand is socially constructed. In order for there to be a demand for a good, there needs to be a social structure to house that demand. In the case of drugs, even given the ‘brute fact’90 that dopamine is linked to ingesting certain substances, the creation of those substances, the knowledge about how to consume them, and a social support structure of compatriots are necessary elements to the demand function. Without this structure, demand is too ill-formed to result in meaningful action.

In an extreme example, Mao Tse-Tung eradicated China’s opium problem by eradicating opium addicts – without an ‘opium culture,’ the demand for opium took a long time to reconstitute.91 In a less extreme form, re-starting the Atlantic slave trade to Brazil92 in 1870 would have been difficult, even without suppression, as the practical (‘tacit’) knowledge that had

90 Alexander Wendt, Social Theory of International Politics (Cambridge University Press, 1999).
been stored in slaver social networks was long lost – one would have to start from scratch. Expectations are stabilized through repeated social interactions, so any new social enterprise incurs start-up costs as those interactions are stabilizing. Therefore, if demand is socially embedded, it can be socially disembedded; once it is, a social entrepreneur will have to pay start-up costs to reconstitute it.

**Building Block:** Demand functions are socially embedded, not exogenously given. These networks rely both on their structures and narratives that stabilize these structures.

**Corollary:** The social networks that house these functions can therefore be engaged through both moral suasion and structural disruption.

Finally, we would be remiss if we did not mention Keck and Sikkink’s work on Transnational Activist Networks (TANs).\(^9\) TANs link groups of activists together across national boundaries, which allows them to advance moral consensus. A classic example of this is the historical abolitionist movement, where the American movement was both inspired and adapted innovations by their British counterparts.\(^9\) If this TAN incorporates a shared group of experts, who serve as the interpreters for their issue to their governments or publics, this effect is all the more powerful.

In Hass’ words this is an ‘epistemic community.’\(^9\) While this normative action is not a formal element of the suppression campaign, both efforts can support each other. Normative action bolsters support for the campaign against the illicit market; successful suppression reduces the benefits from the illicit practice, making it more likely that people will be sympathetic to

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\(^9\) Keck and Sikkink, *Activists Beyond Borders*.
\(^9\) Haas, “Do Regimes Matter?”.
alternative options. However, while the soft form of TANs broadly supports the mechanisms in a suppression model, we must consider the hard version of the TAN hypothesis as a competitor to suppression. If norm entrepreneurship does all the causal work in our cases, suppression is epiphenomenal.

**Alternate Hypothesis:** *Transnational Activist Networks change norms surrounding an illicit market, thereby weakening demand for the good or practice.*

**Complexity.** Though social network methods provide powerful tools for analyzing static social influence, they are less equipped to deal with questions of causality or change. Because most economic theories are reductionist, they provide clear causal stories for reducible phenomena. Unfortunately, agentic and adaptive ‘tough cases’ defy reductionist analytics for the same reasons they thwart state suppression attempts. Therefore, we require a deeper arsenal of tools to deal with these complex problems.

Fortunately, complexity theory provides approaches for solving problems with overlapping and intertwined causal chains. In *The Character of Harms*, Malcolm Sparrow’s attacks these challenges a systems approach.96 He lays out the harm to be addressed – transnational crime, global warming, etc. – as a complex system, and then seeks to ‘sabotage’ that system so that it can no longer function. Since members of many different institutions likely own a piece of the larger systems puzzle, this approach typically yields an inter-agency ‘Task Force’ result. By mapping the various causal chains involved, we can identify ‘knots’ where these intertwined chains can be cut. Provided it has sufficient remaining resources, the system will attempt to re-boot itself after a successful ‘harm sabotage.’ The cycle then continues as the Task Force seeks

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http://books.google.com/books?hl=en&lr=&id=pIlDuLjmStkC&oi=fnd&pg=PA1&dq=Malcolm+Sparrow+strategic&ots=Iraj_-mDBy&sig=zRvauOhORFqZZHF-1cvyN4chHxE.
to identify and map the re-booted system.

**Building Block:** While ‘tough’ illicit markets cannot be easily reduced to simple models, they do have vulnerabilities nonetheless. These vulnerabilities can be identified and exploited through well-built networks of suppressors.

**Corollary:** Since this process is likely to be iterative, the speed at which the suppression network can maintain this cycle is a key measure of effectiveness.

Boyd describes this process of iterated adaption as the ‘OODA Loop’ – Observe, Orient, Decide, Act, and repeat. One observes the world, makes sense of it, and then orients their decision-making models to reflect the world. Using these models, they decide and act, and in doing so, they change the world and must observe it once again. By acting in the world, one changes the world, which means future actions will have to be adjusted to take these changes into account. Therefore, one must continually update mental models of the world, even as they use these models to perform actions in the world.

This becomes all the more important when in conflict, where both sides are iterating through this cycle and thereby changing this world. In this **competitive sense-making,** whichever side is able to more quickly make sense of the world and act will shape the world and thereby achieve their objectives. This ‘frame rate’ – the speed of an accurate sensemaking-action cycle - is itself shaped through structural configurations. More efficient organizations will more rapidly

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98 As an aside, one potential pitfall of Sparrow’s approach is the “innovator’s dilemma” (Clayton M Christensen, *The Innovator’s Dilemma: The Revolutionary Book That Will Change the Way You Do Business* (New York: Harper Business, 2011)). A successful ‘harm sabotage’ changes the nature of the problem, and the suppressor must reconcile themselves to these changes. However, doing so requires them to change a model that has heretofore worked well for them. One must be particularly vigilant that they don’t get caught in the gravitational pull of their own successes.
identify anomalies, gather information, make sense of it, and make use of it; inefficient organizations will take longer to do all of the above. Therefore, structural efficiency is a determinant of a suppressor’s ‘frame rate,’ which in turn predicts success in dynamic, iterated contests.

**Building Block:** An organization’s sense-to-action ‘frame rate’ predicts success in competitive adaptation, and this is an important determinant of overall success.

**Link:** Networks – Since organizational structure drive this ‘frame rate,’ more ‘market-like’ structures will tend to iterate faster than bureaucracies.

The linchpin of Boyd’s model is the idea that organizations constantly struggle to make sense of their world by gaining knowledge. Michigan Professor Karl Weick, in *Sensemaking in Organizations*, depicts this as an ongoing social process that favors plausibility over accuracy. However, in order for knowledge to exist in an organization, it must be reside somewhere within the structure. For example, a skill or fact known by a former member of the organization is lost if not formally stored as logical content or relationally transferred as practical content.

This knowledge can exist in two forms – ‘formal knowledge,’ which is generally applicable, usually reductionist, can be written and stored easily, and can be applied to diverse situations. It therefore benefits from the huge economies of scale in large-scale institutions. However, it is often less useful than practical knowledge in specific situations. An example of ‘formal knowledge’ is a written report or an organizational chart. Most familiar organizational databases and processes exist in this form – a bureaucracy is built upon principles of formal

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101 Weick takes a post-modern tack on this point, holding the idea of objective accuracy as chimerical. Ibid.
knowledge, which therefore displaces practical knowledge in organizational contests. The sardonic tongue-in-cheek bureaucratic critique, “itbriefs well,” speaks to this problem.

The other side of the ‘theory v. practice’ debate is ‘tacit knowledge,’\textsuperscript{102} which is highly specific, generated through conversation, not always consciously known, and resident in social networks. It does not transmit well through formal communications means, but grows out of iterated practices in community.\textsuperscript{103} Therefore, local clusters of friends and co-workers know more than they think they know about the tasks they routinely perform. This becomes apparent when a new recruit joins the community – regardless of how hard they study the formal resources available for the task, they lack the tacit knowledge and will therefore doubtless make some ‘rookie mistakes.’ The members of the community may therefore realize what they know only through observing the results of a newcomer not knowing it. Tacit knowledge is essential to innovation and application, but it does not transmit or store well outside of the community in which it is resides.

Both of these types of knowledge are essential for applied organizational sensemaking. Moreover, if both co-exist they can reinforce each other. An expert craftsman can formalize some degree of their tacit knowledge by creating a manual or recording lessons learned. A good theorist can identify real-world situations where they can apply their ideas, and can tailor them to situation-specific circumstances.

\textbf{Building Block: In order to make sense of the world, an organization must create and use both formal and tacit knowledge. Formal knowledge provides stability and economies of

\textsuperscript{102} Polyani, \textit{The Tacit Dimension}.

scale, tacit knowledge allows for innovation and application. If reconciled to each other, they are mutually reinforcing.

**Link:** Networks – Since tacit knowledge resides in ‘local clusters’ of friends and co-workers, and formal knowledge moves quickly through long-distance ties,\textsuperscript{104} scale-free and small-world networks are efficient at sensemaking because they enable the generation and transmission of both forms of knowledge.

In *Seeing Like a State*, James Scott applies the tension between these two types of knowledge to statecraft.\textsuperscript{105} Formal knowledge (*techne*) is the language of high modern states – he describes the enormous, and enormously inefficient, Soviet factory farms as examples of the limits of this sort of language. Similarly, when creating administrative subdivisions states prefer straight lines due to analytical simplicity, yet straight lines are almost never seen in nature as they are rarely optimal shapes for specific circumstances. Conversely, tacit knowledge (*metis*) is the lifeblood of local voluntary communities, generational tribal practices, and civil society in general. Scott describes local artisanal crop planting techniques where taller plants shelter shorter ones – these practices are too complex to scale up well, but are fantastically efficient in their native conditions. Unfortunately, because the language of metis is ‘illegible’ to the high modern state, a state would encounter this highly adapted process as a confusing mess, and would therefore replace it with a less efficient but scalable method. Scott applies this ‘legibility’ critique both to Soviet central planning and formal World Bank and International Monetary Fund development strategies.

\textsuperscript{105} Scott, *Seeing Like a State*. 
This ‘legibility’ critique applies remarkably well to asymmetric contests between states and adaptive actors such as terror groups and illicit markets. While the formal-thinking state owns tremendous advantages of scale, it lacks the low-level maneuverability of a highly contextualized tacit-thinking group. The state can use this resource advantage to engage low-level actors by building high-resolution formal models of low-level actors that allow it to bring its overwhelming force to bear. For instance, an organizational chart of an illicit network, or a geographic heatmap of threats, allows the state to focus resources and interventions. However, the advantage of tacit knowledge improves geometrically as we move into more specific, localized context. The state will eventually encounter a point where its resource exchange ratios are so terrible that it can no longer maintain parity with a far-less-resourced asymmetric adversary.

One example of this is offered by Remy Mauduit, who served first with the Algerian insurgency and later with the French Special Forces in the Algerian Civil War.106 As an insurgent, knew exactly where one French commander’s area of responsibility ended and the next began, and would focus attacks on these sub-optimized ‘straight line’ boundaries. He could jump from one side to the other under the often-correct premise that these commanders were not efficiently coordinating with each other. This ‘sanctuary-in-between’ is a function of the mismatch between local tacit knowledge and general formal knowledge.

This ‘sensemaking frontier’ is can be though of as a noise floor,107 which the asymmetric adversary can hide beneath provided they eschew formal coordination means. For instance,

107 This can also be seen as ‘techne bog-down.’ If the planning enterprise is seen as a large linear regression where we keep adding x-terms, there will eventually be an x-term that drops the significance of the model below a useful level. Unfortunately, bureaucracies have little sense of when they’ve hit that crossover point, and generally continue
technical communications are highly legible to the state, so terror groups who make use of these produce an identifiable signal for the state to find. An effective state keeps this ‘sensemaking frontier’ low enough to preclude threat groups from acquiring the tools they need to become large-scale threats and thereby maintains sovereignty. By adding resources, improving coordination, and creating havens for tacit knowledge within the organization, the state improves their low-level exchange ratio and thereby drops this frontier further. Since tacit knowledge is context-specific, and this increased focus comes at a cost to problems in other contexts, so the state cannot do this for all problems simultaneously.¹⁰⁸

**Building Block:** An illicit market enjoys excellent resource exchange ratios in low-level contests against a state, as its native language is ‘tacit knowledge’ and it can quickly and easily make individual decisions without formalizing universals.

**Corollary:** Asymmetric adversaries enjoy a ‘sanctuary-in-between’ against states, where the artificial limitations of sub-divisions do not align with natural contours.

**Link:** Networks – ‘Market-like’ structures allow a state to better use tacit knowledge, which takes the edge off of these terrible low-level exchange ratios.

Part and parcel of this problem is the state’s need to name things in order to make use of them. A rum-runner, for instance, can simply buy a ship and set it sailing. For the Coast Guard to buy a ship, they must build schematics and write manuals, use standardized parts, and follow on. In Steacie’s memorable quote, “an efficient organization is one in which the accounting department knows the exact cost of every useless administrative procedure which they themselves have initiated.” Edgar William Richard STEACIE and John David BABBIT, *Science in Canada. Selections from the Speeches of E.W.R. Steacie. Edited by J.D. Babbit. [With a Portrait.]* (Pp. x. 198. University of Toronto Press: [Toronto, 1965).

¹⁰⁸ That said, it is most likely a good thing that there is always some point below which formal sensemaking fails, as this serves as a check on totalitarianism.
specific procedures. This impedes innovation, as any changes require large up-front costs and significant structural commitment.

One solution creates ‘holding categories’ for tacit knowledge within the bureaucracy. Since an office requires organizational charts, office symbols, titles and named functions to have a place within the bureaucracy, a holding category has all of these when viewed from the outside. However, from the inside, it is a space of conversation, innovation and tacit knowledge. Before innovative ideas from the holding category are released into the bureaucracy, they are packaged in formal terms. Classic examples of this are Kelly Johnson’s Skunk Works, US Special Operations Command, and as we will see in Section Three, the Prohibition-era Coast Guard Intelligence Office.

Since the ‘holding category’ serves to smuggle the benefits of tacit knowledge into a formal organization, we must consider the power of interpreters in organizations. While the world of formal knowledge and the world of tacit knowledge are often strongly scripted, formalizing a tacit idea or implementing a formal idea provides great latitude for individual agency. For instance, there are any of a number of ways that counterinsurgency theory could apply to a specific situation, and the interpreter can choose amongst these. Conversely, there are any of a number of lessons that can be drawn from a set of experiences, and the interpreter can decide which ones to write down. This interplay between tacit and formal knowledge provides an engine by which formal structures deal with tacit knowledge and thereby become more ‘market-like.’ Holding categories provide sustainable structural incubators to house this process.

One particularly interesting holding category from that case involved captured rum-runner ships, which the USCG would put to work as their own. Since the bureaucracy needed a name by which to standardize the non-standard captured ships, the USCG created a ‘CG-800 Class’
holding category and proceeded to name each captured ship sequentially within this class. This yielded the strange result of schooners, yachts and speedboats all being considered the same class of vessel, but allowed the practice of using seized boats to be conducted reasonably efficiently within the bureaucracy.\textsuperscript{109}

**Building Block:** ‘\textit{Holding categories}’ help state actors make use of tacit knowledge by creating spaces for difficult to formalize capabilities or knowledge within the formal structure.

Scott’s critique of over-reliance on formal knowledge raises the issue of ‘ontology.’ Computer science foregrounds the problem Scott highlights in bureaucracies: since computers have no language for tacit knowledge, anything a computer interacts with needs to be formalized.\textsuperscript{110} Therefore, machine-readable datasets are built out of ‘ontologies’ made from categories and values. Building an ontology requires choices about what categories are important, and what possible values can exist within these categories, and all of these choices are loaded.

For instance, say we are trying to get a general sense of the transportation capabilities of a state by taking a census of all vehicles. If we were to build only one category, (Vehicles,) and populate it with a census of everything with an engine on board, our database would be useful only for the broadest questions. Conversely, if we build a category for every model of vehicle (F-150 Truck, Cessna 172, 6000-series Metrorail Car,) we would have an unwieldy database that

\textsuperscript{109} This idea is ubiquitous – consider the ‘GOVT 999’ class. A registrar needs a formal name for all classes, but it make sense to make an accommodation for classes that emerge from low-level conversations. This ‘catch-all’ allows these classes to occur with some basic legibility for the larger system. If the class is iterated enough times, it makes sense to take it out of the holding category by formalizing it and thereby gaining the benefits of the system’s information distribution architecture.

is equally unhelpful for most mid-range questions. A ‘Goldilocks Solution’\textsuperscript{111} splits the difference between these extremes, aggregating vehicles by type – cars, boats, trains and so on. This is most likely the most useful ontology for the question at hand. The takeaway here is that the best ontology depends on the question at hand.

This becomes a problem when one needs to coordinate data between organizations, as databases cannot speak to each other without compatible ontologies. Organizations that use ontologies driven by their own internal structure exacerbate this problem, as it is rare that two organizations will share the same internal structure. Building a compatible ontology is a collective action problem. However, since category choices are loaded, it is a difficult one to solve. To make matters worse, the illicit market’s tacit knowledge does not need to solve an ontology problem in order to do business.

An innovative solution to this problem is the ‘dynamic ontology.’ This approach treats all items in the dataset as ‘entities’ without imposing categories upon them, and then identifies which of these entities are linked to each other.\textsuperscript{112} Using this method, like things will congregate with like, which organically reveals categories. This percolation approach to categories simplifies the coordination process, as it does not rely on any specific organization’s top-down ontology. As seen in networks, this approach is more ‘market-like’ – it is therefore unsurprising that it was built out of experiences combatting Russian organized financial crime and came of age countering terror and insurgent groups.\textsuperscript{113}

\begin{flushright}
\textsuperscript{111} From the nursery rhyme - Too coarse, too fine, or just right.
\textsuperscript{112} Sinesky, Asher. “Palantir 101.” \textit{Palantir Technologies Website.} \url{http://www.palantir.com/library/}
\textsuperscript{113} Presentation, Palantir Technologies, Google/Polaris Global Hotline Rollout, 2013.
\end{flushright}
Building Block: The ‘ontology problem’ is a practical consequence of the formal v. tacit knowledge mismatch – governmental actors must build a compatible ontology in order to coordinate, while the illicit market does not.

Link: Computer Science – ‘dynamic ontologies’ avoid this problem by skipping categories altogether through depicting the world as ‘linked entities.’

Concluding our review of complexity, it is clear from Scott’s critiques that we require a model for understanding unplanned but non-random processes. Page’s ‘Complex Adaptive Systems’¹¹⁴ fit the bill. Rather than viewing stochastic motion as a problem to be solved, these systems make use of this naturally occurring motion to optimize solutions. In its simplest form, a complex adaptive system is built of a ‘shaker’ – a source of diversity and stochastic motion, and a ‘sifter’ – a selection process that retains useful outcomes. As with Darwinian processes, time plus variation plus selection equals highly optimized results. This provides the mechanism behind ‘tacit knowledge.’

Building Block: Complex adaptive systems use stochastic motion and a selection process (‘shaker’ and ‘sifter’) to derive optimized results. These systems can be found in ‘market-like’ processes as well as in nature, and help explain innovation.

Emergent processes build on these dynamics – large events may be caused by seemingly unrelated previous small events. These are connected through a chain where every individual link makes sense, even if the connection between origin and destination does not. For instance, the rise of abolitionism eventually led to Corsair pirate kidnappings being labeled ‘white

slavery. This, in turn, led to a confrontation with the Dey of Algiers and the subsequent 1816 naval bombardment of the city’s fort. Because Algiers was nominally part of the Ottoman Empire, this fostered a narrative of ‘Christian Slaves of the Muslim Turks.’ Combined with a Balkan revolt and a dash of Lord Byron’s romanticism, this narrative bolstered European support for Greek Independence. Had anyone told Thomas Clarkson that his relentless campaign against Atlantic slavery would have resulted in Hellenic statehood, he would have likely been quite confused.

Both of our main historical cases are subject to emergent processes. Atlantic slavery grew out of a complex collision of malaria epidemics in the Americas, natural West African resistance to malaria, and the expansion of slavery from the island of Fernando Po off the Atlantic coast of Africa. These evolved into the system of race-based natal slavery and the Atlantic trade that supported it. Similarly, the Prohibition movement in the United States was responding to a collision between industrialization, immigration and cheap whiskey. The cheapness of whiskey was in turn driven by an overabundance of corn and an under-abundance of roads, which resulted in farmers distilling their corn – liquor was the most cost-effective and spoilage-resistant means of moving corn to market. I will argue later that emergent processes brought both the rise and fall of Prohibition as well. From the perspective of a contemporary planner, westward expansion does not seem a priori likely to lead to Prohibition; however, emergence does not require a plan.

Building Block: ‘Emergent processes’ are unplanned but non-random results of a chain of events in which every step is rational, but the whole is not a priori rational. These are the result of complex adaptive systems, and figure strongly into policy outcomes.

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117 Okrent, *Last Call.*
If emergent processes cannot be planned, but are important in outcomes, then how does one make use of them? If planning does not work, then perhaps practice will. ‘Practical design’ makes use of complex adaptive systems to benefit from these processes – with a well-built stochastic generator and selection mechanism, useful emergence can be retained and un-useful emergence discarded. If centralized state planning takes a ‘building’ approach, practical design takes a ‘growing’ approach. It does so by setting the conditions for a desired type of emergence, and then feeding beneficial results while weeding out harmful results. This requires a greater toleration for diverse outcomes,118 with more flexibility in identifying and fostering unexpected but helpful processes. Ultimately, this is a structural question, which brings us back to the ‘market-like’ reforms refrain.

**Building Block:** ‘Practical design’ uses complex adaptive systems principles to allow an organization to take advantage of adaptive processes. It is a growing approach as opposed to a planning approach.

**Corollary:** This is uniquely helpful for ‘wicked problems,’119 which do not reduce well to planning-based solutions. You can’t plan your way out of a wicked problem, but you can grow your way out of one.120

This concludes our survey. Regime theories provide the strongest extant solutions to the problem of illicit market suppression. While they excel at identifying static solutions, more challenging agentic and clandestine illicit markets force us to look further. Economic theories describe the fundamental forces behind illicit markets, but they inherently reduce the problem and therefore cannot deal with adaptation questions. Network theory identifies structural

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118 Page, *Diversity and Complexity*.
120 Personal Interview, Dr. Bray, 2013.
features at work in these contests, and presents effective algorithms for shaping these structures toward our ends. However, it lacks a theory of change. Complexity theories solve this problem, breathing life into networks through an approach that makes use of structure and stochastic motion to achieve optimized results. Between these four fields, we’ve identified a number of building blocks from which we will build a model in the next chapter.

**Summary: Building Blocks and Alternatives.**

**Building Blocks.** In this chapter, we staked the territory upon which we will build our model and we gathered the building blocks for that model. This revealed two broad themes. We need a suppression regime that incorporates adaptive functions and complex processes, and one with mechanisms to inhibit these processes within the illicit market. Suppression also requires deep societal support for suppression is a key factor, as is the governance that supports it. Any theory of victory must lead to a demand-side solution. This means that our answer must find a way into the social and cultural spaces where demand is constituted.

**Adaptive Regime Design.** Exploring the theme of adaptive regime design, three clusters of findings point the way toward a model. First, certain natural forms of social interaction lend themselves toward innovation and adaptation. Bureaucracies excel in achieving predictability and instituting formal knowledge, but ‘market-like’ structures allow for robust organic agency through tacit knowledge. Lateral low-level linkers provide the ligaments to sustain these sorts of structures inside of formal institutions. Since these structures innovate well, competitive pressures should encourage this ‘market-likeness’ within institutions during protracted asymmetric campaigns.

- ‘Market-like’ structures allow for tacit knowledge inside formal structures. These yield less predictable but more innovative results than bureaucracy.
These adaptive pressures vary according to the optimal form of the illicit market. The illicit market and the suppression network respond co-constitutively to each other through these competitive pressures. If law enforcement patrols social ‘focal points,’ the illicit network can move toward more defensible formal structures. If law enforcement interdicts these formal structures, the illicit market can decentralize in response. We should see increasing illicit organization in response to effective patrols, and illicit decentralization in response to effective interdiction.

- *Patrolling strategies disrupt social ‘focal points’ for unstructured markets, whereas interdiction strategies target the brokers in hierarchical illicit structures.*

Finally, the suppression contest hinges on adaptation. An organization’s sense-to-action ‘frame rate’ predicts success in competitive adaptation. Since success in suppression against agentic, clandestine networks is a function of competitive adaptation, this is therefore a determinant of overall success. Since organizational structure drives this ‘frame rate,’ more ‘market-like’ structures will tend to iterate faster than bureaucracies. Removing connectors and facilitators more quickly than the network can replace them immobilizes an illicit network long enough for deeper restructuring to take place.

- *The competitive adaptation ‘frame rate’ of an institution depends on its structure; while individual adoptions cannot be reliably predicted, the overall speed of adaption can.*

*Regime Support and Demand.* Two clusters of findings from the literature steer through the contours of demand. First, the core struggle in the support and demand space is about governance. Both sides need to build governance conducive to their ends, and their ends are mutually exclusive. Good governance supports demand restructuring, while poor governance allows the illicit market to thrive by filling their coffers through illicit demand. Governance can
be described as a combination of support and efficiency. Support is the political will to continue a campaign (‘check-writing ratio’) and efficiency is the how readily that will translates into effects in relevant domains (‘check-cashing ratio.)

- The suppression regime enjoys significant advantages in its ability to marshal forces (‘check-writing ratio’), but disadvantages in small-scale innovation (‘check-cashing ratio.’) The converse is true for the illicit market.

Finally, we can use complex systems, economic models and networks as mechanisms by which suppression can alter demand. Demand functions are socially generated, not exogenously given. These networks rely both on their structures and the narratives that stabilize these structures. Both the economic demand for an illicit good and the normative demand for its suppression is self-reinforcing and path dependent. If the addiction model holds for social phenomena, then we would expect to find an endgame with a ‘path swap’ from the suppressed good to another basket of goods that take its place in social demand in successful cases.

- The endgame of a successful illicit market suppression attempt breaks a ‘vicious’ path dependency and replaces it with a ‘virtuous’ one.

Alternate Hypotheses. We found a number of alternate hypotheses that could possibly explain the variation in our data. Since we are dealing with a complex, open system, our model will incorporate the mechanisms of the norms, regimes and power models. If the ‘soft version’ of these models are supported by the data, then it supports our model. However, should the ‘hard version’ of any of them prove adequate to explain the data alone, then that alternate hypothesis should be preferred to our more complex multi-causal model.121 We must also consider the null hypothesis, and evaluate if suppression mechanisms do meaningful work at all.

121 This follows Ockham’s Razor – given equivalent explanatory power, fewer causes should be preferred to more.
**Null Hypothesis:** Unless the illicit market is specifically vulnerable, and unless there is adequate will and capacity on the part of all affected players, suppression is ineffective. Seeming successes are the result of exogenous processes.

**Regime Hypothesis:** Static regime design predicts success or failure by coordinating inter-state action against a common problem.

**Norms Hypothesis:** Transnational Activist Networks change norms surrounding an illicit market, thereby destroying demand for the good or practice.

**Power Hypothesis:** Illicit market suppression is a targeting problem – power applied to critical points results in successful outcomes.

In the following chapters, we will build a model from these building blocks, and weigh its utility in explaining progress in illicit market suppression attempts against these alternative hypotheses.
CHAPTER 3, THE ‘BOXER’ THEORY:
ILICIT MARKET SUPPRESSION THEORETICAL MODEL
DYNAMIC COMPETING REGIMES CAUSAL MODEL

CHAPTER INTRODUCTION.

Our model must account for three broad trends identified in the last chapter’s building blocks. First, the suppressor needs a comprehensive regime that incorporates adaptive functions and complex processes. Second, they must pursue mechanisms to inhibit these same processes within the illicit market. Finally, societal support for suppression is a key factor, as is the governance that supports it. Any theory of victory must lead to a demand-side solution. This means that our answer must find a way into the social and cultural spaces where demand is constituted. In order to do so, we start with regime theory, and build a model that accounts for the pathways between the suppression regime and the illicit market, and then transform it into a dynamic competitive model suitable for causal inference.

To put the bottom line up front: the relative efficiency of the suppression regime and the relative depth of support for the suppression campaign jointly predict success. If the suppression campaign can make use of efficient structures, and deny the same to the illicit market, then they can beat their opponent to the punch. Sustained over time, this allows the suppressor to overtake the market’s domain. However, the suppressor must keep their support strong long enough to so. If both of these conditions are met, it is likely that the suppression campaign can preside over changes in illicit demand by implicitly subsidizing substitute demand functions.

The two regimes fighting can be pictured as a boxing match. Both are trying to figure out where the other is moving – if they do, they can land blows until their adversary adapts and counters. Each side can recover from any non-knockout blow given enough time, but strings of effective blows add up and start slowing that side down. In almost all cases, the illicit market
starts out moving faster, but the suppressor can bring much more force to bear if they can stop its movement by locking down the form of the illicit market. A state can indefinitely escalate, if it has the political will, while a criminal is free to innovate but cannot prevail in a set-piece engagement.

This is strikingly similar to dynamics from asymmetric warfare – while an ambush can catch a unit unaware, that unit can call on an unending reservoir of reinforcements, which take time to arrive but alter the balance of power when they do. Therefore, the weaker party must be quick enough to prevail or escape before power can be brought to bear against them. If the suppressor gets quicker, they can close that window; if not, the illicit market can wear them down over time. Continuing the boxer analogy, this fight is most alike the 1974 ‘Rumble in the Jungle,’¹ where Mohammed Ali attempted to counter George Foreman’s weight and strength advantage by being quicker on his feet. This ‘rope-a-dope’ tactic left Foreman wasting energy by punching air while Ali continued to land blows. The suppressor’s best strategy is to maintain the strength advantage while working to overcome the speed disadvantage against the illicit market.

We will proceed by building two primary models that will turn this conjecture into a theory. The first of these, the complex competing regimes (CCR) model, accounts for all pathways by which the suppression regime and the illicit market can exert influence over the market domain. This model yields a ‘theory of victory’ – the suppressor must simultaneously engage 1) physical conditions in the market, 2) the social structure of the illicit market, and 3) the cultural forces that fuel demand. However, this ‘laundry list’ risks non-falsifiability and endogeneity. The second, the dynamic competing regimes (DCR) model, solves this problem by boiling those pathways down to two meta-variables – regime efficiency and regime support. By treating

physical, social and cultural space as an intertwined whole, we find that regimes are more likely to succeed if they 1) effectively make sense of their environment through efficient structures, and 2) maintain the social support that underwrites the campaign.

**Building the Complex Competing Regimes (CCR) Model.** As a foundation for model-building, we begin with a basic regime model. Regime theory adequately explains discrete and relatively static challenges such as landmine bans. In order to account for the iterative nature of thornier challenges, we’ll add a feedback loop. This results in a cyclic regime model, which can explain problems that require extended maintenance, such as endangered species protection. In order to explain problems where the illicit market’s strategic behavior complicates finding a solution, we add the illicit regime to the model along with all the pathways through which it impacts the market. Since both the illicit market and the suppression regime can directly impact each other outside of pure market competition – through interdictions, corruption and so on – we also include pathways for direct effects on each others’ regimes and demand functions. This is the CCR model, and its ‘theory of victory’ allows the suppressor to monopolize all of these pathways.

Constructivism argues that the social, physical and cultural worlds are co-constituted. We will use this ‘three-fold space’ insight to wrap all of the pathways in our theory of victory together, and identify common variables that allow the suppression regime to succeed across all of these pathways. By placing the CCR model in this ‘three-fold space,’ we abstract out of the endogeneity inherent in the nested CCR model and thereby create the DCR model. This model focuses on the relative efficiency of suppression regime structures, measured against a ‘market-like’ network ideal, and the effectiveness of the network in undergirding its own political support while eroding illicit demand. Since strategies for increasing effectiveness can erode the formal
power of organizational hierarchies, and strategies for undergirding support can threaten the autonomy of front-line operators, it is crucial to synchronize low-level linkers and high-level leaders. In Chapter 4, we will build a chronological model out of these elements, which we will use to test these hypotheses.

**REGIMES, STATIC CAUSAL MODELS, AND THE THEORY OF VICTORY.**

To create the causal model, we begin the ‘simple regime model,’ a static model from regime theory.

![Simple Regime Model](image)

**Simple Regime.** A simple regime structure provides a foundation for the model. Social demand for market suppression leads to a suppression regime, and that regime leads to changes in the market. This regime includes both supply-side interventions, such as actions against traffickers, and demand-side interventions, such as legal action against consumers or subsidies for alternate goods. By serving as a focal point for “principles, norms, rules and decision-making procedures around which actors converge,” the regime takes the inputs from political will and transforms it into coordinated policies that reshape the target market.

This model takes into account both suppression regime support and suppression regime efficiency as the two respective links in the chain. The former generates political motive force (link ‘1’), and the latter applies that force (link ‘2’). It predicts that a well-designed regime with adequate social support will result in market change. However, it is a static model for dealing

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with a linear problem – this prediction seems to hold with straightforward, non-adaptive threats such as a landmine regime. For the more resilient and adaptive illicit markets, we will have to include a theory of change and a theory of enemy agency.

- **Testable Mechanism (1):** Demand for suppression should catalyze construction of a suppression regime by way of political processes.
  - **Implication:** The way the suppression lobby achieves these political ends can shape the world of possible strategies.³

- **Testable Mechanism (2):** Implementation of suppression regimes should yield changes in market conditions through inducing cost and risk on the illicit market.

![Figure 2: Cyclic Regime Model](image)

**Iterated Regime.** An iterated regime structure introduces dynamic elements into the model. Suppression demand is the socially embedded⁴ political willingness to prosecute the campaign. It changes over time, as a function of both exogenous and endogenous factors. External ideational forces spread through norm entrepreneurs provide the exogenous inputs, and these

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³ For instance, Wayne Wheeler’s Anti-Saloon League ‘bone dry’ stance, which was helpful in building a legislative coalition proved less effective in implementation. The brewers, who had no love for the distillers, could not be enlisted in suppressing whiskey. Daniel Okrent, *Last Call: The Rise and Fall of Prohibition* (New York: Scribner, 2010).

change over time. The endogenous input into social demand is the perceived effectiveness of the suppression campaign – major victories and an impression of sustained progress will lengthen the time before ‘donor fatigue’ sets in. Conversely, major public failures will shorten that half-life.

The regime itself may play a role as an interpreter of success or failure. For instance, during Slave Trade suppression, Royal Navy Captain Denham delivered an impassioned argument to Parliament in the face of a major vote to potentially defund his West African Squadron.5 Much like General Petraeus’ arguments for the Iraqi surge, he defended a positive interpretation of the campaign and thereby gained the resources the fleet needed to succeed. However, in this process the suppressing regime reveals its institutional preferences. A regime of ‘true believers’ that internalizes suppression goals will tend to defend the regime objectives. If the suppressing organization is composed of professionals but not sold on the goals themselves, they will generally defend their organizational record and process efficacy instead.6

The iterated regime model then predicts that this cycle will continue until the exogenous norms change, a lack of perceived effectiveness erodes social demand, or the socio-political embeddedness of either of these factors is altered. This holds for dynamic problems with low levels of strategic agency, such as endangered species protection regimes. However, in order to understand actions against organized adversaries, strategic behavior needs to be incorporated into the model.

- **Testable Mechanism (3): Exogenous norms should partially determine suppression demand, by way of norm and policy entrepreneurship in the broader society.**

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5 Joseph Denham, *The African Squadron and Mr. Hutt’s Committee* (J. Mortimer, 1850). Capt. Denham was deeply embedded with the Abolitionist movement – his father was a prominent Abolitionist judge in the British Government.

6 Idea from a critique by Jessica Rodgers, US Dept of State.
Implication: This entrepreneurship cultivates coalitions based on how messages resonate within identities and interests, which in turn shapes the suppression lobby. The inconsistencies involved in this process yield inconsistent regimes.\(^7\)

- **Testable Mechanism (4):** Perceived suppression effectiveness should partially determine suppression demand, by way of public debate over policy priorities.

  Implication: Since the regime can be its own interpreter, measurement and evaluation must be engineered into a suppression regime from the outset. A regime ill-equipped for ‘statistics wars’ may find its support waning regardless of its actual impacts on the ground.

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**Competing Regimes.** The competing regimes model incorporates strategic behavior by mirroring the licit regime with an illicit regime. Both regimes are built on demand functions rooted in exogenous preferences and embedded into interest groups. Both regimes are seeking to shape the market, and both are in turn shaped by the perceived success of their efforts. In an inverse version of the relationship between perceived effectiveness and social demand, high

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\(^7\) For instance, the Volstead Act exempted hard cider on behalf of apple growers, who had become core constituents of the Prohibitionist coalition by way of religious mobilization. This may result in unexpected results during the implementation phase if the loopholes prove profitable avenues for illicit demand – such as ‘wet’ Napa vintners profiting under the same fruit juice exception. Okrent, *Last Call.*
levels of perceived effectiveness\textsuperscript{8} increase the opportunity cost of consuming the illicit good, which in turn changes the socially embedded demand. Conversely, an ineffective regime yields an unregulated grey market and encourages illicit demand.

This process of market change results in organizational change within illicit networks. The darker the market, the higher the premium on information.\textsuperscript{9} As the open market becomes more dangerous, transaction costs increase and therefore illicit firms should decrease in number but increase in size.\textsuperscript{10} Unfortunately, as the number of firms decreases and the surplus from the control of information increases, premium on violence to maintain brokerage increases as the firms that remain vie with the state and each other for control of the remaining social surplus.\textsuperscript{11}

\begin{footnotesize}
\footnote{\textsuperscript{8} This perception can be used for policy-crafting through the ‘Batman Effect.’ Particularly notable teams or capabilities can take on a life of their own. The narrative of Eliot Ness’ Untouchables had an effectiveness of its own even beyond their operational effectiveness. Similarly, in the British Campaign against the Slave Trade, the Baltimore Clipper H.M.Brig Black Joke gained such a reputation – by capturing 13 slaver vessels, it inspired fear in slaver intelligence networks, who would go to extreme lengths to avoid the vessel’s patrolling area. Siân Rees, \textit{Sweet Water and Bitter: The Ships That Stopped the Slave Trade} (UPNE, 2011). It is probable that this reaction was irrational in the aggregate. The effectiveness of this tactic is in triggering the defense mechanisms of the network, and using its intelligence structures against itself. It should therefore be more effective in darker markets, where the illicit network is highly reliant on limited intelligence.}


\end{footnotesize}
This model describes normal law enforcement social control against lower-tier long-term persistent threats, such as counterfeiting.  

- **Testable Mechanism (5):** Illicit demand, like suppression demand, should catalyze construction of an illicit regime.\(^\text{13}\)
  
  - **Implication:** As with suppression demand, provisioning of the illicit good is likely to occur in path-dependent idiosyncratic ways. In general, the strongest liminal group has the strongest incentive to fill this role – they have the least to lose from societal sanction, and can perform the task most efficiently.

- **Testable Mechanism (6):** The illicit regime should, in turn, create changes in market conditions by information exchange and risk reduction.

- **Testable Mechanism (7):** Exogenous preferences should, in part, create illicit demand. As suppression demand is created by norm entrepreneurship, illicit demand is created and sustained by practices iterated in community, such as ‘junkie culture.’\(^\text{14}\)

- **Testable Mechanism (8):** Perceived effectiveness of the suppression attempt complements exogenous preferences in shaping illicit demand. If would-be users perceive increased risk (especially demand-targeting measures), it will diminish ‘soft’ illicit demand. It may concentrate remaining ‘hard’ demand, however.

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\(^\text{12}\) This market change process continues until a stable equilibrium is reached, where the amount of long-term social support is sufficient to keep the market in a marginally suppressed state. Therefore, this should result in a feedback loop and a stable system.\(^\text{12}\) All else equal, if the level of suppression is too low, the illicit market will move out of the shadows and hence grow. This causes political pressure from the normative constituency to increase, increasing suppression and returning the market to the shadows. Conversely, if the level of suppression is too high, the regime will not return the expected results, and the lack of perceived effectiveness will reduce social demand for suppression and thereby undermine the regime. This model fits well with Becker’s theory of the socially optimal level of crime control, as there are decreasing returns to scale on suppression. Gary S. Becker, “Crime and Punishment: An Economic Approach,” in *Essays in the Economics of Crime and Punishment* (UMI, 1974), 1–54, http://www.nber.org/chapters/c3625.pdf. The basic idea of a feedback loop is central to both Complex Adaptive Systems and Cybernetics – the difference between the two is whether the approach is reductionist or emergent in its approach to chaos.

\(^\text{13}\) Regime defined broadly to include market structures as well as formal structures.

Implication: As with suppression demand, the illicit regime serves as interpreter of the success or failure of the suppression attempt. The ways in which these perceptions are formed and shared can be used to amplify the effects of intervention. In effect, the suppressor can turn the illicit network’s countermeasures against it, in the same way the Spanish Flu turns the immune system against the body in a ‘Cytokine Storm.’

Figure 4: Complex Competing Regimes (CCR) Model

Complex Competing Regimes (CCR) Model. The CCR model recognizes that in the largest and most ambitious campaigns, both sides do not confine their contestation only to the marketplace. Both the suppressing regime and the illicit regime can attempt to disrupt their opposing number’s regime and demand function. The suppressing regime attacks the illicit network through interdiction – if the regime has adequate intelligence, they can identify and target key elements that connect and facilitate the illicit market. This is beyond end-user enforcement and deterrence patrols, which are conducted primarily in physical space. Interdiction occurs in social space, and is less concerned with seizing contraband and more concerned with disrupting the structure that creates it. By doing so, interdiction raises the price of the good (which makes demand restructuring easier) and slows down adaptation (which may also increase perceived effectiveness.)
The illicit regime attempts to return the favor by disrupting the regime’s network through corruption and violence. By removing key elements of the interdiction regime, the illicit market creates holes through which it can circumvent the regime, and gains early warning on regime actions. This creates the opposite effect of illicit regime interdiction – the illicit regime gains speed against its opposing number and reduces its coordination costs.

Both sides can directly engage each other’s demand function as well. The suppression regime can engage in norm entrepreneurship, where they attempt to directly shift demand preferences. This can happen through moral appeals or subsidizing alternatives. The end game of a successful suppression campaign requires swapping path dependencies away from the vicious cycle fueling the demand to a virtuous circle that meets the same fundamental needs differently. These meta-stable changes in market structure define ‘victory’ or ‘winning’ in these campaigns.

The same cycle can work in reverse, however. The illicit network can co-opt elements of the embedded suppression demand by muddying the norm or disrupting the supporting coalition. If it does so effectively for long enough, the campaign may collapse. For instance, the failure mode of the Prohibition campaign occurred by way of moral crusaders arguing that the campaign promoted lawlessness.

This raises a key point: suppressors that can convert the positive results from improvements in regime efficiency into sustained support are more likely to succeed. One can win on the

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15 The mechanism of social embeddedness within demand presents vulnerabilities that can be exploited: restructuring the social structures in which the preferences are embedded can cut the link between preferences and illicit demand. For instance, drug treatment programs attempt to disembed the exogenous desire for chemical stimulation from potential junkie constituencies, and restructuring New World economies around the principle of free labor helped break the link between slavery and the demand for workers. By dis-embedding the constituency for the exogenous preference fueling the market, the would-be preference lands on deaf ears and the market dries up.

16 Okrent, Last Call.
ground but lose at telling the story at home. The regime can be successful but be perceived as a failure; due to increased levels of contestation (and often violence) associated with successful regime practices, without effective interpretation productive interventions may appear unsuccessful. Therefore, the regime must serve as its own interpreter to its support structure in order to maintain that support.

The illicit market must find ways to shore up its support, but their core problem is security rather than support. Therefore, sanctuary matters tremendously in this model. If there are areas where the illicit regime is invulnerable, the structure will migrate vulnerable functions toward those areas and then operate with impunity from them. Additionally, if customers can also access the sanctuary, the illicit market can establish secure ‘focal points’ and thereby benefit from open market functionality. The sanctuary can potentially be isolated from the market and hence neutralized, but this typically takes far more effort than directly contesting it. If an adversary holds sanctuary, then their regime and demand function will at least in part be immune from reciprocity. Therefore, if these sanctuaries are uncontested, the suppression network will be at a persistent disadvantage. More forcefully, if the regime fails to counter illicit sanctuary, it will fail overall.

**Testable Mechanism (9a):** Suppression demand can directly influence illicit demand by reducing or supplanting consumer desire through moral suasion.

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17 The Tet offensive is a key example of this pattern – the Viet Cong arguably exhausted the remainder of their clandestine network in the course of the attacks, but it was interpreted as a failure rather than victory. James H. Willbanks, *The Tet Offensive: A Concise History* (Columbia University Press, 2013). Pp. xv-xvii.

18 These ‘focal points’ are common cultural coordinating conventions – the classic Schelling example is that two people attempting to meet in New York City will meet at Grand Central Station at noon. Thomas C. Schelling, *The Strategy of Conflict* (Harvard University Press, 1981).

19 Illicit sanctuary can be internal, (through corruption), external, (through areas uncovered by the regime), or in-between (along internal borders and boundaries where the regime cannot effectively coordinate.) The illicit market will seek out sanctuary, or create it if necessary through corruption and violence. The regime can counter these moves by reinforcing governance to remove internal sanctuary, improving coordination or blocking ties to de-link external sanctuary.
• **Implication:** Since this pathway works through the larger culture, there must be some connectivity between the suppressors and the target market. Therefore, in highly fractionalized or polarized societies, this pathway should work less effectively.

• **Example:** Moral suasion was generally ineffective in the American abolitionist movement in changing the mind of actual slave-owners, but was quite effective when Stowe’s ‘Uncle Tom’s Cabin’ resonated with the broader culture.\(^{20}\)

• **Testable Mechanism (9b):** Illicit demand can directly influence suppression demand by changing normative goals through co-optation.

  • **Example:** The ‘wet’ (anti-Prohibition) Women’s Organization for National Prohibition Reform (WONPR) dealt a devastating blow to the ‘dry’ (pro-Prohibition) forces. Arguing that the primary threat to the family was lawlessness, not liquor, it turned the pro-family argument back on the female demographic crucial to the ‘dry’ coalition.\(^{21}\)

• **Testable Mechanism (10a):** Suppression regimes can directly influence illicit regimes by attacking their social structures through interdiction.

  • **Implication:** This pathway relies on ‘competitive sensemaking’ between the two regimes, as you need to know what to hit in order for interdiction to work.

  • **Example:** In 1840, the British anti-slavery patrol improved its effectiveness when it began to target slave fortresses ashore – and the difficult-to-replace cross-cultural brokers housed therein - rather than solely chasing ships or running blockades.\(^{22}\)

• **Testable Mechanism (10b):** Suppression regimes can directly influence illicit regimes by neutralizing key nodes or pirating links through corruption.

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\(^{21}\) Okrent, Last Call.

Example: Corruption is a ubiquitous feature of counter-narcotics campaigns, especially in areas of contested governance.\textsuperscript{23}

To its credit, the CCR Model effectively describes all possible pathways through which the suppression regime and illicit market can affect each other. Unfortunately, while we have exhaustively catalogued avenues of influence, we now have an endogenous mess. Next, we will take advantage of the comprehensive nature of this model to describe a ‘theory of victory,’ where a suppressor can activate these pathways to disrupt the illicit market and ultimately alter the demand function.

other for weakness. If the suppressor can hold all three loops – physical, social and cultural – they can permanently alter the market conditions. This endgame relies on a theory of stepwise change: if in equilibrating system exceeds maximum tolerances, it resets to a different system with a new equilibrium. If the demand function can be pushed hard enough, new path dependencies can replace those of the illicit market.

Prior to the suppression campaign, norms drive creation of a regime to engage the target market. For the sake of convention, I call this ‘phase zero,’ as it is more of an initial condition than a suppression action. In the first phase, the regime gains control over market focal points, thereby denying the illicit market open sanctuary. This causes the illicit market to reboot into a more defensible form that can operate (at lower efficiency) from the shadows using social firewalls and coordinating structures. Second, the fight moves from patrolling focal points to interdicting illicit networks and hacking these firewalls, which ideally drives the price high enough to buy room to engage demand structures. Third and finally, the suppression regime’s endgame is to disembed the exogenous preference by reshaping demand constituencies. Meanwhile, the illicit regime attempts to counter all of these moves while eroding the suppression regime itself – the suppression regime must work to hold any ground it takes.

Concluding our static model, we review the pathways in this causal ‘theory of victory’ by mapping them onto strategic focal points. A policy maker will improve their chances of success by gaining and maintaining control of these foci.

24 For instance, a person riding a bicycle is an equilibrium-seeking system. However, if that person-bike system exceeds certain tolerances, such as maximum deceleration rate due to impacting a curb, the system may undergo stepwise change, such as falling onto the ground. Since ‘broke on the ground’ is an equilibrium, this change holds until pushed out of tolerances. The same can hold with demand functions – the hope of victory is the hope for a stepwise change, where the system is reset to a new equilibrium that no longer requires the same degree of suppression. Morton A. Kaplan, System and Process in International Politics (ECPR Press, 2005).
• **Marketplace Focus (physical space):** Control over the physical and virtual market domains used by the illicit market will allow the suppressor to inject enough risk into these spaces to make them unusable. This is done through ‘patrolling’ strategies.

  o **Counter-Strategy:** The illicit network will seek out new sanctuary when its original sanctuary is denied. This may be outside, in spaces uncovered by the regime, inside, in weak spots within the regime structure, or in-between, by jumping between regional boundaries. Typically, this ‘displacement’\(^{25}\) is a costly countermeasure that cuts into the illicit market’s profits.

• **Regime Focus (Social Space):** Intelligence superiority allows the suppressor to inject risk into illicit networks’ coordination mechanisms. This increases the cost of moving information through the illicit network, which eats into profits and reduces firm size, which then renders them vulnerable to ‘patrols.’ This is done through ‘interdiction’ strategies.

  o **Counter-Strategy:** The illicit network will innovate new security mechanisms and rely on difficult to hack social trust networks such as kinship ties. The illicit network will abandon unacceptably risky communications means, but as with ‘displacement,’ this is a costly countermeasure.

• **Demand Focus (Cultural Space):** By keeping prices high, the suppression regime implicitly subsidizes alternatives to the illicit good or practice. However, this process is costly and lengthy. To maximize its chances of meaningful changes, the suppressor should partner with development efforts for a ‘seed and weed’ approach - identifying, protecting and fostering useful alternate path dependencies, while continually suppressing the benefits of the illicit path dependency.

Counter-Strategy: *The illicit market’s counter-strategy here is one of endurance. It takes time and sustained effort to swap between stable market equilibriums. If the illicit market can hold out and erode public will, then it is likely to survive the suppression attempt.*

While we’ve fully specified the ways in which these two regimes can affect each other, this model must be transformed in order to avoid non-falsifiability. Since it is a general model, it is difficult to determine which one of these pathways will work best in a given situation; since the answer to this question depends on a highly contextualized contested sense-making process, it may well be impossible. ‘Wicked problems’ do not reduce well to generalizable, context-independent specifications.26 Meta-strategies are more useful than strategies in these situations27 – one may not be able to identify the right answer, but one can identify the structures most likely to yield that answer in time.

The right answer is ‘all of the above’ – in other words, try everything, see what works, and do more of whatever that is, and keep trying everything. The problem is that we cannot offer up testable propositions from ‘do more of what works.’ In order to wrestle with this parallel causality, we need an additional analytical tool: physical, social and cultural ‘three-fold space.’ This will allow us unknot our causal loops and propose falsifiable implications, which we can then later test.28

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27 Following Lakatos, falsifiability is not a trump, but it does provide us a way of weighing the value of a model – if the model cannot produce novel facts which can be verified, then it is of questionable use in adding to our understanding of the world. The theory itself is not directly falsifiable, but we must build something of a bodyguard of hypotheses which can stand or fall and thereby testify to the merits of the theory. This is especially true with a
THREE-FOLD SPACE, THE DYNAMIC CAUSAL MODEL AND THE REGIME DOGFIGHT.

Since it is deeply challenging to directly assess an illicit market, but we must nonetheless find ways to measure success and failure within campaigns, we must tame this variable. Physical contestation over strategic commonplaces occurs alongside clashing regimes and interfering demand functions. These relationships are irreducibly complex, and therefore impossible to present in a linear form. However, in black-boxing their interrelationships and the emergent patterns that result, the dueling systems can be contained within an analytical holding structure. Therefore, we introduce a concept that will transform our model and thereby solve this problem.

Three-Fold Space. ‘Three-fold space’ is a synoptic approach that achieves this end by using simultaneous physical, social and cultural lenses. This approach pictures the relevant domain as simultaneously composed of physical nodes, social ties, and cultural fields. Each of these layers are intertwined\(^2\) – the ties between physical nodes create social space, which in turn shapes the actions and future ties of physical space. Similarly, these social structures create cultural field effects, which in turn shape the mechanics of physical node and social tie formation. Since these

three layers are bound up in each other, the ‘three-fold space’ approach treats them as an irreducible whole.  

Nodes of physical capabilities are configured in specific patterns, which result in social network structures. These structures can be more or less efficient in moving information or providing security. In turn, these social networks carve out a space of shared meanings (a ‘field space’), which in turn supports or impedes the acquisition of new recruits or physical resources (‘nodes.’) The physical-social tier can be understood as the supply function, the physical-cultural tier can be understood as the demand function, and the social-cultural linkage can be understood as determining elasticities. While the specific configuration of these structures cannot be predicted, the efficiency of these linkages is a function of the governing regime and hence can be used to predict overall success and failure.

Within this space, both sides attempt to maneuver for advantage on all three levels simultaneously. Since every move within the space by either player changes the space, both sides must continually respond to changes in the space induced by both their adversary’s moves and their own. While the systemic effects run in parallel in the space, the measure-countermeasure sequence is generally iterative. Therein lies the advantage of this move – by transforming the space in this way, we can unravel the concurrent loops required by our ‘theory of victory’ into a linear, albeit abstract, model. This allows us to subject our theory to possible

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30 If these three layers and their complex inter-relationships can be wrapped up together as one shared space, we must then understand the defining variables of that space. Physical assets can be more or less densely structured, contingent upon the relationships with the social layer; they can be brought into existence or extinguished at different costs, contingent upon the depth of the cultural layer in a given area. Social ties, similarly, can be more or less dense contingent on the relationship with the physical layer; they can be created or destroyed at different costs contingent on the cultural layer’s influences. Culture can itself have depth, depending on the density of physical constructs in the space. It, too, is generated or disrupted at costs contingent on the density of adjacent social structures.
falsification; by testing our moorings in that way, we ensure surer footing for our policy
frameworks.

This first lens, physical space, consists of the illicit commodity itself as it moves from
producer to consumer (along with any seizures or interruptions to that flow.) This is typically
the most data-rich layer, but may often be the most endogenous layer as well. For instance,
captures are often used as a performance metrics, but low levels of captures may be due to either
effective deterrence or ineffective prosecutions.

The second synoptic lens, social space, examines the structure of the illicit market. This
includes the network of producers, consumers, transporters and facilitators that constitute the
market, along with the counter-network of actors in the suppression campaign. The social layer
can be less endogenous than the physical layer, but accurately assessing it requires a strong
intelligence network. For instance, the Coast Guard received intelligence on ship clearances
from British ports through the diplomatic consul – they could see the deep logistics web of the
rum trade and therefore could assess their impact more accurately than through captures.\textsuperscript{31} The bulk of our analytic effort is spent on this layer, as it provides a compromise between data specificity and endogeneity.

The final synoptic lens, cultural space, looks to deep structures and meanings. Borrowing from constructivism, a market exists within shared webs of meanings and values. These cultural constructs and social facts constitute the demand signal for a good; they constitute both supply and demand for the commodity, and they create freedom of maneuver for the social structures of both the illicit market and the suppressing network.\textsuperscript{32} This layer is abstract, and lends itself to interpretivist tools. These three layers contain the three causal loops described in our theory of victory.\textsuperscript{33}


\textsuperscript{32} For instance, the low cultural valuation of women in Nepal is a key determinant in human trafficking supply (Personal Interviews with anti-trafficking workers, 2011-2013), corruption provides freedom of action to drug traffickers in Mexico, and cultural support sustained the historical abolitionist movement through continued funding to British patrols.

\textsuperscript{33} One advantage of the ‘three-fold space’ is that we can explore the interaction between these layers. Therefore, we find these interactions lead to more complex avenues of struggle between the two regimes: competition in innovation occurs in physical-social space, contestation over the construction of meanings happens in social-cultural space, and regimes regenerate in physical-cultural space. Fortunately, the three-fold space ties all of these together as a function of the relative depth and breadth of the regimes.

The social layer and the physical layer are linked through market supply – a more efficient social structure will change the determinants of supply and hence quantity produced. Deterrence also links these tiers – the theory of the firm predicts that internal organization will increase when the cost of doing business on the open market increases. Therefore, effective patrols of market commonplaces (‘focal points’) increase the open market cost and lead to more internal organization. (Schelling, \textit{The Strategy of Conflict}. ) This in turn leads to a strategy choice for the suppression regime: ‘patrol’ (increase open market cost through occupying focal points) vs. ‘interdict’ (increase internal cost by targeting organizational centers of gravity.)

The social layer and the cultural layer are linked through the social framing of cultural meanings (‘embeddedness’) and the related process of consumption-related dependency (‘myopic addiction’).\textsuperscript{33} Addiction is a form of path dependency, where increasing returns over time for a choice locks in a set path; I posit that this is as true for a society as it is for an individual. Market suppression policies are then prerequisites for ‘digging out’ an entrenched market – market disruption removes the path dependent gains, creating conditions where the culture can swap toward a more socially beneficial path (a ‘critical juncture’).\textsuperscript{33} (Michael J. Farrell, “Irreversible Demand Functions,” \textit{Econometrica} (1952): 171–186. Paul Pierson, “Increasing Returns, Path Dependence, and the Study of Politics,” \textit{American Political Science Review} (2000): 251–267; Andrew Bennett and Colin Elman, “Complex Causal Relations and Case Study Methods: The Example of Path Dependence,” \textit{Political Analysis} 14, no. 3 (2006): 250–267; Ruth Berins Collier and David Collier, \textit{Shaping the Political Arena} (Princeton University Press Princeton, 1991).) This is similar to interplay between security provision (through network disruption) and governance building
As a demonstration of the utility of this three-lens move, the Atlantic slave trade provides a stark example of the interplay between physical, social and cultural dynamics during a suppression attempt. The Royal Navy intercepted approximately 160,000 captives during their patrols. However, LeVeen uses elasticity estimates to demonstrate that suppression forced dramatic cost increases on the trade, which resulted in approximately 850,000 would-be captives never entering the trade. Finally, the increased price aided abolitionist movements and incentivized economic restructuring, which according to historian Seymour Drescher ended the trade. Any one lens would run afoul of either endogeneity or excessive abstraction.

These three layers interact in a way that is analytically useful - where one layer may be endogenous, another might be a better truth source. For instance, during the British suppression of the Atlantic slave trade, re-capturing and freeing captives from slave ships was a primary measure of the success of the campaign. Unfortunately, captures measure both the number of attempts and the percentage of those that were caught. Since the illicit market avoids areas of high suppression effectiveness, this is endogenous. If the level of captures was decreasing, it (restructuring norms and expectations) in COIN. (David Kilcullen, Counterinsurgency (Oxford University Press, USA, 2010).)

Finally, the cultural layer is linked to the physical layer through the demand function. Demand is determined by the cultural positioning of the desire for a given good. Since consumption levels of many illicit goods are not very price-sensitive (low price elasticity of demand,) demand has more leverage than supply on the amount of contraband goods in the system. However, since state power is more adept at engaging supply functions, effective demand-alone interventions are rare. Still, supply-alone interventions lack an endgame. Therefore, the optimal three-fold space strategy is to 1) hold the physical ‘focal points,’ thereby forcing the illicit market to organize; then, 2) exploit the internal social logics of the illicit market and thereby drive the price up; finally, 3) use the high price as a subsidy for an demand-side path dependency swap to a benign good or structure. Gary S. Becker, Kevin M. Murphy, and Michael Grossman, The Economic Theory of Illegal Goods: The Case of Drugs (National Bureau of Economic Research, 2004), http://www.nber.org/papers/w10976.

37 Denham, The African Squadron and Mr. Hutt’s Committee; Thomas F. Buxton, The African Slave Trade and Its Remedy (RareBooksClub.com, 2012); Lloyd, The Navy and the Slave Trade;
could be due to effective deterrence of the slaving enterprise, or it could be due to a decrease in the effectiveness of the patrols. Since the denominator of ‘total number of attempts’ is unknown, this metric cannot differentiate between and effective or an ineffective regime, and was therefore of little use. Similarly, the Coast Guard found captures similarly problematic, but they had the benefit of a very strong intelligence network. Since both the attrition and the regeneration of the rum fleet registered strongly in the deeper tiers of the social network, these assessments gave an accurate measure of the health of the maritime rum enterprise. Where the physical tier was endogenous, the social tier provided an effective instrument.

All three layers are intertwined by way of two variables – the configuration of the local structure, and the reservoir of resources available to alter that structure. Applying the lens to the question at hand, ‘regime efficiency’ describes better or worse local structural configurations, and ‘regime support’ describes higher or lower opportunity costs for building that structure or repairing damage. Since the theory of victory exists in all three of these spaces, we can now use the ‘three-fold space’ to transform the complex competing regimes model.

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38 Ensign, Intelligence in the Rum War at Sea, 1920-1933.
Dynamic Competing Regimes Model. The ‘three-fold space’ transformation allows us to consider dynamic interactions between the causal loops of the complex competing regimes (CCR) model. The demand loop happens in cultural space, the regime loop in social space, and the transaction loop in physical space. While all three are intertwined, the meta-variables of efficiency and support jointly anticipate success or failure in the three-fold market domain.

By placing the two competing regimes into ‘three-fold space,’ we see two feedback loops fighting to overtake the shared space while undoing their adversary’s attempts to do so. The efficiency of the regime determines how quickly each side can iterate through this process (the ‘frame rate,’) and hence how quickly it can adapt its form to counter the form of its adversary. Therefore, the relative efficiency of the regime should strongly predict progress so long as the suppression regime support remains robust. Adaptive speed plus adequate time equals success. This is a theory of meta-structures – the side that has ‘practices about practices’ that allows it to learn and position resources quickly will yield better structures at any given point in time.
The ‘boxer’ model argues that the two regimes are locked in cycles of competitive sense-making and conflictual action. As with two boxers fighting, it is impossible to predict \textit{a priori} the best selection of jabs and blows, and equally difficult to anticipate the sequence of an adversary’s moves. Since any operational model has a half-life, and the selection of these models involves a great deal of context-specific improvisation, any reductionist model which scripts steps or provides objective probabilities is suspect. Rather, if we can assess how quick the boxers are on their feet, or how well built they are, then we can make some reasonable guesses about the outcome of the match. These meta-variables look at composition rather than action. They thereby provide a policy-applications for this model; rather than describing what one should do, they describe one should structure oneself.

A boxer builds speed, endurance, and a repertoire of moves in training; in the fight, he may not know the order in which these will be applied, but the more resources he has to draw from, the better he will do. Similarly, the ‘Admiralty’ should concern themselves with building endurance, speed and a repertoire of tactics; their tactical operators will draw from these reservoirs in their front-line improvisation. Regime efficiency provides speed – a well-built regime efficiently innovates and spreads best practices. Regime support provides endurance – so long as political will remains, the suppressors stay in the fight.

\textbf{Regime Efficiency.} The first key variable here is efficiency, which accelerates movement through these adaptive cycles by reducing the friction between ideation and action. Efficiency describes the regime’s relationship with the market space and itself.
A well-built regime will be able to harness complexity through adaptive systems. Since efficiency is subjective, we’ll operationalize this variable using our idea of ‘market-like structures.’ The vitality and adaptability of the illicit market is derived from these structures, and an effective suppressor will evolve these structures over time. As described in the last chapter, we will use ‘scale-free’ and ‘small-world’ networks as ideal types of ‘market-like structures.’ While over-clustered (‘too cloistered’) networks and under-clustered (‘too cosmopolitan’) both deviate from this ideal, the suppression regime is almost always derived from a hub-and-spoke hierarchical bureaucracy, and will therefore err on the over-clustered side of things. As the suppression attempt continues, in order to meet the illicit network on its own terms, the suppression regime should add lateral peer-to-peer ties to its initial vertical hierarchical ties.

- **Boxer Hypothesis 1 (Regime Efficiency): Suppression regimes that are able to convert support into efficiency by building ‘market-like structures’ are more likely to succeed.**

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The most common failure mode of suppression attempts is the inability to convert a social movement into a set of coherent regimes capable of countering the target market. A stalled regime sacrifices the initiative, and therefore the clock, to the illicit market. If the regime can synchronize incentives and information amongst its members, it can begin to meet the illicit market on its own terms.

‘Information friction’\(^{40}\) is an essential performance metric for these market-like structures. Information friction is the opportunity cost of moving a piece of information from one point to another.\(^{41}\) Information is costly to move through black markets and bureaucracies due to high amounts of risk and parochialism (respectively), and therefore they have high levels of information friction. Conversely, an open market or an efficient data fusion environment has low information friction – information is cheap and plentiful and can move between players without difficulty.

Technology can be a complement to market-like structures, and a key to the suppression regime overcoming the inherent informational advantages of the illicit market.\(^{42}\) Economists have portrayed markets as a huge social computer,\(^{43}\) which uses a common ontology of prices to elegantly represent diverse inputs in a simple decision-making format. In effect, prices are a


\(^{41}\) Security measures work by imposing differential information friction – for a party with access, a firewall imposes a small degree of friction; for one without access, much more. It takes more time to open a locked door with a key than to open a door without a lock, but it takes far more time to open a locked door without a key. As with TSA, these security measures can potentially be sub-optimal in the aggregate.

\(^{42}\) It can also be an impediment, depending on how it is used and the risks from dependency on fragile networks.

summary of a huge conversation between many producers and consumers in myriad places. It stands to reason that such a conversation could be curated using technical means within the suppression regime.\(^ {44}\)

Properly understood, technology amplifies and accelerates human relationships. It relaxes constraints of time and space on human interaction, and thereby lowers information friction if used correctly. The illicit market typically begins the campaign with an open or grey market structure, which has low information friction. The suppression regime, conversely, typically begins with poorly patched together coalition of disparate interests and institutions – in order to prevail, the suppression regime must lower its information friction and increase that of its adversary. Technology can be used to construct a space where incentives transform competition from toxic to mutually beneficial, and information freely moves and is easily synthesized.

These communications technologies and market-like structures together create a space of low information friction, or a ‘\textit{synthetic market}.’ To appropriate a phrase from General Stanley McChrystal,\(^ {45}\) ‘\textit{it takes a market to defeat a market.}’ The synthetic market replicates the data sharing, information aggregation, and convergent incentives of a market. Market-like structures create institutional spaces for local conversations, while technology lowers the cost of the ‘weak ties’\(^ {46}\) between conversations. Those institutionally facilitated conversations create the requisite dynamism and innovation – as described in Chapter 2, this is the ‘shaker’ of a complex adaptive strategy. The technologically facilitated ‘weak ties’ build a social selection mechanism whereby good ideas go viral – this is the ‘sifter’ of the complex adaptive strategy. A complex adaptive

\(^{44}\) This is \textit{contra} the central planning approach, which is by its very nature reductionistic and seeks to optimize a space beyond what is possible through free association. Conversations are emergent, not reductionist, and rely on low-level lay innovation rather than the elites’ ability to predict the future. Technology can enable conversations.


\(^{46}\) Granovetter, “The Strength of Weak Ties.”
strategy can be front-loaded with a ‘bucket’ of lessons learned; toward building that ‘bucket,’
Chapter 5 catalogues historical attempts at building these conversations and weak ties.

- **Policy Implication (1):** ‘Information Friction’ describes regime efficiency in practice.

  This is a function of 1) data connectivity, 2) information synthesis and 3) adoption
  incentives. *Market-like structures provide an institutional strategy to reduce information
  friction; Networked communications provide a complementary technological strategy to
  reduce information friction.*

  As a caveat, this model does not assert that ‘market-like structures’ are objectively superior
  organizational forms. These forms are subjectively more useful against market-type or flat-
  network adversaries, as they excel at innovation and low-level adaptation to complex contexts.
  However, they do not have the same economies of scale as industrial mass-production forms.
  Nor do they have the predictability of hierarchical forms. Therefore, if one is attempting to
  control nuclear weapons or conduct mechanized warfare, ‘market-like structures’ are not ideal
  forms. However, these structures are quite useful against diffuse low-level threats, where low-
  level sensemaking is the core challenge.

  In practice, these lateral ties often come about through low-level linkers whose social
  positional power exceeds their formal positional power. These players often lead ‘holding
  category’ type units, where they are given much latitude to think unconventionally, along with
  enough formal authority to hold their own in bureaucratic turf wars. General McChrystal served
  as one of these players in a counter-terrorism context, using elements of U.S. Special Operations
  Command to create a vast liaison officer network. During the Prohibition case, Coast Guard

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47 For a full explanation of holding categories as institutional placeholders for practical knowledge, see Chapter 2.
Captain Charles Root built the Coast Guard Intelligence Office along similar lines by informally linking interagency and international players with peer-to-peer lateral links.

As we will explore later, the cultural imperatives for these forms are different than for traditional hierarchies. Leaders are no longer synthesizers who hold ‘the big picture,’ but rather curators who manage the percolation of situational awareness up from the front lines. Personnel systems no longer look for skills, and assume that an assemblage of those skills will coalesce into relationships; rather they look for networks of relationships, and train whatever skills are needed to participate in community tasks. Senior leaders need to foster lateral low-level linkages rather than perceive them as threats to centralized power. Most importantly, failure is a by-product of innovation, and the organization needs to distinguish between failures due to incompetence and those due to experimentation; the former should be punished but the latter encouraged.

**Regime Support.** The second key variable is regime support, which is the social demand for suppression realized through political will and institutions. Support represents the interaction between the regime and the political world.
Large-scale suppression campaigns are typically preceded by protracted political mobilization campaigns; once the political campaign becomes policy, the campaign’s backers generally begin to spend that accumulated political and social capital in enacting the campaign. Strong social support underwrites the suppression campaign, providing the resources and latitude for the players in that campaign to act. Where regime efficiency looks at the speed of adaptation of suppressor institutions, regime support describes the durability of the same institutions. A regime with strong support can afford temporary inefficiencies while it learns and adapts its structure.

Strong support can also allow the suppressor to ‘surge’ forces. While daily business might make do on path dependency alone, major redeployments or recapitalizations may require extra-institutional interventions. In these cases, support serves as a *deus ex machina* to radically alter the game board. In the slave trade case, Foreign Minister Lord Palmerston broke through a Brazilian logjam by sending a squadron from the Royal Navy’s Atlantic Fleet to Rio de Janeiro harbor. In the Rum War, the Coast Guard smashed a stalemate in Florida by blockading Bimini with destroyers. These controversial and politically costly actions are best used as a last resort, as they burn support much faster than normal operations.

This is a more abstract idea than efficiency, but is fortunately easier to operationalize. Since the most directly relevant of regime support is willingness to appropriate resources to the suppression attempt, by examining the political debates surrounding these votes we can determine the degree of political will and hence regime support. Specifically, vote counts in legislatures provide a strong indicator when benchmarked within a case against initial votes to begin the suppression campaign. Additionally, special commissions are part and parcel of these
debates, especially if the effort is perceived as stalled – in the British case, an 1849 committee\textsuperscript{48} served as a referendum on the suppression effort; in the Prohibition case, the 1929 Wickersham Commission served the same purpose. Interpreting these commissions’ findings in the context of public discussions and appropriations bills provides an excellent window on support at these critical junctures.

Since suppression attempts begin with a reservoir of political will, but tend to expend this will faster than it can be re-generated, the strategy for the suppressor is to spend these resources dearly and hold out as long as possible. While the levers that control regime efficiency largely rest with the ‘Admiralty,’ (law enforcement leaders) this initial reservoir of regime support resides with the ‘Prime Minister’ (political leaders) and the polity at large. For the model, we treat this initial push as a constant within each case, and bracket the mobilization effort that precedes the campaign.

However, the ‘Admiralty’ does have two levers of significance – the rate at which these resources are expended, and the perception of success or failure of continuing efforts. The first lever is the simple axiom of economy of force. The second lever requires both indicators of success and effective interpretation of those indicators. As we saw in the ‘statistics wars’ identified Chapter 2, the campaign’s narrative may hinge turn on the framing of numbers as well as the power of norms. While it is crucially important to actually succeed, it is rare that success is self-interpreting. With too little data amidst too many competing interests, suppression regime leaders are often called to testify on behalf of their work. If they win the ‘statistics wars,’ they can buy more resources and hence more time to succeed. If they fail, they lose both time and resources.

\textsuperscript{48} Rees, \textit{Sweet Water and Bitter}; Denham, \textit{The African Squadron and Mr. Hutt’s Committee}.
In practice, while low-level linkers were key to regime efficiency, high-level leaders are key to these ‘statistics wars’ and hence regime support. Low-level linkers have great power inside institutions, but are not immediately recognized as powerful outside of them as they typically have less rank than equivalent formal leaders. High-level leaders hold this formal power, and therefore serve as better representatives of the institution to the outside world. General Petraeus’ 2007 congressional testimony serves as an excellent example of a high-level leader arguing to put more time on the clock. In the British case, Captain Denham, commander of the Royal Navy’s West Africa Squadron, conducted a valiant rhetorical defense of the squadron in 1849 and had some role in Parliament’s decision to continue the campaign. During Prohibition, the Coast Guard Commandant constantly defended his service’s actions in the press and pressed Congress for more resources.

- ‘Boxer’ Hypothesis 2 (Regime Support): Regimes that are able to keep support strong by showing progress will buy more time for efficiency reforms to work, and therefore are more likely to succeed in suppression attempts.

Information friction served as a metric for regime efficiency, as it was a measure of coordinating costs within the market domain. Similarly, normative friction can serve as a metric for regime support, as it measures entropy in the political domain, where the will for suppression resides. Connectivity is the first determinant of normative friction, as groups need to be talking to each other in order for norm-based organizing to work. In a divisive political climate, it is difficult to build broad-based coalitions. Similarly, if would-be members of the coalition are split on orthogonal issues, norms will not echo as loudly between these groups. Framing is the second determinant – just as compatible ontologies were a prerequisite for information sharing, norms migrate better across compatible metaphysical frames.
Finally, since norms are being constantly re-interpreted in changing contexts, they can either hold course or drift from their original intent. This is the third determinant: norm coherence. Normative drift led to the decline of the Women’s Christian Temperance Union (WCTU) in the Prohibition case – by taking on a whole slew of logically linked but ultimately distracting causes, the WCTU lost coherence and with it relevance.\(^{49}\) Conversely, the later Anti-Saloon League was single-minded in its focus and proved more successful in shaping political structures to its liking.\(^{50}\) During the British case, abolitionists consistently refused pressures to link their movement to general labor reforms for British workers; regardless of its moral valence, this move preserved their powerful position as the swing votes in Parliament.\(^{51}\) This clarity, however, came at a cost; after the destruction of the Atlantic slave trade, the “Coolie trade” replaced many of these labor flows with workers from Asia in a model akin to modern human trafficking.\(^{52}\) The abolitionist norm evolved toward anti-sex-trafficking narratives in the form of a campaign against “white slavery.”\(^{53}\) It was unable to effectively engage this labor trafficking for a time, as it was framed as a workers-rights rather than a slavery issue.\(^{54}\)

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49 Okrent, *Last Call.*
50 Ibid.
Extant research captures these norm-led mobilization dynamics quite well. Keck and
Sikkink’s work on Transnational Activist Networks describes how connectivity\(^{55}\) supports norm-
based change. Haas’ work on epistemic communities explores how common frames in diverse
positions provide for powerful coordination.\(^{56}\) A voluminous literature in the fields of
Comparative Politics and American Government describes the tensions of logrolling\(^{57}\) and
coalition building – much of the art of interest group politics is navigating between the Scylla of
drift and the Charybdis of marginalization.\(^{58}\) Because these dynamics have been so extensively
researched, we’ll take the standard account at face value.

- **Policy Implication (2):** ‘Normative friction’ describes regime support in practice. This is
  a function of 1) social connectivity, 2) compatible frames and 3) norm coherence. The
  ‘Prime Minister’ manages these forces in the course of normal politicking; the
  ‘Admiralty’ can influence them by making sense of ‘statistics wars,’ and thereby shape
  expectations of the future value of suppression.

While much of the ‘Prime Minister’s job is managing these dynamics, for our purposes, we
will treat them as a given, and spend our analytical energies on how the ‘Admiralty’ can impact
them. As before, this is through arguing for the effectiveness of suppression efforts. Support
ultimately hinges on the societal valuation of the goods vs. the ills of the whole suppression
enterprise. That evaluation is subject to forces largely outside the control of a policy-maker,
which change for largely exogenous reasons. These forces of normative weighing are too

\(^{55}\) Margaret E. Keck and Kathryn Sikkink, *Activists Beyond Borders: Advocacy Networks in International Politics*
\(^{56}\) P. M. Haas, “Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control,” *International
\(^{57}\) James M Buchanan, Gordon Tullock, and Charles Kershaw Rowley, *The Calculus of Consent: Logical
\(^{58}\) John R Wright, *Interest Groups and Congress: Lobbying, Contributions, and Influence* (Boston [u.a.: Allyn and
Bacon, 1996); Charles Tilly, “Britain Creates the Social Movement” (1981),
complex to practically model in this project. What the regime itself can contribute to this societal calculus is an expected value of the effect of future suppression. This is typically based on contested assessments of the present value of suppression. Hence the importance of ‘statistics wars,’ which establish this present value and thereby shape future expectations.

**Regime Linkages.** This model requires joint causation - support and efficiency are related but not reducible. Support describes the relationship of the regime with the outside world, and efficiency describes the relationship of the regime with itself and ultimately with the target market. It would be fair to say that support underwrites efficiency, but unfair to say that efficiency is a function of support. Both of these variables are intertwined causally, and therefore both are needed together to predict success. Regime linkages describe these ligaments between support and efficiency.

Strong linkages allow efficiency and support to mutually reinforce each other. For instance, Captain Denman of the Royal Navy played major roles in both increasing suppression efficiency and defending social support. He excelled at innovating new tactics on the African coast, and took a great deal of operational initiative. He also had the good fortune of being the son of the Lord Chief Justice Denman, a prominent abolitionist. The younger Denman’s hopeful assessments of the campaign’s prospects went viral through the older Denman’s social networks, shaking loose more political capital.

Weak linkages do the opposite. Leaders of the supporting social movement might try use enforcers as an adjunct to their advocacy organizations. For instance, Wayne Wheeler of the Anti-Saloon League initially built the poor-performing Prohibition Bureau as a fountain of patronage to pay his political debts. Alternately, suppression operators may co-opt movement leaders toward parochial ends. A perception of non-coordination between leaders in both camps
can undermine the effort as well – the Coast Guard never publically disavowed the Prohibitionists during the Rum War, but a rift between the two was common knowledge.

The linkage variable should be generally collinear with the other two variables in the model. If supporting social movement is strong, then it will likely find allies inside the enforcing institutions; if the supporting institutions are ‘market-like,’ then they should easily build *ad hoc* partnerships in the larger culture. The opposite should also be true. The linkage variable can be modeled as a friction term within efficiency and support. Therefore, for the sake of parsimony, I subsume regime linkage within the other variables and omit it from the model.

**Putting the Pieces Together: Checking Ratios & Regime Dogfights.** When assembled, these elements create a sustainable adaptation engine. Three analogies illustrate the relationship between these elements.

First, relative support and efficiency can be considered exchange ratios. The support balance becomes the ‘check-writing ratio,’ where the suppressor has deep advantages, as the state owns tremendous resources. The efficiency balance is then the ‘check-cashing ratio,’ where the scales are reversed due to the ease with which the illicit market innovates and adapts. If these balance each other out, then the contest remains a stalemate. The suppressor’s objective is to keep the check-writing ratio high, while they become more efficient and thereby make the check-cashing not as unfavorable. Doing so, they upset the balance and thereby take ground.

The second analogy is the ‘regime dogfight.’ During Prohibition, the Coast Guard owned a fleet of former Navy destroyers. Topping out around thirty knots, these ships were the fastest large ships on any side of the campaign for the duration. Rum-runner motherships could not hope to outrun the destroyer force, but the fast ships had a weakness – they could not turn as quickly as the slower rum-runners. If neither side made an error, both were stuck in a
In this analogy, the power generated by the ship’s engines maps onto regime support. The ship’s structure, which translates that power into speed and maneuverability, maps onto regime efficiency. The illicit regime can move quickly, and forces the suppression regime to overshoot. In the Prohibition case, the Coast Guard partnered the destroyers with picket ships, which were not as quick, but could turn quite well. These two-ship teams performed well, much like a number of leader-linker teams we will encounter in the course of our cases.

Finally, the namesake analogy of the theory is the boxer. Regime support maps onto the build of the boxer, the strength by which he lands and absorbs blows. Regime efficiency maps onto how quick the boxer is on his feet, how quickly he can land punches. As before, the two boxers are asymmetrically matched, but if the suppressor can find a way to get quicker while staying stronger, he will prevail.

**CONCLUSION.**

We have done deal of model building to discover something that we already learned in kindergarten: if you play nicely together, you talk to each other, and you never give up, then things generally turn out well. The complexity of the modern landscape, and the cross-cutting incentive structures between theoretically-allied organizations makes this much more difficult. Increasingly, Non-Governmental Organizations (NGOs) fill spaces previously held by government agencies. While there are benefits to this turn, the traditional bureaucratic politics experienced between different agencies are now experienced between these organizations as they

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59 Boyd had an insight when he was thinking about similar problems with aircraft. Engines create power, but an aircraft’s structure converts this power in different ways into speed and maneuverability. Formally, Boyd used entropy equations to derive ‘Specific Excess Power,’ (or $P_s$) which is the standard aeronautical engineering metric for structural maneuverability. Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War*, Reprint (Back Bay Books, 2004).
compete for the same grants. Unfortunately, the ubiquity of the ‘NGO scramble’\textsuperscript{60} and law enforcement non-coordination demonstrate that these lessons bear re-learning. To that end, we recap the key points of the ‘boxer’ theory.

First, the complex competing regimes (CCR) model identifies twelve causal pathways which connect the suppression regime and the illicit network to market conditions:

1. **Suppression Demand - Suppression Regime**
   - Political mobilization catalyzes the construction and provides for the maintenance of a suppression regime through new or extant institutions.

2. **Suppression Regime - Market Conditions**
   - Those institutions effect change in market conditions through patrolling and direct law enforcement in the market domain.

3. **Exogenous Norms - Suppression Demand**
   - Norm entrepreneurship by activists creates and sustains the political salience of a desire to suppress an objectionable commodity or practice.

4. **Perceived Effect. - Suppression Demand**
   - The effectiveness of the campaign, as interpreted by the regime and the public, leads to continued support if positive, or donor fatigue if negative.

5. **Illicit Demand - Illicit Regime**
   - Demand for an illicit good or practice catalyzes the construction and provides for the maintenance of a provisioning regime.

6. **Illicit Regime - Market Conditions**
   - That provisioning regime delivers the commodity or practice to the marketplace, where it is consumed.

7. **Exogenous Pref. - Illicit Demand**
   - Illicit demand is socially constructed, and is created when illicit entrepreneurship links a primal desire to a socially provided outlet.

8. **Perceived Effect. - Illicit Demand**
   - The effectiveness of the campaign, as interpreted by the illicit regime, shapes illicit demand through deterrence which raises opportunity cost for demand.

9a. **Suppress. Demand – Illicit Demand**
    - The mobilized suppression movement can directly impact illicit demand through moral suasion, which convinces former consumers to turn away.

9b. **Illicit Demand – Suppression Demand**
    - Illicit support communities can directly impact the suppression movement through co-optation, which engages and alters the normative calculus.

10a. **Suppress. Regime – Illicit Regime**
    - The suppression regime can directly impact the illicit regime through interdiction, which removes critical nodes in their networks.

10b. **Illicit Regime – Suppression Regime**
    - The illicit regime can directly impact the suppression regime through corruption, which neutralizes key parts of the campaign.

These causal pathways boil down to three loops. Both the suppression regime and the illicit market will attempt to engage each other on the physical level, by attacking the commodity or practice itself, the social level, by attacking each others’ networks, or on the cultural level, by attempting to change demand. These nested loops are mutually reinforcing, but they operate on
different timelines – physical-focused actions are the fastest but most ephemeral, social-focused actions requires deeper intelligence investments but yield leveraged effects, and cultural-focused efforts take the longest but provide a sustainable endgame. The dynamic competing regime (DCR) model ties these loops together:

| **1. Physical Loop**  
| (Marketplace Focus) | Control over the physical and virtual market domain used by the illicit market will allow the suppressor to inject enough risk into these spaces to make them unusable. This is done through ‘patrolling’ strategies. |
| **2. Social Loop**  
| (Regime Focus) | Intelligence superiority allows the suppressor to inject risk into illicit networks’ coordination mechanisms. This eats into profits and reduces firm size, which then renders them vulnerable to ‘patrols.’ This is done through ‘interdiction’ strategies. |
| **3. Cultural Loop**  
| (Demand Focus) | By keeping prices high, the suppression regime implicitly subsidizes alternatives to the illicit good or practice. To maximize its chances of meaningful changes, the suppressor should use a ‘seed and weed’ approach - identifying, protecting and fostering useful alternate path dependencies, while continually suppressing the benefits of the illicit path dependency. |

Since the DCR model ties these loops together in one shared ‘three-fold space,’ we can abstract out of these nested loops to the meta-variables of regime efficiency, regime support and regime linkages. The ‘boxer’ theory relies on joint performance in regime efficiency, which is a function of information friction, and regime support, which is a function of normative friction. These efforts must be coordinated through regime linkages, so that improvements in one do not come at a cost to the other. If the suppression attempt can reduce both forms of friction through
structure, culture and technology, then it is more likely to prevail.

Our three core hypotheses for the ‘boxer’ theory are built out of these three meta-variables. Market-like structures should increase efficiency, so suppressors should grow more ‘market-like’ in their organizational structures as the campaign progresses, and should succeed more and more as they do. Support starts as given, but regimes which contend well in ‘statistics wars’ can bolster that support – we should see this as a feature in most campaigns, and those who do well in them are more likely to succeed. Finally, both support- and efficiency-based strategies should be coordinated – we should expect that campaigns where the ‘Prime Minister’ and the ‘Admiralty’ are in synch should fare relatively well.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Support Hypothesis</td>
<td>Regimes that are able to keep support strong by winning ‘statistics wars’ will buy more time for efficiency reforms to take hold, and therefore are more likely to succeed.</td>
</tr>
<tr>
<td>2. Linkage (Omitted)</td>
<td>Support &amp; Efficiency reinforcing each other. Strong linkages amplify both and vice versa. <em>(This variable is subsumed into support and efficiency as a friction term.)</em></td>
</tr>
<tr>
<td>3. Efficiency Hypothesis</td>
<td>Regimes that are able to convert support into efficiency by building ‘market-like structures’ are more likely to succeed in suppression attempts.</td>
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Since these nested loops build on each other, we would expect a script of sorts for a suppression attempt. The suppression regime should attack the illicit market in the open marketplace, and if it can make those spaces unusable, then the illicit market will reboot into
defensive organized structures. The suppression regime should then attack the coordination means of those structures, which will disrupt the illicit market enough to create space for demand restructuring. The suppression regime should remain in this final phase of demand restructuring as long as its support endures. The illicit market will fight this process in every phase through competitive sensemaking and adaptation.

Initial regime support creates a ‘stopwatch’ for this process, as support will decline as the regime converts and spends it as organizational resources. Regime efficiency drives the speed at which the suppressor can iterate through this script against the opposition of the illicit market. Regime support efforts during the case can add or subtract time off that stopwatch. If this model holds true, we should see suppression attempts follow this basic script, while improving efficiency in order to move forward and protecting support in order to stay in the game. Since both sides get a vote, we should expect this process to happen in fits and starts, with each side innovating interventions against their adversary while countering the interventions leveled against them. In the next chapter, we will use this script and these system shocks as a method for testing the ‘Boxer’ theory.
CHAPTER 4, APPLIED ‘SCRIPTS’:  
TESTING STRATEGY & POLICY APPLICATION FRAMEWORK 
SUPPRESSION CAMPAIGN PHASES: 
THE OPERATIONAL AND ORGANIZATIONAL SCRIPTS.

STRATEGY AND OVERALL FRAMEWORK.

In the last chapter, we built an operations-focused ‘theory of victory,’ and an organizationally-focused meta-theory. We hypothesized that both of these work together to explain success and failure in our cases. The suppression regime must improve its effectiveness while maintaining strong support, which speeds up the regime’s ability to innovate against the illicit market and counter illicit innovations. Changing this balance of innovation allows the regime to take ground over time, overtaking the market domain in physical, social and ultimately cultural space.

In this chapter, we will build a theory testing strategy by exploring these hypothesized relationships. Our overall theory testing strategy builds and tests the primary model using the two most prominent historical cases of international illicit market suppression attempts – British Suppression of the Atlantic Slave Trade, and the US Coast Guard’s ‘Rum War’ during Prohibition. Since both of these cases include long periods and various approaches, we find sufficient intra-case variation to fully account for the state space of the efficiency and support variables. These historical cases have more complete data than contemporary cases, and since they have run their course, they offer a more comprehensive view of the consequences of complexity.

We will test these historical cases using a ‘macro/micro’ approach. First, we will evaluate whether the cases comport with the broad heuristics predicted by the ‘Boxer’ model – does the combination of relative efficiency and relative support predict progress? Does the illicit market
lose volume and move underground as the campaign progresses, and does a suppressed illicit market lead to changing preferences over time? If these hold, then we will look for micro-signatures of networks in conflict.

The field of dark networks attempts to assess (and often target) these sorts of clandestine social structures. Building on these approaches, we’ll explore the process of competitive adaption by tracing the ‘shockwaves’ that should accompany successful interventions. We will then apply this method to several contemporary mini-cases to ensure the pattern holds. If our theory provides an effective representative heuristic on the macro level, and our posited processes hold up on the micro level, we can consider the ‘boxer’ story on sound footing.

This chapter is intended as theory application, with the hope that it can be applied both as a model for theory testing and as a basis for policy analysis. If it does one well, it should be useful for the other – since our model focuses on effectiveness, our theoretical bets concern the composition of illicit markets and the optimal construction of counter regimes. Policymakers in the ‘Admiralty’ are required to make the same sorts of bets in their suppression plans. Therefore, we have constructed these scripts and strategies with the specific intent that they might be useful to the players that inhabit these cases, as well as to the researchers who stand outside of them.¹

We proceed as follows: first, we will describe the three scripts for our macro model. We will then describe the specifics of our large-\(n\) testing strategy. Second, we will describe the ‘shockwave’ signature, as identified by the spatial ‘splash’ and temporal ‘sawtooth’ patterns.

This will allow us to map these techniques onto cases to test our posited mechanisms. Finally, we will discuss policy applications of the scripts as strategy and the signatures as analytical tools.

**MACRO TESTING: PARALLEL PROCESS TRACING.**

A comprehensive survey of the timeline of transnational illicit market suppression attempts will reveal if our hypothesized models accurately describe these cases. Since this universe of cases is manageable, we can avoid a slew of inference problems by briefly covering them all. In each of these cases, I posit that there are two intertwined sequences of events – the regime is attempting to restructure itself to grapple with a highly adaptive market, while it is simultaneously trying to take and hold the entire market domain. Progress (or stalls and reversals) in organizational change should lead to the same in the market place. Therefore, if the ‘boxer’ model holds, quicker moves toward efficient structures should result in a higher degrees of demand restructuring before political will for suppression is exhausted. Simply, more market-like structures yield better results.

The universe of transnational illicit market suppression is tremendously diverse, with wildly variant contexts and data availability. While illegality is as old as laws themselves, the first major trans-border suppression attempt was likely the Caliphate’s campaign against *khamr* (intoxicating beverages.) Discovery of the new world led to the next major case - an international campaign against piracy led by the Spanish. (To be more precise, this was basically a Spanish campaign against piracy, and a multi-national pirate campaign against the Spanish.) British suppression of the Atlantic slave trade inaugurated the modern era of international illicit suppression, which comprises the vast majority of cases – the combination of normative foreign
policy goals and a globalized economy led to a proliferation of these campaigns. Only a few cases have accessible rich data, but we have broad fragmentary data on the rest of the universe.

Attempting to find a common algorithm in order to fit a curve to such wildly variant cases is problematic at best. Much of the story is in how idea entrepreneurs in law enforcement and illicit markets made the most of their context, and structurally reductionist approaches miss most of this. Heuristics provide more space for context and interpretation than algorithms. Rather than impose a master ontology on these data, we will instead describe the aforementioned operational progress and the organization change sequences as ‘script’ heuristics.

Operational progress involves three phases - the suppression regime must gain control of the open market, and then interdict and disrupt organized criminal groups, and finally support demand restructuring. In order to advance through these phases, the regime implements the imperatives of the ‘boxer’ model through an organizational change script - the regime must increase its own network efficiency, while degrading that of its adversary, and it must maintain the strength of its supporting social movement, while degrading demand.

2 Though beyond the scope of this design, I believe it is probable that at least local hegemony is a prerequisite for initiating a serious suppression attempt. ‘Under what conditions do nations or coalitions attempt suppression’ is an interesting question in its own right. This parallels Nexon’s argument that empire international structures parallel domestic governance – a nation needs a strong expectation that it can create distributed governance structures in the international which parallel the domestic in order to expect something other than anarchic balances of power. That said, our model assumes such an attempt has already begun, and implausibly resourced suppression attempts select out of the system fairly quickly (typically before full-scale implementation.) Even in Prohibition, the role of plausible resources played an important part in strategy – the passage of the Income Tax took Prohibition from an aspiration to a possibility, and the stock market crash forced a surprisingly quick reversal on the attempt, due to the need for an excise tax and the inadequacy of governmental resources following the crash. Daniel H. Nexon and Thomas Wright, “What’s at Stake in the American Empire Debate,” American Political Science Review 101, no. 02 (2007): 253–271; Daniel Okrent, Last Call: The Rise and Fall of Prohibition (New York: Scribner, 2010).

3 It would seem at first glance that traditional large-n statistical approaches would be useful here, but a coarse qualitative approach is superior due to the mechanisms involved. Since the engine of competitive adaptation is built of the two pistons of sensemaking and innovation, we need instruments that can measure both. Innovation is a rare event – to use Nassim Taleb’s term, a black swan (or at least a grey swan.) Taleb argues that central-limit-theory-based regression approaches are good for common events, but weak tools for predicting outliers. We will need a qualitative approach that can comprehend these outliers. Sensemaking is equally problematic for regression-based statistics, as it is a continuing reciprocal social process better suited for constructivist tools. Nassim Nicholas Taleb, The Black Swan: The Impact of the Highly Improbable (New York: Random House Trade Paperbacks, 2010).
These scripts should both run simultaneously, and progress in one should enable progress in the other.

I argue that if our theory holds, competitive adaptation is the engine that provides the suppression regime the ability to overtake the market domain. This derives from organizational structure, and drives operational progress. While every regime that becomes more ‘market-like’ should progress along the operational script, not every regime will choose to become more ‘market-like’ at the same rate. For instance, the Coast Guard remodeled its organizational inter-relationships remarkably quickly during Prohibition – this is likely due to organizational expansion and the fact that most of its small cadre of officers knew each other personally.4 Conversely, the more ossified Royal Navy spent years using conventional naval command structures instead of the much more effective decentralized interdiction forces in their campaign against the slave trade;5 this delayed their operational and organizational scripts, and might have altered the outcome had they not had the benefit of deeper support and more realistic goals. In both cases, we see what we would expect from the ‘Boxer’ theory – organizational design determines adaptation speed, which in turn determines operational progress.

**Evaluating Cases.** These parallel scripts allow us take a ‘congruence’ approach6 – despite differences in context and fidelity, we can see if what we know lines up with what we’d expect. We will evaluate both if the progression of the case is congruent with the ‘Boxer’ theory, and whether the case be explained by a simpler formulation of a regime theory. Congruence allows

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4 Interview, US Coast Guard Historian’s Office, Fall 2013.
us to also consider outcomes in a limited sense – while predictions of success or failure are inherently problematic due to the outsized role of rare events\(^7\) in these cases, a catalog of failure modes provides planners a sense of shoals to avoid.

Assessing the level of necessary regime complexity should also be useful for policy design – we will assess if each case can be explained (and hence solved) with simpler formulations of our causal model. This should identify under what conditions full-scale ‘Boxer’ adaptive regimes are required. If a problem is less adaptive, a simpler Transaction Cost regime may suffice; if the problem has an \textit{a priori} identifiable Achilles’ heel, it may be cheaper to build a regime specifically against that vulnerability. Our full model was built for the hardest cases, and relatively benign or uniquely vulnerable markets may not require every pathway active in order to prevail. Policymakers would benefit from understanding which categories of campaigns require the full spectrum approach and which ones can be solved with simpler regimes.\(^8\)

Since we are tracing these cases along timelines, the passage of time serves as a general control. Confounding variables are likely to track with simple time. For instance, economic growth might drive operational progress through sheer resources, or demand may change due to independent shifts in tastes. However, system disruptions that exogenously alter organizational structure – leadership changes, communications technology improvements, the tightening or relaxation of political constraints - allow us to differentiate the relationship between the operational and organizational scripts from endogenous explanations for their reciprocal

\(^7\) Taleb, \textit{The Black Swan}.

\(^8\) Internet entrepreneur Clay Shirky describes a tradeoff between features, quality and time in software development. The same triangle should apply to regime design: a regime can be comprehensive, robust, and cost-efficient... pick two. If a problem can be solved with more precise targeting (less comprehensive) or without major institutional change (less robust), then it can be solved at lower cost. Clay Shirky, \textit{Cognitive Surplus: How Technology Makes Consumers into Collaborators}, Reprint (Penguin Books, 2011); “How Willful Ignorance Doomed HealthCare.gov - Clay Shirky,” \textit{POLITICO Magazine}, accessed November 27, 2013, http://www.politico.com/magazine/story/2013/11/the-willful-ignorance-that-doomed-healthcaregov-100290.html.
Since adaptation happens in fits and starts, we expect to see ‘shockwave’ signatures in these stories that track with measure-countermeasure cycles. Where the data fidelity allows, we’ll spend extra attention looking at the effects of shocks, stalls and reversals. These ‘shockwaves’ isolate interactions between these two scripts, allowing us to differentiate these sequences from the simple passage of time.\textsuperscript{9} We will build on this idea in the micro portion of the design.

If the hard ‘power’ alternate hypothesis model holds, this competitive adaptation story is epiphenomenal – calendar time should track monotonically with operational progress based on political willpower and national capacity.\textsuperscript{10} Alternately, if the ‘simple regime’ alternate hypothesis holds we should see linear or geometric progress, but should not see stalls or reversals due to illicit adaptation. If the hard ‘norm’ alternate explanation holds, then calendar time should track monotonically with organization adaptation, as a networked organization is emblematic of a network movement; in this case, it is the Transnational Activist Networks (TANs) doing all the work. Since this model focuses on viral network adoption, we would expect to see geometric cascade effects.\textsuperscript{11} Finally, if the demand-only ‘null’ hypothesis holds, we should not expect any correlation between organizational adaptation and operational progress.

\textsuperscript{9} More precisely, this is the general insight behind time series statistical designs, and the specific insight behind interrupted time series and regression discontinuity designs. Using these deviations from normal forward progress as an instrument, we can evaluate the link between the two scripts while using time as a control. On an abstract level, any controlled regression design must have at least three matrices – two which are hypothesized to move together, and a third which does not move with the previous two. In each case, we consider progress along these scripts as a matrix, and the progression of time as a general control. During shocks and reversals, differences between the time script and the other two scripts become the most apparent, and hence these events provide our best differentiators. David McDowall et al., \textit{Interrupted Time Series Analysis}, 1st ed. (SAGE Publications, Inc, 1980).


The Operational Progress Script. The operational script tracks onto our ‘theory of victory’ from the last chapter. By deeply interfering with the illicit supply chain, the suppressor implicitly subsidizes alternate demand functions. The suppressor generally begins this effort in physical space, occupying and patrolling the places used by the illicit market to do business. When the risks for using these places becomes too high, the illicit market reboots into a more organized form. This takes the fight into the shadows of social space, with the suppressor and the illicit market both probing their enemy for weaknesses and repairing their own vulnerabilities. If the pressure from this interdiction phase can be maintained, the suppressor can work with a variety of actors to catalyze demand shifts over time.
Prior to the operational script, the nascent suppressor outlaws a practice and sets out to suppress it. Not every attempt has this ‘phase zero,’ as the good or practice in question may already be formally illicit. However, the two main historical cases of this model – slave trade suppression and Prohibition - began with outlawing a previously legal practice. It is then useful to briefly consider this ‘white market’ phase. If the suppression regime comes about through some sort of legal hostile takeover, the licit market may pass along some of its physical infrastructure, social networks and normative support.

In the first phase of the operations script, the suppressor attempts to wrest control of the key physical marketplaces from the illicit market – places of normal commerce, red light districts, known street corners, or anywhere else where common knowledge might seek out illicit
transactions. This phase is a campaign against the ‘grey market,’ as the illicit market at this point is still disorganized and making use of the normal societal infrastructure for commerce. The illicit market should prefer these disorganized structures to formal networks, as illicit entrepreneurs absorb small amounts or risk or pay nominal rents to law enforcement in the form of corruption. In a formal structure, private protection rackets such as the Mafia typically extract more rents. Therefore, the illicit market will persist in this tactically organized state until the suppressor can inject enough risk into these physical marketplaces to make them unusable. The suppressor does this through effective patrolling.

In this phase, the illicit network attempts to use implicit coordination by piggybacking on implicit societal coordination ‘focal points’ - marketplaces, financial structures and normal communications means. For example, the internet marketplace Backpage.com14 is widely regarded as an enabler for human trafficking by anti-trafficking advocates, as traffickers can use its anonymity and ease of use to facilitate their operations. In the second phase, this low-cost implicit coordination is no longer possible, and the illicit market must use explicit coordination and deliberate structures to solve these problems.

Coase’s Theory of the Firm describes the tipping point between this disorganized phase and the second phase, which is characterized by clandestine structures and organized criminal networks. His theory predicts that firms will organize when the cost of doing business inside an organization is less than the cost of doing the same functions on the open market.16 In licit markets, repetitive functions make sense to do in-house; if you constantly need legal forms, it’s

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14 And previously Craigslist.com.  
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cheaper to hire a lawyer than to drive to a lawyer’s office every day. Similarly, hard-to-quantify long-term functions are better managed as formal positions in an organization. Illicit markets must contend with these issues, as well as high coordination costs – if customers can find them, then so can law enforcement. As the effectiveness of law enforcement patrolling increases, this problem becomes all the more acute. At some point, patrolling induces so much coordinating cost that the illicit market seeks protection in organization.

Organized crime profits by providing private protection, which meets these needs but at a cost.\textsuperscript{17} In order to do so, these firms must solve a number of collective action problems. The provision of corruption or counter-tactics is a costly enterprise, and Mafias are not in the business of providing public services free of charge. In lieu of normal legal contract enforcement, organized crime compels the beneficiaries of their services to participate through the threat of violence. For this reason, Diego Gambetta describes the function of the Mafia as a shadow semi-state with an acknowledged partial monopoly on violence and some degree of public service provision.\textsuperscript{18} However, this shadow service provision is generally more costly in terms of rents than the use of normal governance structures. For this reason, illicit markets should prefer ‘grey markets,’ where they can still use societal infrastructure, to ‘black markets’ where they cannot. However, if the ‘grey markets’ are effectively unusable due to effective patrolling, the illicit market is forced to organize.

This brings us to the second phase of the operations script. Here, the illicit market has rebooted into a clandestine, organized ‘black market.’ Patrolling is less effective against these structures, as they are built to operate in the shadows. For instance, the Coast Guard effectively disrupted the fixed ‘rum rows’ of liquor ships hovering off the New York coastline with

\begin{footnotesize}
\begin{enumerate}
\item Gambetta, \textit{The Sicilian Mafia}.
\item Ibid.
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\end{footnotesize}
patrolling and tracking tactics. This caused the illicit rum trade to shift toward larger structures that used radios and clandestine signaling for coordination. The Coast Guard could not effectively patrol thousands of square miles of Atlantic seaboard; costly as it was, this organization nullified the effect of patrolling.

Accordingly, the Coast Guard shifted tactics away from patrolling and toward interdiction. Coordination was the cost driver for these illicit organizations – if the Coast Guard could hack into these clandestine communications they could inject risk into the internal cost of doing business. Pursuant to this, Major and Mrs. Friedman of NSA fame cut their teeth breaking rum-runner codes.19 The Coast Guard innovated a number of key SIGINT technologies during this period, including the first ship-mounted and the first suitcase Radio Direction Finder.20

This is the game of this second phase – inject as much risk as possible into coordination mechanisms. This game is played in social space, as it revolves around the cost of network tie construction, which in turn determines the maximum span and effectiveness of adversary social structure. Of course, physical and social space are intertwined, so one of the best ways to increase tie construction cost is to target those who are best at constructing ties. Cultural space also determines social freedom of maneuver – a secure civil society is more likely to inform on practices they find objectionable. Conversely, an unsupportive civil society is likely to provide aid, comfort, and intelligence to illicit marketeers. Suppression campaigns spend much of their time in this phase, as states generally excel at high-level control of territory but have great difficulty out-innovating a networked adversary.

In this phase, security concerns predominate. Because of this, defections are especially

20 Ensign, *Intelligence in the Rum War at Sea, 1920-1933*. 
destructive to close-knit defensive illicit network structures. The illicit network must find ways of solving both an identification problem and a defection problem. Eli Berman argues that a ‘club good’ approach solves both of these at once – by using identity boundaries as a security measure, the illicit group builds an organization around an identifiable and distinct core group.\textsuperscript{21} He proposes religious groups as a substrate, though ethnic structures have provided the traditional substrates for criminal enterprises.\textsuperscript{22} I hold that this is not due to the characteristics of a specific ethnic group, but rather due to the structural opportunities provided by the marginalization of an identifiable group along a fissure of the larger society.

At their heart, both of these phases are about shutting down sanctuary. Sanctuary radically reduces the coordination cost for the illicit market and houses vulnerable functions.\textsuperscript{23} In the first phase, the illicit market operates from generally known sanctuaries within the contested market domain. Patrolling makes these sanctuaries unusable. When these ‘inside’ sanctuaries are no longer available, the illicit market should migrate some functions outside the domain (‘outside sanctuary’), and should perform the remainder of functions through clandestine coordination (‘sanctuary-in-between’). By moving vulnerable training or production functions to these outside sanctuaries, the illicit market can protect these functions and enjoy the benefits of open coordination. However, the suppression regime can cut off connectivity to this shadow infrastructure through effective interdiction. Elements of the illicit market persist in the market domain by going underground. Using clandestine coordination, the market can do business by staying beneath the suppressor’s sensemaking threshold. Like a criminal taking advantage of

jurisdictional boundaries by jumping back and forth across them, coordination breakdowns in the suppression regime yield ‘sanctuary-in-between.’ Phase one attempts to shut down the ‘inside sanctuary,’ while phase two attempts to decouple ‘outside sanctuary’ and eliminate ‘sanctuary-in-between.’

If the state is successful at interdiction while maintaining pressure through patrols, they should be able to stress the illicit market.24 This implicitly subsidizes alternate paths, which should allow for path swaps. If one path dependency can be uprooted and replaced with another, suppression can be eased out over time. The second tipping point in our model is based on the theory of ‘myopic addiction,’25 which argues that one can break out of a path through ‘commitment devices,’26 which counteract the short-term benefits of the path dependency. These devices allow the addict to bridge the short time horizon where the negative path seems more attractive and reach a point where another path is preferable for the duration. Suppression acts as a ‘commitment device’ by removing the short-term attractiveness of the illicit market; it does so by inducing at least as much cost as the opportunity cost of the illicit good’s next acceptable replacement. This causes some amount of the illicit demand to swap to less objectionable

24 In this, I don’t draw a distinction between supply-side and short-term demand side measures. This is for a number of reasons: first, that distinction assumes a clear split between producer and consumer, which does not exist for all goods under all conditions. A heavily suppressed market may even use production as an authentication measure – one tragically effective countermeasure used by child pornographers is to require original content in order to access their computer networks. This is a sign that suppression is effective, as it inhibits the large-scale production economies of scale in order to meet security needs. Second, the same infrastructure used for attacking supply can be turned on demand, as in the case of the anti-human-trafficking ‘Nordic Model.’ Finally, the networks that link producers and consumers in social space cannot be reduced to exogenous draws from a determinants curve, the way microeconomic models assume. Therefore, I don’t use the terms supply-side or demand-side suppression, but instead think of deep demand in cultural space and see all short-term suppression measures in social or physical space as catalyzing these changes, regardless of whether they target producers or consumers. For information on the Virtual Global Taskforce against child pornography, see http://www.virtualglobaltaskforce.com/. For information on the Nordic Model, see Nadejda K. Marinova and Patrick James, “The Tragedy of Human Trafficking: Competing Theories and European Evidence1,” Foreign Policy Analysis 8, no. 3 (2012): 231–253, doi:10.1111/j.1743-8594.2011.00162.x.


consumption. Economies of scale and time\textsuperscript{27} grow for that new consumption pattern and shrink for the market under suppression. This causes the opportunity cost gap to shrink and allows suppression to be eased out.

This process comprises the third phase of the model. Once an initial opportunity cost threshold is crossed by the suppression regime, path swaps begin. The more time that the suppression regime can spend in this phase, the better a path swap it can accomplish. If it only briefly remains in this zone, it can achieve a minor ratchet effect by replacing the worst of the objectionable behaviors with something akin but less virulent.

For instance, even the poorly-executed Prohibition campaign changed the complexion of American drinking. The co-ed speakeasy displaced the male-dominated hard-drinking saloon; the ‘wet’ forces disavowed the saloon during the campaign for repeal. This outcome disappointed Billy Sunday, but it did decrease drinking in a lasting way\textsuperscript{28}.

With enough tenacity in this zone, suppression can support radical changes in the target market. The British slave trade suppression effort took half a century, but irrevocably eradicated the Atlantic slave trade. The shift in labor flows that happened in the course of that case could not be undone\textsuperscript{29}.

There are two basic approaches to this phase: intentional and emergent. In the intentional approach, the suppressor subsidizes a target alternate market for the path swap. The problem with this, as with any central planning approach, is the difficulty of guessing an acceptable


\textsuperscript{28} Okrent, \textit{Last Call}.

\textsuperscript{29} This is still a ratchet effect – the ‘Coolie Trade’ that replaced the Atlantic slave trade was akin to modern labor trafficking. Arnold J. Meagher, \textit{The Coolie Trade: The Traffic in Chinese Laborers to Latin America}, paperback (Xlibris Corporation, 2008). That said, it was a difference in kind from the Middle Passage, especially when contextualized with the contemporary understanding of labor rights.
substitute good in advance of emergence.\(^{30}\) A good way of trying to solve this problem is to look at micro-emergence – what processes are working on a small scale in the target market domain, which could conceivably go viral if a market vacuum existed?\(^{31}\)

A second problem with the intentional approach is that the most likely replacement basket of goods for an illicit practice is a slightly-less-illicit practice; populist norm-driven campaigns may not maintain internal coherence advocating for a gradual change of this sort.\(^{32}\) It is organizationally easier to ‘shoot for the moon’ and hope the ratchet effect holds whatever ground you do take.

As the Prohibition case demonstrates, though, this often leaves a mess and can be counter-productive. American beer brewers viewed liquor distillers with contempt even when they should have been allies, but the Prohibitionists’ ‘bone dry’ stance prohibited any partnerships with brewers.\(^{33}\) At the end of the case, the brewers ended up profiting nonetheless at the expense of the distillers, with beer taking more market share of the reduced amount of American drinking.\(^{34}\) Had the Prohibitionists settled for legalizing beer and interpreted the 18th Amendment’s “intoxicating liquors” provision narrowly, they could have likely achieved most of what they ended up achieving with less social disruption and at much lower cost.\(^{35}\)

Suppression campaigns generally have an aspirational path swap in mind upon setting out. That path swap is unlikely to happen as planned. The British massively subsidized free labor in

\(^{31}\) This speaks to the planning problems described by Scott and Easterly in the international development world. Ibid.; William Easterly, The White Man’s Burden: Why the West’s Efforts to Aid the Rest Have Done So Much Ill and So Little Good, First Edition (Penguin Books, 2007).
\(^{33}\) Okrent, Last Call.
\(^{34}\) Ibid.
\(^{35}\) Ibid.
Sierra Leone in hopes of outcompeting the slave trade on its own turf; this “mighty experiment” languished in the long-run.\(^{36}\) They invested much hope, and many pounds sterling, in palm oil as an indigenous labor-intensive crop that could supplant the direct sale of laborers; this had mixed results.\(^{37}\) A much more invasive final path swap – a shift to Asia for South American labor needs, along with British colonization of West Africa - required wholesale political and economic restructuring, and brought with it slews of other problems.\(^{38}\) The British lasted long enough for emergence to occur, even though the path swap did not take the form they had anticipated. ‘Bone Dry’ Prohibition looked to soft drinks and clean living in lieu of drinking, but judging from the inconclusive results of the Caliphate’s centuries-long campaign against *khamr* (alcohol,) it seems unlikely that they understood the time horizons required for such a change.

The second approach, emergence, is generally what ends up happening anyways. By stressing the target illicit market, the suppression regime sets the conditions for the emergence of substitute markets. Given enough time, these potential replacements can be identified, and the suppressor can ‘feed’ these markets with subsidies and ‘weed’ out threats to their continued growth. This takes more time than a successful intentional path approach, but given the difficulty in identifying a successful path *a priori*, it is likely a more efficient road. An intentional path approach also creates constituencies and public choice problems, so it can blind a suppressor to profitable emergence; intentionality can be ‘too smart by half,’ so it often pays to wait.

The error generally associated with the emergence approach is an ideological aversion to helpful emergence. The previously mentioned Prohibition error with the brewers cost the

\(^{37}\) Ibid.
\(^{38}\) Lloyd, *The Navy and the Slave Trade*.
suppression effort an ally; perhaps that ally would have fractured their coalition, but it certainly would have helped in the marketplace.\(^{39}\) William Easterly lays out a strong emergence-based strategy for development aid: search for what works, experiment, evaluate, reward success and penalize failure.\(^{40}\) This seems to work equally well in the competitive development contest of path swaps.

The longer a suppressor can remain in this third phase, the longer they can support emergence and the better a result they can secure. We will use this script as a template for the progress of the campaign itself with reference to market conditions. Accordingly, we will trace how far each case progresses along this timeline. Cases that achieve phase three should be able to secure some market change, and therefore we expect the suppressor to attempt to push through toward that phase and remain there as long as they can. Ensuring that these processes all hold is a weak hypothesis test – while it lends credence to our story if progress in this story predicts relative success, it does not falsify any of the alternate hypotheses if it does (except for perhaps the null.) Accordingly, we must compare this script to the organizational script to support our claims.

**The Organizational Change Script.** This second script reflects the core variables of the Dynamic Competing Regimes model: efficiency and support.\(^{41}\) Suppressors rely on support from political structures, which determine the durability of the suppression attempt. They need to translate that support into effects in the marketplace, so they should seek more efficient

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\(^{39}\) This is akin to Petraeus’ approach to potential friend and enemy emergent groups in Iraq – some groups could be reconciled, but some could only be fought. The key was knowing which was which. The converse error – not setting the slider aggressively enough – is more rare, but could potentially jeopardize the ultimate goals of the campaign by committing to too many concessions too quickly. In an overall ratcheting plan, however, short-term practical alliances may aid in logrolling and benefit long-term objectives. While interesting, we will bracket the question of normative movement alliance strategies.


\(^{41}\) Since ‘regime linkage’ is a meta-variable reflects the synch between these two variables, we won’t include it in our large-n coarse test.
‘market-like’ structures over time. This can happen through intentional planning or through emergent selection (i.e. trial and error.) In concert, these allow the regime the span to cover the market domain and the speed to compete with illicit innovation.

As opposed to the Operational Script, the Org Script does not have clear inflection points; reformers attempt to transition their institutions to these market-like structures as best as they can over time, and those institutions endure periodic political ‘support checks’ from time to time. We should therefore expect a general trend toward increasing efficiency, with background ‘support checks’ adding resources, sustaining the effort, or terminating the suppression attempt.

Support. The support variable describes political support for the suppression network, which manifests through appropriations. The campaign spends this social capital in the form of organizational resources and financing, and at some point that capital will run out. The deep objective function for this support is determined by social mobilization, donor fatigue, and domestic politics, but this function is tapped from time to time in discrete ‘support checks’ such as referenda, special committees or elections.

The outcome of these checks include an array of factors outside the control of the suppressors, or even their political leaders. For instance, exogenous economic shocks can play a huge role in these campaigns – the origins of the 1929 stock market crash were unrelated to the Prohibition campaign, but played a large role in curtailing the campaign. An excise tax on alcohol looked far more attractive after the collapse of income, when an income tax is the primary source of government wealth.\(^\text{42}\)

However, the suppression regime can directly engage in ‘statistics wars,’ using their analytical capabilities (and ideally operational successes) in helping favorably resolve the

\(^{42}\) NARA RG 26, Box 82(A), 178. Okrent, Last Call.
inherent ambiguity about the success or failure of the enterprise. It can also use population-centric strategies through NGOs and advocates to keep the support for the campaign strong. Still, much of what constitutes support’s objective function is beyond our ability to model here. The role of the suppression regime in support comes to the fore primarily during support checks. For this reason, we treat support as a background variable for all times other than ‘support checks.’

A ‘support check’ can result in one of two outcomes – if appropriations remain constant or increase, they sustain the effort. If they are significantly curtailed, this is generally a sign of a shift away from suppression and toward maintenance. Because of the ratchet effect of market changes, the regime can generally consolidate some of the progress it has made in restructuring demand with a much lower degree of residual effort. Since few goods or practices are ever fully legal or illegal in all circumstances with no restrictions or conditions, this endgame describes the full spectrum of ‘success’ and ‘failure’ in these cases. In the generally successful British Slave Trade suppression attempt, the suppression regime reverted to a maintenance mode after Asian bonded labor flows replaced African slavery; the abolitionist coalition could not hold together through a shift toward labor rights. Conversely, in the Prohibition case, Admiral Ballard of the Coast Guard argued well before the 21 Amendment for robust residual expenditures to enforce the excise taxes on alcohol that would certainly follow repeal. This foresight proved quite useful, as the residual Coast Guard enforcement regime suppressed a surge in rum-running which occurred two years after repeal.

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43 As a simplifying assumption, we’ll consider increases in appropriations as corrections to a previous shortfall, and functionally equivalent to sustained support. The successful ‘support check’ in the British 1849 vote on suppression of the Slave Trade resulted in an increased allocation of ships to the West Africa Squadron, for instance. Rees, *Sweet Water and Bitter*.

We will annotate successful support checks along the organizational change timeline. Provided the resources from a ‘support check’ are adequate to the task, these are treated as constant until the next ‘support check.’ If available, we will use margins on vote counts as an indicator of the residual strength of support – decreasing margins for continuing constant appropriations indicate a decrease of support.45 A failed support check will be considered the end of the suppression attempt, as the suppressor should attempt to secure their high-water mark of market change and shift to a maintenance posture. Renewed high levels of effort will be considered the beginning of a new suppression campaign.

In practice, the support half of the organizational change script is simple: you fight until you can’t.46 Since the objective function for support is complex, you generally don't know when that will be. The suppressor has direct control over structural efficiency, but only indirect influence over support. While the suppressors themselves get a vote through ‘statistics wars’ and communicating compelling narratives of progress, support itself generally moves primarily through exogenous social tides. Therefore, it makes good sense for a suppressor to spend the balance of their analytical resources on organizational structure and efficiency. We will do the same.

Efficiency: Complexity Refresher. As outlined in Chapter Two, in order to understand efficiency, we must understand complexity. Fundamentally, the efficiency variable is a meta-strategy for solving complex problems. The graphic below depicts three fundamental types of problems: simple, complicated and complex.

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45 Since our cases occur in wildly different contexts, we will use contextualized relative terms, with the initial appropriations vote as a baseline for both vote margins and resource appropriations.
46 Phrasing borrowed from a pop culture reference.
Problems that can be fully specified and solved by an individual are ‘simple’, and therefore require no organizational structure to solve them. In the graphic, A-star solves A directly. Problems that involve a lot of moving pieces that can be assembled and disassembled are ‘complicated,’ and are best solved by reducing them into parts and solving each individually. In the graphic, we can reassemble the solution pieces A-star, B-star and C-star in order to resolve the complicated ABC problem. Archetypal industrial age assembly-line problems are complicated, and effectively solved through reduction and re-assembly.

Problems that are so tightly bound up together that they cannot be disassembled without cascading errors are ‘complex."\(^47\) In the graphic, the relationship between A, B and C is

\(^47\) Dr. Valerie Sitterle of the Georgia Tech Research Institute and I moderated a Strategic Multilayer Assessment panel in November 2013 on sociotechnical systems where we advanced the idea that all systems involving humans are inherently complex, as humans can change the rules in time by innovating new parameters, inputs and responses. If this is true, then it implicates the whole of social scientific research – no human system can be fully specified and
irreducibly complex; we cannot remove a part without changing the system. Reductionist approaches run afoul of these intertwined relationships – removing A to solve A-star yields a new A-prime. The problem mutates when you try to pin it down. The proper approach is then to recognize the irreducibility of the problem and trade functional divisions for team structures. By subdividing the problem along its natural fault-lines, localized teams (ABC-stars in the graphic) can deal with the problem bottom-up. Terrorism and transnational crime are classic complex problems, and for this reason they are thorns in the side of centralized, reductionist modern bureaucracies. Fusion cells and task forces excel against these complex problems, but these structures must grow at the expense of the core bureaucracy. The key strategy for the efficiency half of the organizational script is the conversion of a bureaucracy into fusion cells.

**Efficiency: The Crystal-Smoke Spectrum.** This efficiency script plays out on the canvas of organizational structure. In order to create a functional model of change, we will build a spectrum of organizational design, and then explore movement along this spectrum in accordance with our ‘market-seeking’ script.48 Biophysicist Henri Altan provides a template for this spectrum with his work on complexity theory. He describes all systems on a continuum no human system can be truly reduced, therefore specified and reductionist answers are simplified ontologies rather than true ones. However, building on George Box’s classic quote, “all models are wrong; some models are useful,” methods provide functional, usable knowledge about social phenomena rather than an accounting of the true social world. The key is to determine if simplifying the complex into a complicated or simple world gains us more analytical purchase through clarity than it loses through reduction.

from crystal (perfect simple structure) to smoke (random individual motion.) Natural systems include a combination of the two – chaos allows for motion but also creates entropy, while structures stabilize the world, manage entropy and allow the system to make use of that motion.

Social groupings are subject to these dynamics, as any functional organization is composed of some mix of individual agency and relational structure. Without agency, there is no innovation, but without structure, there is no stability. Hierarchic organizations emphasize structure, and hence deliberateness, at the expense of agency and adaptability. Flat structures maximize the space for free association, and sacrifice some degree of stability for maneuverability. These structures tend to be risk-tolerant and structurally resilient, but vulnerable to viruses and relatively higher levels of errors. Flat structures typically have shorter time horizons, as information moves virally through low-level interpersonal connections, and the individuals in those conversations cannot effectively project futures beyond their short-range networks. Hierarchies ostensibly have longer time horizons, as holistic analysis of policy is theoretically possible. That said, if there is a significant delay between policy formulation, implementation and impact assessment, the world for which the policy was optimized might vary greatly from the world in which it is realized.

Both flat and hierarchic structures require a coordinating principle to maintain organizational


50 This is broadly derivative from the first two laws of thermodynamics, and the impossibility of pure order or pure chaos echoes the third law.

51 In this, they approximate Scale Free and Small World networks.

52 For this reason, venture capital firms and tech startups tend to prefer these structures – a high failure rate is acceptable when successes make far more than failures lose. Conversely, a hierarchy is brittle and slow but deliberate, due to its many veto points. This makes sense when the cost of failure is very high, as in designing a line of cars. Many firms adopt hybrid structures, with innovation- or experimentally-focused tasks conducted in small, flat teams and production or conventional tasks done with hierarchic management; the flat Lockheed Skunk Works embedded in the larger hierarchic corporation is an example.

53 China’s one-child policy and present demographic crisis comes to mind here.
integrity. In flat organizations, where agency predominates, individual incentives coordinate the actions of teammates relative to each other; the creative instinct, task accomplishment or compensation all work collectively to keep the organization moving in the right direction. In hierarchic organizations, the command principle recognizes the predominance of structure – social control attempts to direct the whole of the organization toward specified ends.\textsuperscript{54} In general, hierarchies enjoy excellent economies of scale when performing complicated tasks (provided those tasks have been modeled correctly,) but flat organizations have the context and maneuverability to deal with complex tasks.

![Figure 8: Bureaucracy-Market Organizational Spectrum (Author.)](image)

We can understand the ‘crystal-smoke’ spectrum through a number of organizational ideal

\textsuperscript{54} There are a number of inherent problems with this coordinating principle (as there are with incentives) – \textit{quis custodiet ipsos custodes?} (‘who watches the watchers,’) incentive problems and information problems. A command structure is still full of people, and they still respond to incentives. However, our purpose is not to critique command economies, and will table this discussion.
types ranging from hierarchic to flat networks.55 ‘Pure Hierarchy’ replicates a common structure from the top to the bottom of the organization, with lines of communication primarily moving down chains of command. It is brittle and optimized for one specific task – because it is a simple fractal,56 it requires re-engineering the ordering principle of the whole organization to create change. A true pure hierarchy is a theoretical ideal type. In practice, since humans have diverse agency, a pure hierarchy cannot hold together.

What likely happens instead is a ‘Fractured Hierarchy,’ which yields a number of brittle organizations, each inflexibly structured around a specific principle and populated by like-

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55 While the data generally do not support a robust hypothesis test using formal social network analytic metrics, it is helpful to formalize our definitions of ideal types in order to specify our assumptions. Like most specifications, this breaks down at the extremes, but I propose three formalizations, which are not axiomatically identical but do functionally overlap for our purposes.


2) Using the small-world measure (ω), we can compare the average path length of the network to a random network (a fractal hierarchy maximizes path length, a small-world flat network minimizes it) and the clustering coefficient to a lattice network (the flat networks tend to be more clustered.) Qawi K. Telesford et al., “The Ubiquity of Small-World Networks,” *Brain Connectivity* 1, no. 5 (December 2011): 367–375, doi:10.1089/brain.2011.0038.

3) As a rough but easy to implement measure, we can use the average number of ties per node, as the flat network will tend in the aggregate to have more lateral ties. This is a rough measure, because in a flat network, there is an unequal distribution of ties per node (hubs have more; this is what makes them hubs.) The fractal hierarchy has a minimum number of ties, as it does not possess lateral ties. This is a brute force, inelegant measure; however, it does operationalize the simple fact that flat networks generally have more connections than hierarchic ones, and it is easy to determine with incomplete information. However, it will tend to be inflated under imperfect information for flat networks, as hubs are easier found than low-connectivity fringe nodes.

Interestingly, this highlights a trend that flat networks require more connectivity than hierarchic ones, and therefore the cost of building ties is tied toward vertical development. This broadly checks with our corollary derived from Shapiro that increasing security costs drive down the number of possible ties, which in turn yield hierarchic structures – in effect, fractal hierarchy is the most Spartan structure that keeps all players connected with a minimum number of links. The FLN used this structure for exactly this reason during the Algerian Civil War – with a simple fractal, one down link and two up links, a captured insurgent had to only resist for a brief period of time until the network could hide or replace those three individuals. After this, they could break and reveal everything, as the information would then be useless. Discussion, Remy Mauduit, 2006.

56 A fractal is a shape that is self-similar, or displays similar geometry at large and small scales. In this case, a constant geometric number of downlinks and one uplink yields a pyramid at any magnification. More complex fractals may approximate more natural shapes. Benoit Mandelbrot, *The Fractal Geometry of Nature* (New York: W.H. Freeman, 1983).
minded adherents. This is a dysfunctional structure, as coordination and reform are very
difficult, and barriers to entry are quite high. This fractured structure may also be a symptom of
a collective action problem, where there is not a clear hegemon in the organizational space; each
group attempts to provide a stand-alone solution, but none are large enough to accommodate the
diversity required to accomplish the task. Ironically, a hegemon solving the collective action
problem allows for more effective diversity, as coordination allows different organizations to
specialize within the larger framework.

One step down from ‘Pure Hierarchy’ is ‘Audited Hierarchy.’ In this structure, there is one
primary chain of command for the organization, and an alternate auditing chain of command
whose incentives are to monitor the primary chain. Tullock ascribes the effectiveness of the
Imperial Chinese bureaucracy to such a structure – the corps of ‘censors’ served as a check on
graft and drift.57 This is still primarily a command system, but incorporates elements of
incentives, as the auditors are oriented against the primary organization.

‘Hierarchic Teams’ is the next step on the slider. The fundamental principle of vertical
development remains, but low-level lateral ties provide multiple routing options for front-line
operators. Instead of the higher tiers of the organization solely dominating processes, this
structure makes some space for conversations amongst peers in lieu of direct tasking as a means
of problem solving. Functionally divided organizations can exhibit these structures, as
specialized production tends toward the formulaic rather than the creative. Theoretical
organizational charts for many organizations in the United States federal government have a
‘Hierarchic Team’ character, though actual communications flows may be flatter.58

58 “The Org Chart Is NOT The Org.” Aaron E. Silvers, accessed November 28, 2013,
Continuing toward the ‘smoke’ end of the spectrum, ‘Task Forces’ flatten the organizational structure further. Within the Task Forces, conversation and collaboration are the dominant forms of problem solving. Since task forces are structured around often-fluid problem sets, they are not locked to a specific organizational principle, and can perform *ad hoc* restructures. The members of task forces retain formal titles, but are flexible in the interpretation of those functions. Accordingly, task forces are less efficient at specific fixed tasks, but more flexible. They tend to make more mistakes, but those mistakes are smaller and they recover quickly from them. However, task forces have specific boundaries, and are best overlaid upon natural fissures in larger problem sets.

Further down the spectrum is the ‘Network Institution.’ There is still a discernable vertical structure to this organization, but the path length between the highest and lowest member of the institution is very low. This structure may still have titles, but the titles serve as ‘holding categories’ and are largely nominal. Conversation is the sole language of problem solving, and social relational power dominates formal power. Invocations of formal power distance\(^{59}\) are ineffective and out of place. Ideas can flow quickly with few impediments, but due to the reliance on consensus, it is difficult to impose a deliberate vector on the institution. An organized crime family may take this structure.

The last functional structure is the ‘Scale-Free Network.’ While the Network Institution enjoys embedded network dynamics and in many ways approximates this structure, there is no formal hierarchy discernable in a Scale-Free Network. There is, however, a hierarchy of relational prestige. This structure describes an open market space, free social association, and

natural social topologies like the Internet. Imposition of a strategy is impossible, but movement through innovation, adoption and consensus happens very rapidly with low barriers to communication. ‘Grey market’ crime may take this structure, and may exist informally or in pockets within formal institutions.

If chaos completely overwhelms the fixed structure, the organization devolves into ‘Incoherent Clusters.’ Agency is total, but ineffectual – there are no barriers to entry, but there is so much disorder that ideas cannot reside long enough in one place to do much of anything. Without any structure, ideas are ephemeral. Ironically, too much agency is functionally equivalent to too much structure – no meaningful progress is possible. For this reason, Sean Everton’s counter-dark-network strategy seeks to push a malign network to either extreme of this spectrum and thereby render it neutered.

Two key zones along this spectrum frame the organizational script. On the right side, the ‘Bureaucratic Zone’ includes high hierarchic forms characteristic of governmental institutions. In these, stability dominates innovation and structure dominates agency. Sensemaking happens through formalization and coordination; while this process is predictable, it is relatively slow. On the left side, the ‘Market-like Zone’ describes flat network structures and institutionally embedded markets characteristic of asymmetric adaptive systems of actors. Incentives and emergence are the engines of these organizations; sensemaking happens through viral diffusion.

Both types of organizations can exploit vulnerabilities in the other’s sensemaking process.

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60 Barabási, Albert, and Jeong, “Scale-free Characteristics of Random Networks.”
61 Everton describes a spectrum between ‘too cosmopolitan,’ or relatively too many weak ties, vs ‘too provincial’ or relatively too many strong ties. The former is too much like smoke, the latter too much like crystal. Everton, *Disrupting Dark Networks*. 
The availability heuristic\textsuperscript{62} could be manipulated to create versioning problems and overreactions in the flat network – since scary events like air crashes tend to move virally through social networks out of proportion to their actual risk, particularly cognitively ‘sticky’ tactics might provoke strategically foolish responses. Conversely, a flat network can take advantage of the hierarchy’s information formalization costs – a continuous stream of minor low-level changes will induce analytical hyperventilation on a bureaucracy. A mid-range structure could mitigate these vulnerabilities, but it would have to manage the tension between formal and relational social capital amongst its members.

\textit{Efficiency: the Market-Seeking Script.} Advantage goes to the side whose structure best fits the problem at hand – complicated problems are best solved through formal coordination, and the hierarchy does well at these. Complex problems change too quickly for these measures, and require too much coordination, so these favor the quick diffusion and innovation of flat ‘market-like’ structures. The thorniest transnational illicit markets are complex, and therefore require ‘market-like’ organizations. (Markets with specific vulnerabilities might be treated as complicated rather than complex problems, and may require less ‘market-like-ness.’\textsuperscript{63}) Since the suppression attempt typically begins with relatively bureaucratic structures imported from governmental institutions, the organizational change script requires the suppression regime to move from right-to-left along this spectrum seeking market-like structures.

When most complex suppression campaigns begin in earnest, they typically begin in the ‘bureaucratic zone.’ This may be preceded by a fractured phase before initial collective action

\textsuperscript{62} I prefer the idea of the ‘Batman Effect,’ where fear becomes a virus through a criminal network, generating disproportionate responses. Ori Brafman and Rom Brafman, \textit{Sway: The Irresistible Pull of Irrational Behavior} (Broadway Books, 2009).

problems are solved – the ‘NGO scramble’64 may cause the campaign to waste time in this ‘phase zero’ with competing donor-impressing theatrics in lieu of a coordinated strategy. Therefore, the first organizational challenge for the campaign is to solve this collective action problem. As predicted by Mancur Olsen, the most common solution to these sorts of large-scale coordination problems is a hegemon providing collective goods.65 In the case of suppression, states have the resources to perform these ‘governance of the commons’ tasks. Accordingly, they generally become the hegemonic solution and import with them their bureaucratic structures.

The collective action problem could also be solved through institutions between a manageable numbers of partners.66 This could be enacted through networking technologies institutions, which would allow the suppression regime to skip several of the bureaucratic phases along the script toward ‘market-like-ness.’ The combination of effective institutions, inexpensive communication, broad civil society support and fusion structures could theoretically jump straight to an ‘information ecosystem’ (or a ‘synthetic market.’)

An effective knowledge ecology is an aspirational design goal both at the outset and for the duration.67 However, I know of no case that has done this right at regime initiation, but the technologies that would make this feasible are fairly novel. Rather, synthetic markets typically emerge through trial and a great deal of error. This trial-and-error process may also turn back into a ‘support’ discussion – if organizational sense-making reveals that the initial resources

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66 Ibid.
allocated to the task are insufficient, it should trigger a ‘support check’ to increase resources to an adequate level. This unstructured process is the meat of the organizational script.

Organizational, cultural and technological innovations advance the suppressor along this market-seeking script. Technologies that lower the cost of connectivity allow the organization to build the large numbers of lateral ties that create ‘market-like-ness.’ Cultural constructs that reconcile different institutional cultures together also lower the cost of lateral ties – a fusion cell is useful both as a cultural commonplace and as an information hub, and the commonplace allows for the effective sharing of information. Organizational design is the most direct way to advance, but market-like structures exist in actual communication rather than on the formal organizational chart, so redrawing the chart is less effective than building times and places for conversation.

Using concepts from Padgett and Powell’s *Emergence of Organizations and Markets*, one of the best ways to quickly advance toward ‘market-like-ness’ is to transpose existing flat networks. Transposing an existing network, accreting networks from geographic proximity, hybridizing a network with another, using commonalities or taking advantage of shared disruption all provide for rapid organizational change. These mechanisms prove effective in our historical cases. The Coast Guard’s officer corps during the prohibition era was such a small world that each leader knew, or at least knew of, each other personally. Because of this, ideas could flow quickly and directly, especially as the Intelligence Office became a clearinghouse for

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68 This is transposition from Padgett and Powell. Padgett and Powell, *The Emergence of Organizations and Markets*.
69 Ibid.
70 USCG Historian’s Office, Interview, Fall 2013. McChrystal describes a similar experience in using small, elite teams with strong trust as a condensation nuclei around which the interagency process coalesced. Stanley a McChrystal, “It Takes a Network,” *Foreign Policy*, April 2011, http://www.foreignpolicy.com/articles/2011/02/22/it_takes_a_network.
the service’s structured brainstorming. This is the mirror image of the kinship-based Mafias – groups of friends or trust networks from outside the institution can become organizational flatteners if harnessed correctly.

While the suppressor moves leftward on the crystal-smoke spectrum, effective suppression causes the illicit market to move rightward. Just as decreasing costs for lateral ties cost allows the suppression network to flatten, increasing tie costs due to security concerns forces the illicit market to develop vertically. As the suppressor closes the distance between these two organizational structures, their relative innovation cost decreases. This takes the edge off the terrible cost exchange ratios inherent in state battles against asymmetric adversaries, and stretches support dollars farther along the operational progress script.

Where the support half of the organizational change script provided background, the efficiency half of the script is the foreground. Since the support reservoir changes somewhat unpredictably, the suppressor’s best strategy for this script is to pursue market-seeking reforms as quickly as they can without fracturing their organization. Progress along this script should yield more rapid system shocks against the illicit market, and a shorter half-life illicit innovation.

**Scripts as Strategies.** As described in the beginning of this section, we will test the correlation between these scripts and congruence with expected outcomes against our universe of cases in the next chapter. If this large-n test validates these scripts, policymakers can use them as strategies. We are testing to see if market-seeking organizational changes predict increasing effective control of the market domain, and if that control in turn translates to demand change over the long run. Ideally, market-seeking organizational reforms and a mix of patrol,

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71 NARA RG 26, Entry 178, Correspondence of CAPT Root, 1924-1930.  
72 Padgett and Powell, *The Emergence of Organizations and Markets.*  
73 Crenshaw, Martha; Critiques given to author at Stanford’s CDDRL presentation on Anti-Trafficking data ecosystems. Spring 2012.
interdiction and demand-side interventions should maximize a suppression regime’s chances of success. If it does, it makes good sense to pursue both scripts with all due haste in regime design.

The organizational imperative is twofold – first, **build robust partnership deep into civil society to sustain a movement that can in turn support the campaign.** Second, **pursue partnerships and market-seeking reforms with all haste.** The operational imperative is threefold – first, **effectively patrol the market domain in order to inject unacceptable risk into ‘grey’ marketplaces.** Second, **interdict illicit coordination mechanisms to make communications as costly as possible for the illicit network.** Finally, **set the conditions for the emergence of replacement markets, and foster them when they appear.** Accomplishing these tasks should accelerate entry into the demand restructuring ‘end zone.’ Holding in this space as long as possible allows the suppressor to maximize lasting change through ratcheting effects until support runs out or the illicit network is completely eradicated.

MICRO TESTING: SHOCKWAVE SIGNATURE IDENTIFICATION.

The microscopic level examines these processes using fine-lensed process tracing approach with four representative matched cases. Progress along the macro scripts happens in fits and starts – to borrow a term from biology, competitive adaptation yields ‘punctuated equilibria.’ One side innovates an intervention that disrupts the present form of their adversary, which will yield effects only until their adversary adapts and changes form. Therefore, we will search for

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74 Path Dependencies and Organizational Context likely drive the possible speed at which these reforms can happen – for instance, a very small Coast Guard during Prohibition can turn quicker than a much larger US Army during the counter-IED struggle. Times of organizational change make reform quicker, as do effective reformer networks. These determinants are very significant for policy planning, as they may indicate levers for change or best-fit institutions for suppression. However, if one tries to solve the whole world, they end up solving nothing; hence our theory testing focuses on validating the tie between organizational efficiency and operational progress. Follow-up work might explore the determinants of organizational efficiency.

the observable implications, or ‘signatures’, of these competitive mechanisms at work in each of these cases. A dark networks approach is the most profitable route to this end.

The key to this approach is the use of system shocks to trace the network impact-response cycle – a successful intervention should create an identifiable ‘shockwave’ pattern. Rather than relying on algorithms which require fully specified networks, this technique uses the network’s own response as a diagnostic. We will use the rich data from our two historical cases to calibrate our signatures, and then search for those signatures in contemporary cases where we do not have the luxury of reading both sides’ mail.\textsuperscript{76} We should expect that an intervention causes an immediate, localized effect which spreads through space over time across network links. Since networks recover from damage, we would also expect a recovery pattern following an intervention pattern. This shock-diffusion-recovery sequence results in a ‘shockwave’ signature.

We will select two cases for a fine-tuned approach that focuses on these signatures – the British West Africa Squadron campaign the slave trade (1808-1867), and the US Coast Guard’s actions in the Prohibition-era Rum War (1924-1936.) These historical cases provide the majority of analytical heavy lifting; in a battle over competitive sensemaking, it is quite helpful to be able to read both sides’ correspondence. We will use the rich data from our two historical cases to calibrate our signatures, and then search for those signatures in contemporary cases where we do not have the luxury of reading both sides’ mail.\textsuperscript{77} A number of contemporary mini-cases – the

\textsuperscript{76} Understanding the case through the terms the players themselves used respects historians’ scruples about not doing violence to context. Within-case statistical methods are particularly useful here, as are operations research econometric methods. In effect, we could imagine ourselves as a statistics-equipped time-traveler advising each case’s respective ‘admiralty’ – we take the cases on their own terms, but we bring complete data and quantitative methods to bear on those terms.

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campaign against Somali Piracy, Colombia’s war against Pablo Escobar’s cocaine empire, and the Virtual Global Taskforce’s campaign against online child abuse – allow us to check these signatures against known impacts on policy-relevant illicit networks.

In this section, we build on the coarse method from the macro model with additional analytical tools. As before, we will trace the parallel operational and organizational scripts through the timeline of each case. Also as before, we will use the same theory-mechanism-correlation framework to test our model against competing hypotheses. These rich cases present an excellent opportunity to explore the shocks, stalls and reversals that differentiate the Boxer model from alternate hypotheses. In order to rigorously examine these patterns, we will use within-case operations research methods to identify ‘shockwave’ signatures characteristic of measure-countermeasure duels.

Spatially, a shockwave should register as a ‘splash’ pattern, akin to ripples in a pond, that moves out through the network with diminishing force. Areas with strong connectivity should conduct the shockwave strongly, whereas ones with low connectivity should be unaffected or could perhaps even benefit by filling the void left from the shock. Geographic Information Systems provide a platform to identify ‘splash’ patterns and longer-term displacement in both of our historical cases.

Chronologically, the shockwave should register in time-series data as a downward-pointing ‘sawtooth’ pattern, with deep initial impact that diminishes with time. These shapes can be tested using statistical tools. A positive result for both initial impacts and the network recovery provides strong support for the ‘Boxer’ model. As an added benefit, if these ‘shockwave’ signature analytic tools hold, policy-makers can use them to trace network topology and capacity during contemporary cases.
Case Selection. These cases capture the spectrum of suppression outcomes, the most historically significant cases, the most significant present policy problems, and the best datasets available on this topic. The combination of historical cases and contemporary cases uses retrospective richness in data to compensate for the deep data problems inherent in active cases. Since both historical and contemporary cases include illicit practices (slavery) and illicit goods (psychoactive substances,) we cover the swath of suppression targets. In choosing some of these most difficult cases for suppression, we are calibrating our model against the thorniest problems – this model is then a ‘worst case’ approach. In the final section, we will explore the universe of suppression cases to determine when simpler approaches might fit the bill.

We proceed using Van Evera’s case selection criteria:

Data Richness/Research Viability. Historians describe the two historical cases with tremendous richness. Beyond secondary sources, the Atlantic Slave Trade is extensively documented in the recent Trans-Atlantic Slave Trade Database (‘Voyages Database.’)\textsuperscript{78} The Rum War is similarly well documented, with strong primary sources in the recently declassified archives of the Coast Guard Intelligence Service.\textsuperscript{79} These databases provide an excellent window into the responses of an illicit network to suppression. Conversely, the modern cases have significant data problems; since this is endogenous to the competitive sensemaking contest; this is what we would expect. For this reason, the historical cases carry the brunt of the signature testing.

Extreme Values on Variables. The two historical cases bracket the spectrum of suppression outcomes. The British suppression of the Atlantic Slave Trade is the clearest example of a victory against a transnational illicit market; Prohibition, in popular usage, is a byword for a

\textsuperscript{78} D Eltis, “Estimates of the Size and Direction of Transatlantic Slave Trade,” \textit{Slavevoyages.org} (n.d.); David Eltis and David Richardson, \textit{Atlas of the Transatlantic Slave Trade} (Yale University Press, 2010).

\textsuperscript{79} NARA RG 26, Box 178.
failed suppression campaign. In both cases, the outcome was less extreme than the popular remembrance holds. The Atlantic Slave Trade was replaced in part by the ‘Coolie Trade,’ roughly akin to modern labor trafficking.\textsuperscript{80} Prohibition made an indelible mark on American drinking habits, with the \textit{per capita} drinking level remaining below pre-Prohibition levels until the 1950s at earliest.\textsuperscript{81} The outcomes of contemporary cases are not yet decided, but all four cases have comparatively high levels of effort directed at them.\textsuperscript{82}

\textit{Large Within-Case Variation.} All four of these cases (with the possible exception of human trafficking) waxed and waned during their course. This is partially due to the long duration of each case – the British suppression effort ran from 1808-1867; the Rum War conservatively from 1924 to at least 1935; and the ‘War on Drugs’ since 1971 at latest. Moreover, each case includes useful geographic variation with different strategies in different regions – for instance, both sides conducted the Rum War’s Pacific Northwest campaign quite differently than the main effort on the Easter Seaboard.

\textit{Useful Theory Contrast.} All four cases also invoke the power of regimes, norms and force. For instance, the British suppression effort included a norm-driven economic restructuring campaign in Sierra Leone, Lord Palmerston’s muscular military interventions,\textsuperscript{83} along with an extended diplomatic treaty-building campaign. Prohibition activists tried moral suasion alongside legal levers (fairly unsuccessfully,) while the State Department worked to build multi-lateral enforcement and information sharing treaties. Each of the alternate hypotheses is active in each

\textsuperscript{80} Davis, \textit{Inhuman Bondage}; Meagher, \textit{The Coolie Trade}.
\textsuperscript{81} Okrent, \textit{Last Call}; Jeffrey A. Miron and Jeffrey Zwiebel, \textit{Alcohol Consumption During Prohibition} (National Bureau of Economic Research, 1991), http://www.nber.org/papers/w3675. 11. We will explore the ways in which Prohibition altered drinking habits with regard to gender, type of alcohol consumed and context of consumption in the case study chapter.
\textsuperscript{82} An ineffective complex case with a low level of effort is uninteresting, and there are no effective complex cases with a low level of effort.
\textsuperscript{83} Rees, \textit{Sweet Water and Bitter}.
of the cases; since the ‘Boxer’ theory synthesizes these theories, we can test if any of these theories alone accounts for the variation and could therefore falsify our theory.

*Representative/Illustrative.* As noted, these campaigns are representative of the hard cases that motivate our model. This choice may result in over-engineered solutions for simpler suppression campaigns. For this reason, the Macro testing section will consider which sorts of problems and conditions problems lend themselves to simpler solutions.

*Intrinsic Significance/Policy Relevance.* The Atlantic Slave Trade is a defining feature of Atlantic history. Prohibition occupies a central place in any discussion of illicit market suppression. The mini-cases explore episodes from the contemporary counter-Trafficking in Persons and counter-narcotics campaigns, which serve as icons of emerging and enduring transnational crime problems respectively.

Together, these campaigns stake out the core territory of our question.

*‘Shockwave’ Signature Testing.* The extended time period and high-resolution datasets of these cases lend themselves to within-case quantitative analysis. If the ‘Boxer’ model holds, the measure-countermeasure duels between the two networks should yield shock-response patterns. In order to identify these patterns, we will the concept of ‘boundary spanning’ from Social Network Analysis with the Interrupted Time Series method from statistics.

Mathematically equivalent to a Regression Discontinuity, the Interrupted Time Series model tests the significance of a system shock at a specified point in time.\textsuperscript{84} If a posited intervention is effective, it should cause a rupture between the trend lines preceding it and those following it. This provides the downswing of our posited measure-countermeasure shockwave.

\textsuperscript{84} McDowall et al., *Interrupted Time Series Analysis.*
The recovery upswing of this signature comes from the network repair and re-routing. ‘Market-like’ social networks excel at ‘boundary-spanning’ (finding ways through barriers) and self-repair.\textsuperscript{85} As soon as the target market detects a successful measure, it will attempt to devise a countermeasure. Since network diffusion happens exponentially, this recovery pattern should be a geometric curve. However, there was some reason that the illicit market was previously using the original model rather than the countermeasure. Therefore, these countermeasures are come at the cost of sub-optimal models, yielding a longer-term residual impact that lasts past full countermeasure diffusion.

The suppressor can typically deliver more powerful interventions on the illicit market than vice versa. The illicit market, so long as it remains more ‘market-like’ than the suppressor, enjoys a superior response cycle. Its recovery upswing from the shockwave is stronger, and it identifies successful measures being used against it more quickly. Formal bureaucracies may have a difficult time identifying when they are being countered effectively – in order to do so, they need a means of detecting anomalies in their formal models.\textsuperscript{86} Flat networks implicitly adapt through natural selection even before consciously countering. We therefore expect a shape with a near-vertical down-stroke, a sloped upstroke, followed by similar shapes in series. In the aggregate, we would expect these reciprocal shockwaves to create a ‘saw-like’ pattern (as below in the British case.)


\textsuperscript{86} This is akin to Receiver Autonomous Integrity Monitoring (RAIM) in the Global Positioning Satellite system – by over-determining a solution, we can check if an element of the solution is flawed. In conversation with Dr. Sitterle, our best approximation of a RAIM for a bureaucracy is overlapping but not identical mental models – if the shared situational awareness model represents the system well, these conversations will be synchronized, but if the system changes, it should register as discord in these conversations. Personal Conversation, Strategic Multi-Layer Assessment Conference, Fall 2013. For RAIM, see R. Grover Brown, “Receiver Autonomous Integrity Monitoring,” \textit{Global Positioning System: Theory and Applications} 2 (1993): 143–165.
This approach provides an avenue to defeat the endogeneity inherent in researching dark networks. Since physical measures of success against a dark network include a measure of adversary agency, it is difficult to tell whether a decrease in captures or seizures is an indication of effectiveness (more crime being deterred) or ineffectiveness (less crime being caught.) Conversely, network health measures in the social world tend to track monotonically with success or failure. However, it is difficult to determine the structure of the social world in a state of equilibrium without directly monitoring social ties. As opposed to a network controlled experiment or a cooperative snowball sample, non-compliance from the dark network is virtually guaranteed. In order to get around this problem, we can observe the effects of changes on the structure rather than directly monitoring its internal workings. Shockwaves disrupt that equilibrium, allowing us to use the system shock itself as a sonar ‘ping’ to trace this structure.

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87 As shorthand, I broadly divide the field of dark networks into two approaches, 1) the algorithmic-computational approach led by Kathleen Carley out of Carnegie-Mellon University, and 2) the heuristic-ideal-typical approach led by Wilson, Roberts and Everton out of the Naval Postgraduate School. This approach belongs in the latter camp. I am specifying an ideal-typical signature and looking for it in the data, rather than attempting to actually specify the network itself. I hold that if one had adequate data to fully specify the network, we would have so much intelligence that the dark networks key player problem would have already been solved. In a world of reasonably complete big data, pairing Carley’s approach with genetic algorithms may be a better approach; the NPS approach better matches current practice. By matching observable results during a shockwave to a specific ideal type, we can reason about the actual network and determine ideal structural vulnerabilities.

88 In the Prohibition case, an extensive intelligence network reached deep into rum-runner support networks, and could hence observe these structures directly.
In order to put this approach into practice, we must identify patterns characteristic of these shockwaves. These patterns will allow us to interpret network health and connectivity during the cases.

‘Sawtooth’ Pattern. In time-series data, the shockwave should register as a ‘sawtooth,’ with a sharp drop in traffic followed by a geometric recovery. Three variables define this pattern. First, the depth of the initial impact reflects on the suppressor’s ability to deliver effects. Second, the speed of the recovery demonstrates the excess re-routing capacity remaining in the illicit network. Third, since there was presumably an optimized reason the illicit market was using its original model, its re-routed countermeasure should be sub-optimal. This yields a ‘recovery deficit,’ a lasting impact for the intervention after the full implementation of the countermeasure so long as the measure is maintained.

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89 This variable may be linked to characteristic network metrics along the crystal-smoke spectrum
These three values tell us about the network’s vulnerabilities, adaptability, and ‘cornered-ness’ respectively. An attack on a vulnerable network element will register strong impacts; a well-defended or redundant element will experience less of a shock. An adaptive network will recover more quickly, a brittle network or one under strain will respond more slowly. A ‘cornered’ network will have to accept bad options as countermeasures, and will experience more of a recovery deficit. A network with good freedom of movement should be able to find an efficient counter-measure with minimal residual cost.\textsuperscript{90}

During the recovery period, the sense-making faculties of the illicit network are actively trying to identify alternate models; this makes them vulnerable. During this period, change agents and other key players that might otherwise remain latent can be identified through increased message traffic. The heuristics by which the illicit market makes sense of the world also become apparent and hence targetable. Additionally, the effort of re-booting stresses the

\textsuperscript{90}This is assuming previously optimized choices. It is possible that the network was stuck in an inefficient path dependency, and the shock could swap them to a better option than the original model. In this case, there is a ‘recovery surplus.’ (However, it is also possible that the increase is driven by secular trends during the ‘sawtooth’ period, yielding a new baseline.) The recovery speed is driven by organizational learning efficiency; the recovery surplus is driven by how much demand is willing to pay in order support the new model, it therefore roughly maps onto the support variable. However, since these factors are intertwined with competitive sense-making, this is not a perfect transposition.
network. Therefore, during this re-booting period, the illicit network is vulnerable. In order to take advantage of this vulnerability, the suppression regime must itself be able to make sense of the newly dynamic situation.

A fourth variable, the ‘refractory period,’ describes the amount of time before the suppression regime can re-orient itself and effectively attack the restructured illicit market. This variable is driven by the relative organizational effectiveness of the suppression regime. If the regime can reduce its own refractory period while increasing the illicit recovery speed, it can begin to strike the illicit network during the recovery phase. This allows the regime to arc the overall ‘saw’ shape downward, ideally inflicting catastrophic damage on the illicit market.

If we identify this shape in our data, we have a clear indication of the network competitive adaptation and sensemaking processes at the core of the ‘Boxer’ model. In order to test for these shapes, we will use two statistical models. If the competitive adaptation occurs primarily in series along one axis of contestation, as in the British case study, we can use an Interrupted Time Series model. For this model, we will use physical indicators as our dependent variable, relative time to/from each intervention as our time variable, and we will control for secular time. If the process happens in parallel along multiple simultaneous axes, as in the Rum War case, it becomes more difficult to isolate a specific pattern. In this event, we will determine the effect of organizational structure on the effective lifespan of interventions using a qualitative survival model – an efficient organization will answer a new enemy tactic with a counter-tactic relatively quickly, and an inefficient one will languish without a counter for an extended period.

‘Splash’ Pattern. In geographic cross-sectional data, the shockwave makes a ‘splash’ shape. Where the ‘sawtooth’ pattern uses temporal autocorrelation to infer impacts and connectivity

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91 McDowall et al., *Interrupted Time Series Analysis.*
within the network, the ‘splash’ pattern uses spatial autocorrelation to do the same. This method is based on the geographic diffusion of effects through a network. Areas that are part of the same cluster as the root intervention should similarly experience disruption through damage transfer; areas which belong to linked clusters should have the opposite effect through crime displacement.\textsuperscript{92} Unlinked clusters should experience no immediate change.

![Figure 12: 'Splash' Differentials (Left) & Inferred Connectivity (Right)](image)

In the above hypothetical data (map on the left,) we see an initial intervention in the center district. This intervention causes a decrease in the measured indicator in the target district, as well as in the district to its immediate north. However, two districts to the northwest and two districts to the southeast experience an increase in the indicator. A district to the northeast experiences no change.

These differentials allow us to infer relationship between the geographical sub-divisions (map on the right.) The two districts whose indicators decreased register linked damage due to the intervention. This indicates strong ties within a disrupted cluster. The districts whose indicators increased following the intervention are weakly tied to the target district; they are able to use their intact clusters to pick up much of the load of the disrupted cluster. Note that this

does not imply affinity; rival groups can be weakly linked, so long as they are functionally similar and have some degree of information flow. The district that registered no change shows a lack of connectivity, perhaps indicating an environmental unsuitability to the indicator or an unlinked, independent market.

This approach is an improvement over traditional displacement models, as it takes into account social space rather than solely geographic space. In order to statistically implement this approach, we use a geographic information system to analyze geographic autocorrelation of post-intervention change. Comparing differences between regions of comparable distance from the target intervention helps control for simple geographic diffusion.

‘Shockwave’ Operational Applications. Just as policymakers might use the macro model’s scripts as strategies, the micro model’s signature analytic techniques can be used during active cases for operational assessment. The characteristic shapes can be used to assess network health during an active case, similar to our application of the technique in this project. This technique becomes far more interesting, though, if partnered with operational design and planned interventions.

In a ‘stress to assess’ approach, a suppressor can identify illicit vulnerabilities by probing the links a supply chain. First, the suppressor should pull a supply chain taut by placing the network under stress by maintaining an elevated level of general suppression. This reduces the degrees of freedom in which the illicit market can move, which isolates and dampens the adaptive faculties of the illicit market. Then, provided they have an adequate model of the illicit supply chain, the suppressor should probe each step in the supply chain, and see which steps have the most ‘give.’ Deeper impacts and slower response rates highlight specific vulnerabilities, as key categories of players or resources are harder to replace.
A secondary means of identifying vulnerabilities during a ‘stress to assess’ approach uses the market’s price information against it. As before, we strain the network with general suppression to soak up excess adaptive resources. We then look for changes in street prices for different goods or skills used in the illicit supply chain. The scarcest players should have the highest brokerage within the supply chain, and therefore should be able to extract the highest prices for their services. Therefore, by observing component prices, we can identify difficult to replace elements of the supply chain.

Simply, attack the expensive things. This should make those things even more expensive. However, this creates a countervailing force, as this premium will eventually draw more supply if unmolested. Depending on the lead-time required for replacing the skill or good, there is a window of vulnerability before these skills can be replaced. If the suppressor can attack these weak links hard and fast enough, they may force the market to re-map onto a different (and ideally less efficient) business model.

These tools can also support dynamic sequencing strategies. A key takeaway of the ‘sawtooth’ waveform is that the illicit network is vulnerable while it is re-booting. By identifying the heuristics the network is using to identify a new path, these heuristics can then be exploited during future attacks. For instance, if the network is using simple natural selection as its heuristics, selective targeting can drive the network toward sub-optimal configurations or toward structures vulnerable to specific follow-up attacks. Alternately, if the network uses conversational viral diffusion as an adaptation technique, suppressors can inject noise into these conversations through spurious information.

93 Conversation with Elisa Bienenstock, Fall 2012. The Shapley value from an n-party game should map onto the point of highest brokerage from a directed network with discrete categories that comprise that game’s ‘win set.’ Therefore, component price should be a guide to supply chain vulnerabilities. Lloyd S. Shapley, “A Value for N-person Games,” *The Shapley Value* (1988): 31–40.
If the suppressor can front-load follow-up interventions, they can do geometrically more damage to the target network. Using a ‘one-two punch’ technique, if a suppressor can anticipate probable counters to an intervention, they can prepare interventions for the counters as well. A similar, smaller-scale ‘avalanche’ technique holds ready reserve forces for rapid follow-on interventions using information gained from the primary intervention. By placing the illicit market behind the power curve, the suppressor can retain the initiative and drive the overall contest toward terms that favor them.

![Figure 13: 'Sawtooth' Area Under the Curve](image)

Determining the specifications of the ‘sawtooth’ model within a case can support force allocation strategies. Since the area under the sawtooth (as above) determines the total damage inflicted by an intervention, a suppressor can determine whether it is more cost-efficient to focus on the intervention itself (the magnitude axis) or the effective duration of the intervention (the ‘half-life’ axis.) If interventions have historically been shallow, but long lasting, it makes sense to allocate effort toward improving the intervention. Conversely, if the interventions are very effective but decay quickly, then delaying adversary adaptation would be more helpful. As a conjecture, more operators should improve the magnitude of the intervention, and more intelligence should increase its half-life.

**CONCLUSION: CONNECTIVITY BEGETS CONNECTIVITY.**
In this chapter, we have reformulated the ‘boxer’ model as two scripts as a means of testing the model. The operational progress script expresses the ‘theory of victory’ from the previous chapter as sequential contests. First, the suppressor patrols physical space, which forces the illicit market to organized. This moves the contest into social space, where the suppressor attacks the coordinating structures of illicit organizations. If both tasks are successfully pursued, the suppression campaign moves into cultural space by catalyzing demand restructuring.

The organizational reform script underwrites the operational progress script. Regime support sets the backdrop for this contest – political support translates into resources to continue the campaign. Since this changes due to exogenous shocks from time to time, we model this as a background variable except during public referenda on the campaign, or ‘support checks.’ The foreground of the organizational reform script is ‘market-seeking’ in organizational structure. In order to keep up with the adaptive illicit market, the regime will seek out flatter (and hence quicker) organizational structures.

Our testing strategy pairs a coarse macro survey of transnational illicit market suppression attempts with a fine micro analysis of four key cases. Both of these approaches use process tracing as their core method. The macro survey uses a congruence approach to determine if these two scripts track together in the overall swath of these campaigns. The micro analysis searches out specific signatures within data-rich cases which tie effects in the organizational script to outcomes in the operational script. If the ‘Boxer’ theory holds, ‘market-seeking’ organizational reform measures should accelerate innovation and hence advance the campaign along the operational script.

This is, in many ways, an old story. Connectivity begets connectivity. Effective illicit coordination across borders creates negative externalities, which in turn creates public
momentum to suppress that market. This leads to connections between various public
stakeholders in the form of regimes. Piracy leads to international anti-piracy regimes, whether
the pirates arrive as Algerine Corsairs, on Puntlandi speedboats or in cyberspace. Cross-border
terrorism leads to cross-border state cooperation, as in the case of ETA.\textsuperscript{94} Regional poaching
leads to regional counter-poaching arrangements.\textsuperscript{95} Illicit links lead toward licit coordination.

What is new about the ‘Boxer’ account is the idea that this process applies to depth as well as
breadth of connections. A successful law enforcement solution should not only cover the same
area as a trans-border illicit market, but it should also approximate the ‘market-like-ness’ of the
illicit network.

Coordination amongst the myriad Washington DC metropolitan law enforcement agencies
provides a piquant example of this story. Hundreds of law enforcement agencies co-habit
overlapping jurisdictions, resulting in tremendous cultural and technological synchronization
challenges. These agencies have long since been in nominal coordination through the
Metropolitan Washington Council of Governments.\textsuperscript{96} However, this only provided a shallow
level of coordination, which often resulted in ineffectual enforcement. One phrase bandied about
by regional law enforcement officers in the 1990s held that, “once they’re in DC, they’re home
free.”\textsuperscript{97} Fortunately, technological innovations and improving regime structure deepened these
previously nominal connections to the point where law enforcement could effectively respond to


\textsuperscript{96} Sgt. Bruce Blair, Radio System Manager of the Montgomery County Police Department, discusses the
technological and cultural coordination problems, as well as the possibility of improving coordination through the
Washingtonian}, July 1996.

\textsuperscript{97} Ibid.
the trans-jurisdictional threat of the 2002 ‘Beltway Sniper.’\textsuperscript{98} It is not just the span, but also the form of cross-border coordination that matters; a space for collaboration is more than dotted lines on an org chart.

In total, these scripts outline a strategy for fighting against a complex adversary. One cannot plan a way out of a wicked problem, but one may be able to grow their way out of it. The ‘market-seeking’ organizational efficiency script devolves authority to the front lines, while ‘support checks’ keeps the regime in the fight long enough to innovate their way forward. This allows the regime to drive the illicit market deeper into the shadows, chasing them all the way down. This, in turn, buys the space and time to build governance and better practices in the spaces previously occupied by the illicit market. We will see in our next chapters’ case studies whether or not these scripts hold.

SECTION 2: SLAVE TRADE

SECTION 2 INTRODUCTION: ALL THE SHIPS THAT NEVER SAILED.
THE BRITISH-LED MARITIME CAMPAIGN AGAINST THE ATLANTIC SLAVE TRADE, 1808-1867

A DAMNED CLOSE RUN THING.

On the 25th of March, 1807, the British Empire turned from the primary backer of the Atlantic Slave Trade to its most powerful adversary.1 Between that date and 1867, the year the last known Atlantic slave ship sailed, the British spent tens of millions of pounds and lost thousands of sailors in the course of suppressing the trade. Their foreign office bribed and pressured European sea-going powers into an international treaty network against the trade, backed by Royal Navy cruisers. Royal Navy officers built a network of treaties with leaders on the West African coast, similarly by way of economic incentives, pressure and at times, force. The British were willing to act unilaterally, even assaulting Brazilian slave ships at their moorings in the Americas.2 Amidst all of this, the perennially controversial effort faced vocal doubts as to its efficacy and social value, and was nearly called off in the late 1850s.3

The outcome of this campaign – the eradication of the Atlantic Slave Trade – is remarkable amongst illicit market suppression attempts for its clear success. The mechanisms (and frustrations) of this campaign are not. Take, for instance, this excerpt from a Royal Navy officer aboard the flagship of the anti-slavery patrol in 1845: "Here we are, on the most miserable station in the wide world … attempting an impossibility - the suppression of the Slave Trade.

We look upon the whole affair out here as a complete humbug. You may make treaties in London, and send the whole combined squadrons of England and

1 An Act for the Abolition of the Slave Trade (25 Mar 1807), 47 Geo III Sess. 1 c. 36. Online: http://www.pdavis.nl/Legis_06.htm.
France to this coast, and then you will not have gained your object. So long as a slave, worth only a few dollars here, fetches 80l or 100l in America, men and means will be found to evade the strictest blockade. The absurdity of blockading a coast 2,000 miles in extent must be obvious to the meanest capacity. Even if successful you must be prepared to continue the force forever and a day, or your labour is lost; for the moment the ships are removed, the business recommences."4

This familiar frustration is quite understandable. The mid-1840s had been a particularly frustrating decade for the suppression effort – disease continued to ravage the squadron, and a combination of poor leadership, ineffective tactics and a lack of political support combined to paint picture of a lack of progress.5

We must, therefore, answer how the British managed to prevail in an enterprise that, at the time, looked no brighter than other suppression campaigns. I will argue that, as our model predicts, the British Campaign was composed of three main phases. First, slavers operated in a ‘grey market’ by shifting their country of registry to nations with ineffective slave trade suppression measures. The British countered this effort by building a boarding treaty network, which allowed Royal Navy cruisers to board suspected slavers from sea-going Western Powers. Second, the Slavers shifted to an organized ‘Black Market,’ which moved as much enterprise risk as possible to sanctuaries ashore, while hardening the still vulnerable ships through technology and tactics; the Royal Navy, similarly, adapted tactics and technology to keep pace. Finally, the Royal Navy suppression effort supported demand restructuring on both sides of the Atlantic through a complex cocktail of causal pathways.

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5 Rees, Sweet Water and Bitter.
The key to the British success was their ability to weave (and continually mend) a regime that covered the whole of the space formerly occupied by the illicit market. The British began by targeting the most accessible nodes of the slave trade: the ships. Since ships were replaceable, this did not bring about their object directly, but it at least channelized the trade, stressed the network and forced costly countermeasures. Through trial and much error, they became willing to press the attack deeper into the supply chain with efforts ashore rather than abandon the effort. The network that defeated the slave trade’s network spanned the space previously occupied by its adversary: across the Atlantic, a maritime boarding regime included all major seagoing powers who had once been part of the trade. In West Africa, a lattice of treaties with African leaders displaced the slave trade’s coastal stronghold. Finally, in the Americas, a framework for domestic enforcement of anti-slave-trade laws backed by abolitionists attacked the enterprise at its destination.

This campaign was an emergent process, rather than the result of a deliberate, centralized strategy. This was not due to lack of trying; there was no shortage of pamphlets circulating from across the British foreign policy spectrum offering a plan for a quick end to the trade.6 These strategies typically were not so much ‘wrong’ as they were ‘fragile’ – they might work for a time against a key vulnerability of the trade, but the trade would adapt and sidestep the plan. The same held for the slavers, but market structures allowed them to trade many small losses for a few big wins. They were ‘anti-fragile,’7 in that chaos refined their business model rather than eroding it, at least at the outset.

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The British enterprise increasingly incorporated elements of ‘anti-fragility’ as the case went on. The Foreign Office made good use of exogenous events in the world to improve the treaty regime. As the Royal Navy slave trade suppression squadron grew more ‘market-like,’ especially in the 1840s, junior officers in command of the Royal Navy cruisers aggressively experimented with tactics and legal limits. Most importantly, when the British took ground, they rarely gave it back.

De-bureaucratizing the struggle was its own challenge. Royal Navy commanders and subordinates were known to tangle over the delegation of authority, and US Navy commanders sought closer partnerships with their British counterparts than their senior leaders would allow.\(^8\) On the whole, the suppression regime progressed from a centralized, fractured and top-down effort to a robustly connected network that covered the whole of the space formerly occupied by the trade. During this evolution, British cultural and political leaders sustained support for the effort with some degree of assistance from two particularly vocal Royal Navy Captains.\(^9\) I credit the British success to this ‘ratcheting’ opportunistic diplomatic strategy, aggressive innovation from its cruiser captains, and ultimately a national stubbornness about slavery that gave both of these factors time to work.

**Political Context of the Suppression Effort.** To provide background for the case, we now turn to the political and economic contexts of the suppression effort. The *Pax Britannica* serves as the primary geopolitical backdrop for this campaign; international events of this period and region all implicitly reference British power. The predominance of British power provided the

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\(^9\) As this support involved a number of marginally legal unilateral actions on the part of Lord Palmerston, the form of the support remains an issue of controversy.
leverage that backed the British regime building effort and was applied to this task by a robust domestic abolitionist movement. Putting this in terms of the realism-constructivism debate, British primacy relaxed strategic pressures within the system and allowed the hegemon to pursue ideological ends abroad.

Hegemony can cut both ways, however. British actions, interpreted by competing powers as a cloak for power and mercantilism, led to opposite though unequal reactions. No nation could directly defy the British in the Atlantic, but nations can resist British hegemony through ‘soft balancing,’ cost-imposition, or limited regional campaigns. This was especially true of the United States, who through the course of the case was quite reticent to join British-led international regime building effort after the experiences of the War of 1812. Another familiar aspect of hegemony is the neglect of treaty obligations, intentional or otherwise, in the hopes of free-riding or cheating. The Spanish and Portuguese took this tack through much of the

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10 From the beginnings of British Abolitionism in the late 1700s, the international effort for the suppression of the African Slave Trade evolved in at least four directions – West Africa, North Africa, East Africa and the African interior. This case only covers the first of these. These are each studies in complexity - the narrative of abolitionism interacted with contemporary forces, yielding results that would have likely surprised those who initially put the movement in motion. As with a ‘Drunkard’s Walk,’ each step in the chain of events logically connects, but the last steps may make little sense from the perspective of the first step. Leonard Mlodinow, *The Drunkard’s Walk: How Randomness Rules Our Lives* (Random House Digital, Inc., 2009).

After the British abolished their own slave trade, they set out on the Atlantic maritime suppression effort described in this chapter. While our case ends with the successful suppression of the Atlantic trade in the late 1860s, this branch continues into the myriad emancipationist movements in the Americas. A second branch of the abolitionist narrative shifted its eye north, toward captives in Ottoman possessions in North Africa and Europe; in concert with power and interest, this led to the 1816 Bombardment of Algiers and was a minor factor in European support for Greek Independence. This became a campaign against ‘white slavery,’ a distant ancestor of the modern campaign against sex trafficking. This campaign is extensively covered in Pocock’s *Breaking the Chains.* Tom Pocock, *Breaking the Chains: The Royal Navy’s War on White Slavery* (US Naval Institute Press, 2006).

A third branch shifted the West African naval suppression campaign to East Africa, following the successful termination of the Atlantic trade. Howell’s *Royal Navy and the Slave Trade* comprehensively overs this effort. Finally, a fourth branch connected the British presence ashore in West Africa to the larger colonial enterprise. The Scramble for Africa invoked abolitionist chords, echoed in the anti-slavery Brussels Conference Act of 1890. Hochchild’s *King Leopold’s Ghost* is situated within this branch. Many of the choices made during the British Atlantic suppression effort yielded complex and problematic results as they played out in these branches – not least of these the decision to use colonial treaties as a mechanism of supression. Adam Hochschild, *King Leopold’s Ghost: a Story of Greed, Terror, and Heroism in Colonial Africa* (Boston: Houghton Mifflin, 1999).

campaign, allowing significant numbers of slavers to use their flag in order to bring captives to their possessions in the Americas. While the British could call upon relatively vast reservoirs of power, other nations could increase the costs of using that power. Throughout the case, we see both the trump of British power forcing compliance, and the counterstroke of subversion unworking unpopular British-imposed treaties.12

On an operational level, the case is embedded in a story of institutional superiority and institutional change for the Royal Navy - this period was an era of unquestioned British supremacy at sea, but also one of major reforms for the service. At the outset of the campaign, British sailors were veterans of Trafalgar and the naval campaigns of the Napoleonic wars. During the 1830s, the Royal Navy undertook major restructuring, moving from Nelson’s impressment navy to a more professional force.13 In both periods, the British were sailors par excellence. These skills proved important to the suppression regime’s performance, as Royal Navy ‘Bluejackets’ would fare well in dangerous boarding actions against slavers, even when engaging adversaries of comparable or superior strength.14 This allowed British sailors to

<table>
<thead>
<tr>
<th>Date</th>
<th>Cruiser (Guns)</th>
<th>Slaver (Guns)</th>
<th>Outcome (KIA: Killed in Action.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 May 1828</td>
<td>Black Joke (1)</td>
<td>Presidente (6)</td>
<td>2 hour battle. Slaver also had heavy pivot-gun. Outmaneuvered – 30 slaver KIA (including captain) vs 1 British KIA. Taken.</td>
</tr>
<tr>
<td>1 Feb 1829</td>
<td>Black Joke (2)</td>
<td>El Almirante (14)</td>
<td>31 hour chase, w/ sweeps. Black Joke kept astern ‘within half-pistol shot,’ used pivot-gun for 1 hour. Surrendered.</td>
</tr>
<tr>
<td>5 Jun 1829</td>
<td>Pickle (2)</td>
<td>Voladora (4)</td>
<td>Chase, Voladora failed to evade, turned to engage. 80 min battle. Voladora De-Masted, 8+ KIA. 1 Brit KIA.</td>
</tr>
<tr>
<td>1832</td>
<td>4 x Cruisers</td>
<td>Brillante (10)</td>
<td>Brilliant had repulsed boarders on at least one other occasion. Outnumbered, cornered but drowned captives prior to capture. Tragically, this resulted in non-convict in US courts on technicality, as no slavers were aboard at time of capture.</td>
</tr>
<tr>
<td>17 Dec ’52</td>
<td>Vestal</td>
<td>Venus</td>
<td>Chase, Vestal Captain boarded Venus and used slaver to capture two other slavers on the spot. No known KIA.</td>
</tr>
</tbody>
</table>

14 A sample of the more notable chases is provided below. While they are not representative of the typical banal boarding, they demonstrate the tactical superiority of the cruisers over the slavers.
achieve maximum performance from their ships, even when the Admiralty had given them sub-optimal interceptors. The comparative advantages of the British sailors were evident when the Squadron turned captured slavers on their previous owners - ex-slaver Baltimore Clippers, sailed by British crews as interceptors, were arguably the swiftest ships of their times.\(^{15}\)

Finally, the technological changes wrought by the industrial revolution come to bear on this case. Around the middle of the century, the popular adoption of steam engines reshaped both navies and shipping fleets. The transition from sail to steam, the introduction of iron ships, and major changes in weapons suites all challenged traditional conceptions of naval warfare.\(^{16}\) The ability of the Royal Navy to harness these changes, and to preclude the slavers from doing so themselves, played a major role in their eventual success.

The blockade of Africa, as understood within the institutional understanding of the Royal Navy, maps roughly onto contemporary understandings about symmetric vs. asymmetric warfare. The campaign was a frustrating affair, with officers running legal risks in the execution of their duties and watching their quarry escape on technicalities. This devolved into maroonings and worse as these frustrations mounted. The campaign was poorly understood on the domestic front; the combatants themselves were equally poorly understood.\(^{17}\) Africa Station was one of the most dangerous postings in the Navy, but these losses were suffered almost

| 10 Aug '60 | Brisk | Emanuela | Emanuela known for being extremely fast – was an extreme clipper. Brisk had steam so could catch at 11.5 knots. |

For a dramatized account of these chases, see Basil Lubbock, *Cruisers, Corsairs & Slavers: An Account of the Suppression of the Picaroon, Pirate & Slaver by the Royal Navy During the 19th Century* (Glasgow: Brown, Son & Ferguson, 1993). Lloyd, Rees, and Ward all include animated but more precise accounts. The various Navy List compilations (threedecks.org, Loney Website, etc.) provide a record of the dispatches sent to the Admiralty during this period. (Source for chart: http://www.pbenyon.plus.com/)


\(^{16}\) Herman, *To Rule the Waves*.

\(^{17}\) Rees, *Sweet Water and Bitter*. 
entirely through disease rather than through direct combat. An average of 6.3% of the stations
died each between 1825 and 1845, more than three times the mortality rate of any other station.\textsuperscript{18}
In 1829, epidemics ravaged the squadron, and “202 of 792 sailors in the squadron died from
disease.”\textsuperscript{19} In a refrain common to ‘dirty wars,’ death was unpredictable and inglorious. In
another of these refrains, battle lines and allegiances were never particularly clear, and
adversaries could mutate structures and seemingly endlessly replace losses. This led to confused
guidance, contradictory actions, and low morale in general for the effort.

The space between Trafalgar and Jutland was filled with “savage wars of peace,”\textsuperscript{20} and the
pax was less pacific for those involved in its gunboat diplomacy. While asymmetric conflicts
outnumber symmetric ones by conservatively two-to-one,\textsuperscript{21} these campaigns remain
understudied. Tellingly, in Paul Kennedy’s classic volume on British Naval mastery, only two
pages are devoted to the half-century African Blockade, while whole chapters examine potential
European threats during this period.\textsuperscript{22}

The lack of proper attention should not diminish the significance of this effort, both in terms
of its strategic impact and its role in shaping the British tools of power. Historian Seymour
Drescher estimates that an unsuppressed Atlantic Slave Trade would have continued in force
after the historical trade had been eradicated.\textsuperscript{23} The consequences for such a trade for the
Americas would have been profound.

\textsuperscript{19} Ibid.
\textsuperscript{22} Kennedy, \textit{The Rise And Fall of British Naval Mastery}.
On a technological level, in the course of this prolonged campaign, the British experimented with unique acquisitions, command and control, and even new key technologies such as steam power. The Blockade of Africa is a strong, even if asymmetric, competitor for the last great naval campaign of the age of sail, and the first of the age of steam.24

**Economic Context of the Suppression Effort.** It is impossible to provide a fully satisfying description of the economics of Atlantic slavery in this space. In order to understand policy choices, though, we can at least frame the working assumptions of the players in the case. The two key factors are the relationship between the slave trade and the institution of slavery itself, and the potential profitability of the trade through this period.

First, the relationship between the Atlantic slave trade and slavery in the Americas during this period hinges on demographics. While the trade fed the institution, stable populations no longer needed a constant influx of captives. This, in turn, depended on local conditions and modes of production. The sugar trade that dominated Caribbean slavery had a high mortality rate and therefore relied on the continued trade rather than captive population growth. Nations that could rely on domestic captive birth rates, such as the United States, could retain the institution without the trade. Cuba and Brazil, on the other hand, looked to smuggling rather than to population growth to bolster their captive populations. Still, both abolitionists and pro-slavery forces alike assumed that banning the trade was a prelude to attacking the institution itself. For all major players, this relationship held – abolition of the trade preceded emancipation by decades for the British, the Spanish, the Portuguese, the French and the Americans. Given this sequential-but-not-essential relationship, I focus on the suppression of the Slave Trade only,

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24 In the persistent debate over the importance of asymmetric warfare in the history of warfare, it is significant that this ‘small’ naval war stands between Trafalgar and Jutland. If one were to study the evolution of technological trends, studying this case provides an excellent counterpoint to the overdetermined Crimean conflict, as it spans decades and demonstrates adoption and adaptation of steam.
and bracket the assaults on the larger institution of slavery.

For an American reader, issues touching on slavery typically invoke images of the plantation slavery of the American South. I believe this association is unhelpful in understanding the late phase slave trade. While the United States played a role in this case, it was not as a major consumer of slaves but rather as a sanctuary for transnational crime, largely by way of shipping and financial infrastructure in New York and Baltimore. 98 percent of captives brought to North America arrived before the outset of this case.\(^{25}\) Moreover, though North America during was home to approximately half of the African diaspora during this period, only 3.8% of captives throughout the entire trade were sent to North America.

This difference is explained by demographics – the North American captive population was stable and growing since the mid-1700s, while captive mortality in the Caribbean remained high through the mid-1800s. Hence, both North and South were content to outlaw the Atlantic trade following the 20-year reprieve granted in the Constitution – for the North, this was at least partially ideological; for the South, this was more akin to protectionism for slave-holding planters.\(^{26}\) Following an immediate pre-abolition spike, North American slavery was largely de-linked from the Atlantic Slave Trade in 1808.

Second, following Drescher, I hold that the suppression attempt was fighting a trade in its prime, which was potentially profitable for the duration.\(^{27}\) The suppression attempt was

\(^{26}\) Though, in the North, concern for captives themselves was likely dominated by concerns over modes of production – Northern ports were willing to profit of the trade in indirect ways. Anne Farrow, Joel Lang, and Jenifer Frank, *Complicity: How the North Promoted, Prolonged, and Profited from Slavery* (Random House LLC, 2007). In the early 1800s, pro-slavery factions would go so far as to condemn the trade in order to differentiate the supposed humanity of their institution from the barbarity of the trade.
\(^{27}\) Drescher, *Econocide.*
normatively motivated, rather than a means of redistributing capital from a dying trade.\footnote{This is contra Eric Williams, \textit{Capitalism and Slavery} (The University of North Carolina Press, 1994).}

Counterfactuals about the relationship between British efforts and the vitality of the trade during this period directly inform our estimates of Royal Navy effectiveness. As an upper bound of effectiveness, LeVeen’s estimates that suppression prevented 800,000 more would-be captives from entering the trade through price elasticity of demand.\footnote{E. Phillip LeVeen, “British Slave Trade Suppression Policies, 1821-1865, Impact and Implications,” \textit{The Journal of Economic History} 32, no. 01 (1972): 415–416. E. Phillip LeVeen, “The African Slave Supply Response,” \textit{African Studies Review} 18, no. 1 (1975): 9–28.} As a lower bound, Eltis holds that the Squadron’s direct suppression efforts were largely ineffectual, but they did serve to support decisive political and economic efforts.\footnote{David Eltis, \textit{Economic Growth and the Ending of the Transatlantic Slave Trade} (Oxford University Press, USA, 1987).} Triangulating between these two authors, I hold that suppression significantly reduced traffic through the illegal slave trade, but was itself insufficient to cut the flow.

\textbf{ROADMAP: THE GREY MARKET, THE BLACK MARKET AND DEMAND SHIFTS.}

This section is written with three objectives in mind. First and foremost, this is a hypothesis test for the Boxer theory of illicit market suppression. This case is ideal for this purpose – it spans a long period of time, where it provides extensive variation in both efficiency and support. Moreover, this case is composed of two primary submarkets – the trade to the Caribbean and the trade to Brazil – which each move in their own ways. In both of these cases, efficiency and support jointly explain changes in progress against the illicit market. Additionally, each of the four primary flags of the illegal trade (Portugal/Brazil, Spain, France and the United States) has a semi-independent story within the larger case. This degree of variation in time, space and nationality provides a broad field of testing opportunities.

As described in chapter four, we will test the Boxer hypothesis using the operational script,
which argues that illicit market suppression begins with a grey market, which becomes a black
market once adequate pressure is applied, and ends with demand restructuring. We will evaluate
whether the imperatives of the organizational script – structure for ‘market-like’ efficiency
before support is exhausted - actually cause the British to take ground along the operational
script.

This account does not attempt to provide an adequate social history of the suppression
campaign, nor do I try to interpret what these events meant for their participants.31 Mary Wills’
recent “The Royal Navy and the Suppression of the Atlantic Slave Trade c. 1807-1867: Anti-
slavery, Empire and Identity” provides such an account.32 Similarly, I do not fully explore the
contradictions in the British campaign, nor their motivations for suppression. Huzzey’s Freedom
Burning is an excellent work on how simplistic goals yielded complex outcomes moral problems
within this suppression case. Rather, this retelling is somewhere between a military historical
and an operations research approach. I assume objectives come about from mixed, fraught and
complex motives, but I take the objectives as given and evaluate progress toward those ends.
One might imagine this section being told from the perspective of an intelligence officer
seconded to the Admiralty, equipped with modern quantitative tools.

These tools reveal novel results that bear on the general scholarly reading of this case. For

31 In this, I distinguish between interpretation and analysis. Both approaches are rigorous, but interpretation is more
contemplative and reflective about identity. I do not attempt the latter, but rather take the British goals as given and
assess whether their actions are moving them toward those ends. This runs the risk of sounding triumphalist to a
critical historian, but my acceptance of the British goals should not be interpreted as unconditional endorsement. A
broad and excellent swath of works have problematized the British objectives in this case; I assume that, like in any
conflict, these objectives are problematic. I then set out to see if and how they achieved the things they ostensibly
set out to do. As part of this analysis, I attempt a simple accounting of the complex costs of the forces they set in
motion. Whether these costs were worth it or not, and to whom, is a determination to be made by an interpretivist.
For a modern analogy to this discussion, where Tom Ricks’ Fiasco serves as a critical strategic history of the Iraq
war, Aki Peritz’ Find Fix Finish takes the situation and objectives as given, and analyzes the effectiveness of tools
used towards those ends. This work falls in the latter camp. This thinking about analysis vs. interpretation in
history is informed by my reading of Gaddis’ thoughts in The Landscape of History.

32 Mary Wills, “The Royal Navy and the Suppression of the Atlantic Slave Trade c. 1807-1867: Anti-slavery,
Empire and Identity” (University of Hull, 2012), http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.572212.
instance, the suppression campaign only re-captured about 5% of embarked captives during this period. This was cited as evidence of ineffectiveness both during the case and in historical analyses.\textsuperscript{33} While this statistic is accurate, basic operational research methods radically alter the framing of this number. First, almost half of the slavers of this period were running under legal registrations from states which had not yet banned the trade, and therefore immune to capture.\textsuperscript{34} Failing to capture an un-capturable vessel cannot be considered a sign of ineffectiveness. This correction immediately doubles the squadron’s effectiveness. Second, between half and two-thirds of the slavers captured by British cruisers were seized prior to loading captives. These pre-emptive seizures do not register with the ‘re-capture’ metric, though they bear directly on the squadron’s effectiveness. This correction doubles the effectiveness of the squadron once again.\textsuperscript{35}

Our second purpose in this work is to bring to light new statistical analyses such as this from the voyages dataset.

This case provides insights for modern policymakers combatting transnational criminal organizations and other networked adversaries. The British conducted a half-century campaign at great cost against a highly adaptive market. Northwestern Law Professor Steve Lubet, wrote an op-ed shortly after the September, 11\textsuperscript{th} 2001 attacks linking the two campaigns:

Beginning in 1807, Great Britain embarked upon a "war" against the transatlantic slave trade that lasted more than 50 years. We can call it a war because the British used the

\textsuperscript{33} For instance, see Lindsay Doulton, \textit{The Royal Navy's Anti-slavery Campaign in the Western Indian Ocean, c. 1860-1890: Race, Empire and Identity}. (University of Hull, Dissertation, 2010). 32. “During the transatlantic campaign 160,000 Africans were freed by naval patrols, which represented only a small percentage of the total numbers exported from Africa.” This ‘recaptures:total traffic’ ratio is typically used in passing. Also Buxton and Hutt’s supporters during the 1840s used this ratio – one of the few things that they agreed upon. I argue that it is an inaccurate measure to assume ineffectiveness for intercepts against ships which were not yet liable for capture.

\textsuperscript{34} 3600 legal vs. 4500 illegal. Less than one-third of voyages (2500 vs. 5600) were conducted against a right-of-search regime, but the British were known to board illegally running ships without a search treaty. Voyages Database.

\textsuperscript{35} Voyages Database, full statistical analysis provided in later chapters.
Royal Navy, and occasionally land forces, to pursue, capture and sometimes destroy the slavers and their resources. We can also draw an analogy between 19th Century slave traders and 21st Century terrorists, and not only because both targeted innocent populations. To defenseless men and women in chains, what was slavery if not a form of terror?36

Former CIA and NSA director General Michael Hayden drew the same link in a February 2014 speech at Oxford University.37 During the long swath of this case, British commanders devised many innovative stratagems; this campaign is a text in counter-network warfare. Accordingly, it should be able to speak to modern policy challenges.

First amongst these is the scourge of modern-day slavery. Historian James Brewer Stewart links the historical abolitionist struggle to modern trafficking.38 In the course of the case, the Atlantic trade mutates in ways that lay the groundwork for modern human trafficking. In both cases, advances in transportation technology brought the world closer together; those same links connected powerful people to vulnerable people. In the course of this case, the British wrested control of a global commons from an illicit market. It seems likely that the growing movement against trafficking in persons will have to do the same if they are truly serious about their aspirational goals. For all its problems, imperfections and complexities, this case provides the sole precedent for successfully doing so.

To that point, the issue of slavery is raw and deeply personal for many, and I apologize at the

outset if this statistical approach does not do justice to these deeply-held experiences. This work will likely not help us grapple with the remembrance of the trade, nor better understand what it means for us today. However, it is my deeply-held hope that better understanding what worked and what did not in this case will help us better serve the slaves of today. State power plays a role in anti-slavery today, as it did throughout the case – modern law enforcement and diplomats share both the tactics and the frustrations of their predecessors in this battle. Coming to terms with what the British accomplished here and how, along with the mistakes and compromises along they made along the way, positions us better to do more of the former with less of the latter.

*Timeline Overview.* We will introduce the case with a prelude that traces the rise of the movement to suppress the trade. We proceed with an overview of the case’s timeline, which we will use as a touchstone to keep ourselves oriented as we explore the campaign’s intertwined causal chains. This is followed by an outline of the entire work.

The British were quickly able to eliminate their own participation in the trade, so it is understandable that the British would initially be optimistic about suppression. However, the supply shortage left by the departure of the British would soon be re-filled by other flags, and later generations of slavers would be increasingly quicker to shift modes and stay in the trade. The collision between these forces introduces the main case, which begins in 1808 with British abolition, and ends in the late 1860s, with the last voyage of the Atlantic trade.
The main case can be divided into three overlapping phases. First, the ‘grey market’ phase runs from the outset through the mid-1840s. During the entire case, the British attempted to build a comprehensive enforcement treaty framework, while slavers would attempt to find legal

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39 One of the complexities of this case is that it includes sub-cases for each of the five major sea-going players of the time, and in each of these cases, the struggle advances through the three phases of our operational script. For instance, the British quickly concluded their own grey market phase with their felony slaving law, and advanced quickly through their black market phase with their fleet of cruisers, and the 1833 Emancipation Act stands of evidence of the success of their demand restructuring efforts. Conversely, the Brazilians remained a semi-legal grey market for decades. For the sake of parsimony, I hold that the weight of British effort was treaty building until about 1840, and shifted to treaty enforcement after 1840. Hence the ‘grey/black market’ shift for the case as a whole.

Though the grey and black market campaigns run concurrently in the overall suppression campaign, they are sequential on a national level. Globally, the trade darkens globally as time goes on, but the state of the trade may vary greatly based on geographic location and position within the supply chain. For instance, in the mid-1840s, Brazilian slave markets were an unenforced grey market while Spanish-flagged shipping was taking 50% causalities as a black market. For simplicity’s sake, I retain the global frame from the grey market section, and divide the black market suppression effort into three phases that run concurrently with the events previously described. Generally speaking, the suppression regime increasing its coverage and efficiency over time. In response, the trade moves farther south along the African coast and becomes increasingly channelized in the Americas as the scenario progresses.
loopholes and through which they could run marginally legal voyages. At the outset of the case, slavers could run the Middle Passage under full or partial legal cover; by the 1840s, all sea-going flags were at least nominally barred from the slave trade. From the 1840s until the end of the trade, the British focused on negotiating enforcement improvement treaties. We will describe this treaty building enterprise in its entirety in chapter six, telling this story from the perspective of the Foreign Office.

As the British closed these loopholes and improved their patrols, much of the market abandoned flags partially or altogether. This channelized the trade to Cuba and Brazil alone, but it also hardened the trade. This second ‘black market’ phase ran from the early 1830s to the late 1860s. In this phase, the British and the slavers fought a measure-countermeasure duel, with the slavers mitigating their now-much-higher risks through organization and novel tactics. During this period, the Royal Navy chased the trade up the supply chain building an African coastal treaty network and attacking slave fortresses (‘barracoons.’)\(^\text{40}\) In chapter seven, we will discuss how the Royal Navy used improvements in organizational structure, tactics and technology to counter these counter-measures. Essentially, we will retell the case from the perspective of the West African Squadron’s commodore.

Finally, the space cleared by the grey and black-market suppression created room for demand restructuring. Emergent processes grew up to fill in the vacuum created by suppression. This last phase, which covered the space between the mid-1840s through the end of the case, provided the British endgame. This process occurred through a number of complex causal pathways. Some of these were gradual, such as a gravitation of labor flows from South Asia vice Africa.\(^\text{41}\)

\(^{40}\) Lloyd, *The Navy and the Slave Trade*;

Some were more abrupt, as in Brazil, where British intervention supported a change to a more enforcement-friendly government.\textsuperscript{42} In chapter eight, we will identify and trace these pathways, and explore emergence in alternate demand. Suppression could never stop the trade itself; it was a necessary but not sufficient condition for the changes on both sides of the Atlantic that brought the trade to a close.\textsuperscript{43}

\textsuperscript{42} Bethell, \textit{The Abolition of the Brazilian Slave Trade}.

\textsuperscript{43} The voluminous historical and economic literature that surrounds the Atlantic Slave Trade fiercely debates issues relating to the suppression attempt. Not least of these are the British motivation for suppression, reasons for the decline of the Atlantic Slave Trade, the effectiveness of suppression, and the utility of economic development in West Africa as a substitute for slavery. One excellent example is: Martin Lynn, \textit{Commerce and Economic Change in West Africa: The Palm Oil Trade in the Nineteenth Century} (Cambridge University Press, 2002).
CHAPTER 5, GREY MARKET: THE RATCHET STRATEGY.
THE BOARDING TREATY NETWORK AND SUPPRESSION OF THE GREY MARKET, 1815-1862.

In 1807, both Great Britain and the United States joined Denmark in ending their legal participation in the Trans-Atlantic slave trade.\(^\text{1}\) Increasingly severe punishments deterred the few remaining British stragglers – most notably, an 1811 law which declared slaving a felony, and an 1824 law declaring it piracy and a hanging offense.\(^\text{2}\) While Britons indirectly profited from the trade, especially thru financial services,\(^\text{3}\) Great Britain was able to effectively extinguish their own direct participation in the trade. This is demonstrated in the graph below, which depicts captive traffic by years. Shortly after abolition (arrow below,) the British-flagged slave trade went extinct.

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\(^\text{1}\) The United States (and to a lesser extent Britain) saw a ‘under the wire’ spike immediately before the acts banning the trade came into force. Voyages Database, 2010.

\(^\text{2}\) An 1837 clarification reduces the penalty to ‘transportation’ (imprisonment for at least 15 years in a penal colony.) An 1843 extension of the law declared these penalties applicable to all British subjects, regardless of their residence. “An Act for the More Effective Suppression of the Slave Trade,” British Parliamentary Act, 1843.

Britain’s exit from the trade left a vacuum that was quickly filled by the Portuguese, Spanish, and French soon after. As the enemies of abolition predicted, the trade shifted flags and largely recovered. Choosing to pursue, the abolitionist struggle was militarized and transposed onto the commons of the Atlantic.

The move into the international invoked competing conceptions of international law. On one hand, the natural law approach framed the trade as piracy. Viewing slavers as *hostis humani generis* (enemies of all mankind), this approach held that slavery by definition could have no legal sanction. On the other hand, a positive law approach held that treaties were the only acceptable basis for actions against the trade. British policy initially favored unilateral force under natural law, but moved toward positive law following a number of court decisions and international objections. Throughout the case, the more practical treaty-building approach typically prevailed. The British were willing to fall back to their interpretation of natural law and unilateral action when they could not achieve objectives through positive law. This willingness doubtless strengthened their diplomats’ hand at treaty negotiation.

Upon this backdrop, the British built bilateral treaties, while the slave trade would find legal loopholes or uncovered flags and thereby defeat the framework. The British eventually prevailed in this battle of legal combinatorics by using a ‘ratcheting’ strategy. Whether Spanish debt, Portuguese civil wars, Brazilian independence, or American diplomatic blunders, they would opportunistically use crises to extract as comprehensive a treaty as possible from a nation. Once

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5 Ibid.
6 This idea belongs to Jessica Rodgers, US Department of State.
in place, they would not permit treaties to lapse or move backwards – the most extreme example
of this being the Portuguese, where the British unilaterally boarded their vessels when they
attempted to depart the treaty network.

When slavers would identify a legal loophole, the British would close the loophole by re-
negotiating the current network and incorporating the improvement in all future treaties. The
most notable of these improvements was the ‘equipment clause,’ which permitted the seizure of
a ship outfitted for the trade regardless of whether or not captives were aboard. This was
developed in response to load-and-dash tactics from the slavers, and allowed the British to
effectively blockade slave ports.7 In effect, the British defeated the flag-jumping ‘whack-a-
mole’ game by boarding up all the holes. Doing so, they closed down the ‘grey market’ by
denying the slave trade legal cover, which forced it into defensive ‘black market’ forms.8

Roadmap. In this chapter, we explore the destruction of the slaver ‘grey market.’ In this
phase, the British attempted to deny de jure and de facto legal cover to the slave trade. Our focal
point will be the construction of the boarding treaty network over time, though we will branch
out from that broad narrative to explore British bi-lateral relationships throughout the case. The
key strategy employed by the British toward this end was the ‘ratchet,’ whereby they would

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7 This was developed in response to a slaver tactic of nominally ‘selling’ the ship to a citizen of a non-participating
third country while ashore in Africa. Christopher Lloyd, The Navy and the Slave Trade;: The Suppression of the
African Slave Trade in the Nineteenth Century, First Edition (Longmans, Green, 1949); Andrew H. (Andrew Hull)
Library, 1855).

8 One of the complexities of this case is that it includes sub-cases for each of the five major sea-going players of the
time, and in each of these cases, the struggle advances through the three phases of our operational script. For
instance, the British quickly concluded their own grey market phase with their felony slaving law, and advanced
quickly through their black market phase with their fleet of cruisers, and the 1833 Emancipation Act stands of
evidence of the success of their demand restructuring efforts. Conversely, the Brazilians remained a semi-legal grey
market for decades. For the sake of parsimony, I hold that the weight of British effort was treaty building until
about 1840, and shifted to treaty enforcement after 1840. Hence the ‘grey/black market’ shift for the case as a
whole.
slowly improve the overall treaty network by using transient bi-lateral opportunities. This increased efficiency while keeping support costs low.

We will apply a strategic level of analysis and explore the British suppression case through the lens of international politics. We might imagine that this chapter is told from the perspective of the British Foreign Minister. The next chapter on the ‘black market’ would then be told from the perspective of the Commodore of the West African Squadron. These two chapters broadly overlap, as diplomacy and enforcement are intertwined. The weight of effort shifts from the former to the latter during the 1840s, though both run the duration.

We proceed with a statistical overview of the case. Here, we will analyze the ‘sawtooth’ network shock patterns that follow treaty improvements. Following this, we process trace the effects of network improvements on the flow of captives through the trade. Subdividing the case into four major periods, we will first outline the major events in each period, and then delve into national players that play key roles during that period.

In the first period (1808-1815), the British practiced unilateral boarding, but failed to substantively alter the participation of any nation other than themselves during this time. Throughout the second period (1815-1835,) the British founded and advanced their treaty network cooperatively. During this time, the French banned and suppressed their trade; the Spanish granted the British comprehensive boarding rights by the end of this period. The third period (1835-1850) involved unilateral interventions against the Brazilian and Portuguese trade, which were both extinguished soon afterwards. Finally, the fourth period (1850-1867) closed the last remaining American holes in the boarding treaty network in the final struggle to suppress the Cuban trade.

**Statistical Overview.**
In order to capture a slaver, an interdictor must corner them both legally and physically. The treaty network provided the interdictor legal standing. Tactics and technology arranged the physical meeting. The slavers, at the outset, preferred the cheaper ‘grey market’ legal counter-tactics. In contrast to costly ‘black market’ tactical countermeasures, legal loopholes were less disruptive to the slaving business model. Both of these struggles run through the entirety of the case, but focus shifted away from legal loopholes and toward costly countermeasures as the British patched together an increasingly watertight network of treaties.

The treaty-regime-building phase of the campaign exhibits ‘sawtooth’ network characteristics. A treaty improvement causes an initial drop in the number of slave voyages as the fielded model is disrupted. The trade ‘re-boots’ by innovating a new survivable model, which diffuses through its network and secures the new status quo. A shock as the trade is re-booting causes major impacts on the trade. This pattern can be observed in Figure 4 below.
The first wave of treaty making (1815-1823) had mixed effects, with the Spanish trade dropping the most sharply and recovering more slowly. The ‘sawtooth’ effect was more pronounced with the second wave of treaties (1829-1835), which incorporate more comprehensive measures such as the ‘equipment clause.’ Unilateral actions against Brazil in the 1840s similarly register as ‘sawteeth,’ which vary according to the specific suppression strategies employed. (These strategies will be further discussed in the ‘black market’ section.) From 1850-1867, the last bout of the campaign starts with a resurgent Cuban slave trade and ends with a final boarding treaty with the United States. By this time, the trade itself is channelized and vulnerable outright; after this final shock, the trade attempts to re-boot once more, but is unable to re-establish itself.

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9 These data visualizations were developed in parallel with, but independently from, those of Jenny Martinez in “Anti-Slavery Courts and the Dawn of International Human Rights Law,” 117 Yale L.J. (Fall 2007, Draft.) Since Professor Martinez first had the idea of juxtaposing captive flow with major events, she is the originator of this application of data visualization to this case. My goal was to demonstrate network shock-response effects, hers was to demonstrate the evolution of the boarding treaty regime. Since that regime was a network, these visualizations seem to have reached equifinality.
The trade during this case can be subdivided into two major routes – from West Africa travelling northwest to the Caribbean, and from West Central Africa moving west to Brazil. The ‘sawtooth’ pattern is strongly evident when broken out in this way, as in Figure 3 above. Note the interplay between the two routes: between 1830 and 1840, in the lull following the Brazilian ban on the trade, some number of Portuguese-flagged vessels shifted to the Caribbean trade. Here, as before, a treaty improvement causes a shock to the network. If sufficient network resources remain, the trade recovers in time, but it is particularly vulnerable while re-booting.
This distinctive shock-response pattern is even more evident when broken out by flag, as in Figure 5 above. Treaty improvements typically result in a decrease and shifts toward other flags. By the 1840s, with few options left, suppression of the Brazilian trade results in a rise in unflagged shipping. This is the ‘black market’ discussed in the next phase.

Interestingly, Brazil-bound vessels under suppression larger chose to go unflagged rather than swap to the American flag. This was due to tacit agreements between the British and the Americans, as well as American naval patrols off of Africa. When the Cuban trade re-emerged, changes in British administration and American diplomatic protests made this arrangement unworkable. Accordingly, the American flag covered much of the late Cuban slave trade, and was eventually put down when the Americans finally granted reciprocal right of

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11 Lloyd, *The Navy and the Slave Trade*. 
search to the Royal Navy during the US Civil War.

Interrupted Time Series analysis isolates this ‘sawtooth’ shape and allows us to test it using regression analysis.\(^\text{12}\) Figure 6, above, overlays the timeframe surrounding the adoption of right-of-search regimes for the four major players in the post-1808 Slave Trade. The graph on the left presents a 5-year window before and after these interventions – these regimes have a clear effect in reducing the trade.\(^\text{13}\) The 10-year graph on the right also depicts the network’s recovery up-stroke. Signing a reciprocal right-of-search regime, therefore, is correlated with a rapid drop in slaver traffic followed by a recovery period.

This supports our broader network hypothesis. Each improvement stresses the illicit network, but the network will recover if given time. These recoveries grow weaker as the suppression network improves at the illicit network’s expense.

**PROCESS TRACING.**

\(^{12}\) In full regression results, we find negative and significant results for Right of Search, and the positive and significant post-exposure second order time term. These results support both the down- and up-stoke from the posited ‘sawtooth’ shape. Results available upon request.

\(^{13}\) This finding is statistically robust down to a three-year bandwidth for a first-order model, and to 10-year bandwidths for second- and third-order models.
The statistical case establishes that the suppression regime and illicit network move in the ways predicted by the Boxer hypothesis. For greater fidelity, we need to trace the construction and improvement of the regime. We proceed by tracing progress through four broad phases of regime construction that alternate between unilateral and multilateral enforcement.

From 1808 to 1815, within the milieu of the Napoleonic wars, the British boarded neutral vessels and attempted unilateral enforcement of an anti-slave trade norm (‘unilateral’ in Fig. 5). This ran afoul of British courts and international pressure, which led to a relatively friendly phase of treaty construction from 1815 to 1835 (‘friendly treaties’ in Fig. 5). When this effort collided with increasing Brazilian opposition to enforcement from 1835-1850, the British reverted to unilateral pressure in a contested phase of treaty building (‘hostile treaties’ in Fig. 5). The success of this effort led to the final phase, from 1850-1860, where the British plugged the flow of captives to Cuba by patching the American hole in the boarding treaty regime (‘final holes’ in Fig. 5).

These phases roughly track with changes in the dominant form of court proceedings against slavers. The British Vice-Admiralty courts adjudicated specifically British claims against shipping. When the British favored these courts, they were tending toward unilateral improvements to the boarding treaty network. Courts of Mixed Commission, on the other hand, were created through bilateral treaties specific to suppressing the slave trade; these are most active when the British are advancing the network through partnership. Through the course of the case, the overall treaty network grew to cover the entire market domain.
We now turn to these four phases, and the British travails with the four major Atlantic sea-going powers of their day: the “unprincipled Spanish, the lazy Portuguese, the awkward French and the oversensitive Americans.” These nations had their own adjectives and reservations about _perfide Albion_, which would make for a long diplomatic saga.

**1808-1815: UNILATERAL RAIDING.**

The British abolished their slave trade in the middle of the Napoleonic wars. The initial round of the campaign possessed a bellicose unilateralism suited to this context. This phase yielded mixed results, contributed to a rift with the United States which was to last the course of the case, and came to a close when the British courts ruled against unilateral boarding of slavers as a matter of policy.

In Walvin’s memorable phrase, British abolitionism turned the leading slave poacher into the

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14 _The Dutch Slave Trade, 1500-1850_ (Berghahn Books, 2006). 118.
self-appointed gamekeeper of the 19th century. Once protected by the British crown, slavers became prime targets for her navies. This case begins at wartime, in the waning era of the privateer. During the age of sail, crews might become rich in the course of commerce raiding by seizing and claiming enemy vessels as ‘prizes.’ The initial British policy applied the same logic to slave ships – a slaver could be seized, and a bounty claimed for each captive rescued. These financial incentives for interdictors persisted throughout the case.

Beyond sweeping the seas of the few remaining British-flagged slavers, Royal Navy captains applied these rules liberally on the high seas. Using the prerogatives of wartime, they seized both French and neutral slavers. These prizes were sent to British Vice-Admiralty Courts, who adjudicated seizures; by and large, these vessels were condemned.\(^\text{16}\) Since these captures were not part of a deliberate framework any gains could not be maintained. They injected friction into the slaver business model, thereby likely reducing throughput through the trade, but lacked a network to ‘lock in’ any gains achieved.

This broad unilateral approach to maritime rules yielded unfortunate long-term consequences. British impressment and general interference with merchant shipping ignited tensions with the United States, culminating in the War of 1812. While the United States tolerated British seizures of American-flagged slavers throughout most of the case, the antipathies unleashed by this conflict poisoned hopes of meaningful formal coordination until at the 1840s at earliest. Unfortunately, the American rhetoric of “free trade and sailor’ rights”\(^\text{17}\) that emerged from this conflict left a glaring gap in the treaty network throughout the duration of

\(^{15}\) James Walvin, “Abolishing the Slave Trade”: http://www.history.ac.uk/ihr/Focus/Slavery/articles/walvin.html.

\(^{16}\) However, condemnation rates for this period in the Vice Admiralty Courts were lower than in the later unilateral phases of the 1840s. Voyages Dataset, 2010.

the case. Most likely, had the British persisted in the unilateral approach, they would have also sparked even greater counter-balancing reactions from their European sea-going rivals.

Unilateralism was not a solely British approach. After the United States banned the trade, the cruiser USS Alligator seized a French-flagged slaver, *Jeune Eugenie*[^18]. Though an American judge found the trade contrary to natural law in the case, the practicalities of enforcing a contested international norm were too costly and the vessel was delivered back to the French. When Chief Justice Marshall ruled against the invocation of natural law in slave trade cases in the 1825 *Antelope* case, the United States largely abandoned these tactics[^19]; an institutional approach was required.

With the Treaty of Paris ushering in peace between Britain and France, the use wartime powers against the slave trade came to a close. This was definitively marked by the 1817 *Louis* court case, which held that foreign slavers could be captured and condemned only if authorized by a treaty[^20]. The problem could not be solved with the simple application of force, or at least not be solved at a diplomatically and socially acceptable price. As support for abolitionism was vibrant and deeply politically entrenched during this era, the British pressed through this initial support check and updated their strategy. In the boarding treaty network, they found a more efficient and pacific avenue for attacking the slave trade abroad.

### 1815-1835: Covering All the Bases.

In the second phase of regime construction, the British sought bilateral anti-slave-trade treaties with all major sea-going powers. This was an evolutionary process; the slave trade

[^19]: US v. La Jeune Eugenie, 1822, Massachusetts District Court; *The Antelope*, 1825, US Supreme Court.
would innovate workarounds each time the British would improve the regime. While this phase
did not achieve its primary goal of disrupting the trade outright, it managed to channelize and
constrain the trade and thereby increased its vulnerability to direct suppression. The British
managed to achieve this at relatively low cost, due to their masterful ability to make use of
exogenous shocks. Their ability to diffuse legal counters to slaver tactics and ‘ratchet’ approach
mitigated the natural organizational advantages of the slaver’s market. True to form, the illicit
market was fast to innovate ways around the legal regime. The suppression regime countered
this advantage by holding all the ground they took in countering these innovations. Eventually,
this ‘ratchet’ approach left no legal ground unclaimed and the illicit market was forced
underground.

At the outset of this phase, the British found themselves at a strategic crossroads. Initial
disorganized unilateral seizures had some suppressive effect on the slave enterprise, but it was
clearly insufficient to disrupt the trade as such. Abolitionist political will supported an
expansion of the struggle against the trade, which led to a question of strategy. On one hand, the
British could double down on unilateralism - declaring a “war on slavery.” New laws could
declare the slave trade beyond the cover of any flag, and authorize cruisers to seize any and all
slavers.21 This approach would provide the British a free hand on the high seas, but offer little
recourse ashore.

On the other extreme, the British could harness the nascent multilateralism of the Congress
of Vienna and create a formal international institution to suppress the trade. Tsar Alexander

21 This Natural-Law Based unilateralism parallels Palmerston’s Brazilian interventions, but by then he had (barely)
marginal legal standing, an isolated trade, and an international framework by which the effects of the intervention
could be stabilized.
proposed something of the sort under the aegis of his “Holy Alliance,”22 but arguing for a vaguely mystical basis for cooperation did little to ignite British Foreign Secretary Casterleigh’s interest. More concretely, multi-lateral institutions provided comprehensiveness at the expense of speed and initiative, as each change to the regime required far more coordination than a bilateral treaty network. Empowering these institutions also ran the risk of British vessels being tried by international courts, a deeply unpopular possibility with British leaders and public alike.23 British efforts at the Congress of Vienna resulted in a vague condemnation of the slave trade, with a promise of extinguishing participation at some unspecified later date.

Given the tepid results of multilateralism and the costs of unilateralism, the British plotted a course between the two. Bilateral treaties split the difference and provided British leaders a position of dominant brokerage. Practical but slow, this effort minimized the cost of treaty building by using moments of national vulnerability in their negotiations. These negotiations were the heart of the ‘ratchet’ strategy – while multi-lateral negotiations have any number of veto players, bilateral negotiations have only one. If a nation were presently unwilling to move forward to a stronger treaty, the British would await (or generate) a moment of national vulnerability and then negotiate from advantage. This tack minimized the cost of improving regime efficiency, allowing the effort to proceed for two and a half decades before triggering a public ‘support check.’

These treaties took three generally sequential forms. First, the British sought to construct an international norm against the trade through national bans on participation in the slave trade. It soon became apparent that, without effective enforcement, these were generally dead letters.

23 Huzzey, Freedom Burning.
Few powers other than the British had the forces or the political will to exert force in West Africa to police their countrymen in the absence of external pressure.

Second, reciprocal right of search treaties theoretically granted the British and their partners the right to search each other’s vessels. These treaties were generally enforced by the Royal Navy, whose presence dwarfed other national patrols. These treaties also generally included provisions for the previously mentioned ‘Courts of Mixed Commission,’ which would adjudicate seizures. These courts were composed of three commissioners, one from Great Britain, another from the bilateral signatory, and a third drawn from random from either of the two nations. If such courts were not in place, the British would transfer captured slavers to the national courts of the bilateral signatory. In practice, the British Vice-Admiralty courts picked up a number of such cases, especially if the seized vessel had questionable registry.

Third, when slavers would innovate legal loopholes around the treaties, the British would update the treaty network to close these gaps. The most notable of these was the ‘equipment clause,’ though these also included rights of seizures for vessels that had previously carried slaves.24 Once the British discovered and closed one of these loopholes, they incorporated the improvement into future treaties whenever possible.

*Foreign Office Architecture.* The boarding treaty enterprise gave rise to the Slave Trade Department with in the British Foreign office.25 Four staffers and clerks were tasked to oversee the treaty network and the larger diplomatic issues surrounding suppression.26 For context, there were only 40 people in the Foreign Office of the time; the Slave Trade Department generated up

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26 Ibid. 44.
to one-fifth of all Foreign Office message traffic during this era.\textsuperscript{27}

A tier of clandestine intelligence collectors supported this civil service department. This spy network bribed Cuban consuls for information, as well as buying politicians and newspapermen in Brazil.\textsuperscript{28} Generally, British consuls and diplomats ran this network in foreign slave trade ports.\textsuperscript{29} As one example, the British consul in Cadiz reported in the 1860s that Spanish officials would not provide him with any information, so he paid the port’s boatmen and shipbuilders for intelligence.\textsuperscript{30} During Palmerston’s tenure, these operations were supported by a ‘black budget’ drawn from Secret Service funds.\textsuperscript{31}

By the mid-1840s, the treaty network included all European maritime powers, though the absence of the United States left a conspicuous hole. These treaties are described below in chart form. We proceed by delving into British relationship with Spain and with France, two nations that were effectively ‘locked out’ from the trade during this period using diplomatic and legal measures. We will conclude this section by covering a smattering of minor players in the trade, whose flags the British similarly took out of play through treaty-making.

\textsuperscript{27} Ibid. 44. Interestingly, much like the modern US State Department Counter-Trafficking-in-Persons office (J/TIP), one of their primary roles was to demand that other countries enforced their own laws. Granted, many of those laws were generated through British pressure. 46. Keith Hamilton and Patrick Salmon, \textit{Slavery, Diplomacy and Empire: Britain and the Suppression of the Slave Trade, 1807-1975} (Sussex Academic Press, 2009). 33.

\textsuperscript{28} Ibid. 45.

\textsuperscript{29} Ibid. 45.

\textsuperscript{30} Ibid. 45.

\textsuperscript{31} David Eltis, \textit{Economic Growth and the Ending of the Transatlantic Slave Trade} (Oxford University Press, USA, 1987).
**Chronology of Anti-Slave-Trade Treaties, 1803-1862.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Nation</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1803</td>
<td>Denmark</td>
<td>Slave Trade Ban</td>
</tr>
<tr>
<td>1807</td>
<td>USA</td>
<td>Slave Trade Ban</td>
</tr>
<tr>
<td>&quot;</td>
<td>Britain</td>
<td>Slave Trade Ban</td>
</tr>
<tr>
<td>1810</td>
<td>Portugal</td>
<td>Slave Trade only from Port. Holdings in Africa</td>
</tr>
<tr>
<td>1813</td>
<td>Sweden</td>
<td>Slave Trade Ban</td>
</tr>
<tr>
<td>1814</td>
<td>Netherlands</td>
<td>Slave Trade Ban</td>
</tr>
<tr>
<td>1815</td>
<td>Portugal</td>
<td>Slave Trade banned North of the Equator</td>
</tr>
<tr>
<td>&quot;</td>
<td>International</td>
<td>Congress of Vienna – Nominal Agreement to End Trade at Unspecified Point</td>
</tr>
<tr>
<td>1817</td>
<td>Spain</td>
<td>1) Slave Trade banned N. of Equator; 2) Right of Search, Mixed Commission Courts</td>
</tr>
<tr>
<td>1818</td>
<td>France</td>
<td>Slave Trade Ban (No Right of Search, Independent French Naval Patrol.)</td>
</tr>
<tr>
<td>&quot;</td>
<td>Netherlands</td>
<td>Right of Search, Mixed Commission Courts</td>
</tr>
<tr>
<td>1820</td>
<td>Spain</td>
<td>Slave Trade Ban (Right of Search already in Place)</td>
</tr>
<tr>
<td>1822</td>
<td>Spain</td>
<td>Improvement – Seizure if Slaves Had Been Carried</td>
</tr>
<tr>
<td>&quot;</td>
<td>Netherlands</td>
<td>Improvement – Seizure if Slaves Had Been Carried</td>
</tr>
<tr>
<td>1823</td>
<td>Netherlands</td>
<td>Improvement – Equipment Clause: Seizure if Outfitted For Slaving</td>
</tr>
<tr>
<td>1824</td>
<td>Portugal</td>
<td>Improvement – Seizure if Slaves Had Been Carried</td>
</tr>
<tr>
<td>&quot;</td>
<td>USA</td>
<td>Not Ratified – Right of Search</td>
</tr>
<tr>
<td>&quot;</td>
<td>Sweden</td>
<td>Right of Search, Mixed Commission Courts not required</td>
</tr>
<tr>
<td>1826</td>
<td>Brazil</td>
<td>Right of Search (Portuguese Treaties apply to Brazil)</td>
</tr>
<tr>
<td>1829</td>
<td>Brazil</td>
<td>Slave Trade Ban (Right of Search already in Place)</td>
</tr>
<tr>
<td>1831</td>
<td>France</td>
<td>Right of Search, French Vessels tried in National Courts</td>
</tr>
<tr>
<td>1833</td>
<td>France</td>
<td>Improvement – Equipment Clause: Seizure if Outfitted For Slaving</td>
</tr>
<tr>
<td>1834</td>
<td>Denmark</td>
<td>Right of Search, Equipment Clause (As all after, uses French Template for Clause)</td>
</tr>
<tr>
<td>&quot;</td>
<td>Sardinia</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>1835</td>
<td>Spain</td>
<td>Improvement – Equipment Clause: Seizure if Outfitted For Slaving</td>
</tr>
<tr>
<td>1837</td>
<td>Hanse</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Tuscany</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Uruguay</td>
<td>Right of Search, Equipment Clause, Mixed Commission Courts</td>
</tr>
<tr>
<td>1838</td>
<td>Sicily</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>1839</td>
<td>Chile</td>
<td>Right of Search, Equipment Clause, Mixed Commission Courts</td>
</tr>
<tr>
<td>&quot;</td>
<td>Venezuela</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Argentina</td>
<td>Right of Search, Equipment Clause, Mixed Commission Courts</td>
</tr>
<tr>
<td>&quot;</td>
<td>Haiti</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>1840</td>
<td>Bolivia</td>
<td>Right of Search, Equipment Clause, Mixed Commission Courts</td>
</tr>
<tr>
<td>&quot;</td>
<td>Texas</td>
<td>Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Mexico</td>
<td>Right of Search (with Geographic Limits), Equipment Clause</td>
</tr>
<tr>
<td>1841</td>
<td>Ecuador</td>
<td>Right of Search, Equipment Clause (Presumed), Mixed Commission Courts</td>
</tr>
<tr>
<td>&quot;</td>
<td>W. Africa</td>
<td>Treaties w/local leaders allow Assaults on Barracoons (begins – continues thru case)</td>
</tr>
<tr>
<td>&quot;</td>
<td>Austria</td>
<td>Quintuple Treaty - Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Prussia</td>
<td>Quintuple Treaty - Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>Russia</td>
<td>Quintuple Treaty - Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>&quot;</td>
<td>France</td>
<td>Not Ratified - Quintuple Treaty - Right of Search, Equipment Clause</td>
</tr>
<tr>
<td>1842</td>
<td>Portugal</td>
<td>Improvement – Equipment Clause, Renewed Search, Courts (Under Duress)</td>
</tr>
<tr>
<td>&quot;</td>
<td>USA</td>
<td>Webster-Ashburton – no Right of Search, but US pledges 80-gun Africa Squadron</td>
</tr>
<tr>
<td>1845</td>
<td>France</td>
<td>No Right of Search, but French match British Squadron off Africa (later reduced)</td>
</tr>
<tr>
<td>&quot;</td>
<td>Belgium</td>
<td>Quintuple Treaty - Right of Search, Equipment Clause (late accession)</td>
</tr>
<tr>
<td>1853</td>
<td>N. Grenada</td>
<td>(Present Day Colombia) Right of Search, Equipment Clause (Presumed)</td>
</tr>
<tr>
<td>1855</td>
<td>Sherbro</td>
<td>(Present Day Sierra Leone) Right of Search, Equipment Clause (Presumed)</td>
</tr>
</tbody>
</table>

(Sources: Loney Website, WEB DuBois, RN Admiralty Boarding Instructions.)
Spain. The British diplomatic campaign against Spanish participation in the Slave Trade serves as both prototype and archetype of the British strategy. The British incorporated the Spanish increasingly into their boarding regime through diplomatic leverage. Following this, British cruisers forcibly removed their flag from the trade.

Like most of continental Europe, Spain emerged from the Napoleonic Wars much the worse for wear. They were deeply financially and politically indebted to the British, whose aid in the Peninsular War played a pivotal role in the restoration of the Spanish Crown. These debts provided excellent leverage, which the Foreign Office put to quick use. While Spain refused a British offer of a $10M loan for immediate outright abolition, she acceded to geographic limits and the right of search in exchange for a less generous subsidy. This treaty banned the slave trade north of the Equator immediately, and south of it in 1820.

A supplemental treaty in 1822 allowed the seizure of ships that had carried slaves, regardless of whether or not the slaves were still on board. This improvement was primarily in response to

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the inhuman slaver tactic of drowning their captives prior to boarding in order to avoid prosecution. Per the ‘ratchet’ strategy, this improvement was incorporated as a standard clause in future treaty making.

While the whole of the Spanish trade was banned by 1820, enforcement was a different matter. At this point, the Royal Navy West Africa Squadron was still trying to catch its stride. We will explore this process in the ‘black market’ section, but the struggling squadron exacted a 10-20% toll on the Spanish trade during this period. Perhaps this pressure began to segment the Cuban market – according to British parliamentary papers, by 1832 the bulk of slave imports went to new buyers rather than established ones.34 As a form of protectionism, suppression theoretically favored those with established stocks of captives who could use demographics rather than trafficking to sustain production. Still, given the persistence of the ghastly sentiment that “it is cheaper to buy than to breed,”35 the degree to which this worked out in practice is uncertain.

In the mid-1830s, the Spanish government found itself embroiled in Civil War. The British intervened on the ultimately victorious liberal side, and as before, the Foreign Office used this leverage to extract a stronger anti-slave-trade treaty. The 1835 treaty included an Equipment Clause, already a feature of the Anglo-Portuguese, Anglo-French and Anglo-Dutch treaties. Under this provision, possession of distinctive slaving equipment within proximity of the African coast provided prima facie evidence of slaving, and such ships could therefore be seized. Slaver signature equipment included large amounts of low-quality food disproportionate to crew size,

lumber for building a ‘slave deck,’ and large numbers of shackles.\textsuperscript{36} With this improvement, the entire span of a slaver’s voyage – from outfitting through landing in the Americas – was legally proscribed under the Spanish Flag. The Anglo-Spanish regime was now, at least nominally, watertight.

While the Spanish flag’s participation was greatly reduced from this point through the remainder of the case, enforcement remained a challenge. Corruption was an endemic problem, especially amongst Cuban Captains-General (governor-equivalents.) While a number of these leaders\textsuperscript{37} were staunch opponents of the trade, one single point of failure can cause great damage to an otherwise watertight regime. General O’Donnell, Captain General from 1843 to 1848, actively thwarted of enforcement efforts and enriched himself on slaver bribes.\textsuperscript{38}

Despite questionable Spanish devotion to the cause of abolitionism, these sorts of consistent demonstrations of veiled British power extracted at least a modicum of compliance. The example of Portugal had been instructive to the Spanish Cortes:\textsuperscript{39} the Portuguese attempted to withdraw from the British boarding treaty regime and discovered that the British were willing to use unilateral force to keep them in place. Rather than the British enforce their vision of abolition on them, the Spanish Cortes passed a law in 1845 that applied criminal sanctions to participation in the slave trade. While deeply hampered by exceptions and loopholes, it nonetheless marked a drop in the trade.

\textit{Cuba.} After British intervention in Brazil in 1850, Cuba became the last holdout of the slave

\textsuperscript{36} Martinez, \textit{The Slave Trade and the Origins of International Human Rights Law}.
\textsuperscript{37} This is especially true of General Valdez, from 1840-1842. Murray, \textit{Odious Commerce}.
\textsuperscript{38} Ibid.
\textsuperscript{39} Cortes: Spanish Legislative Body. Ibid. 203.
trade. As we will discuss in the ‘black market’ phase, by this point the trade was a fully mature criminal enterprise. The Stars and Stripes complemented the Spanish flag as legal camouflage, but the veil of both flags had worn as thin as the British patience. Cruisers were generally unimpressed – approximately half of the vessels who attempted the passage were captured, even under the cover of these flags. Almost half of the slavers had abandoned legal registry by this point. Against a fully illegal and hardened adversary, enforcement was primarily a function of force.

The regime found Spanish allies willing to apply such force in Captains-General Serrano and Dulce, who governed Cuba from 1859 to 1866. They were firmly committed to abolition, even if not to emancipation. Just as networks allow illicit actors to re-route around the suppression regime, networks can also allow suppression actors to re-route around bureaucratic obstacles. These governors worked through international networks to finally bring an end to the trade. When the Spanish government demurred allocating proper funds to suppression, these leaders asked the British delegation to prevail upon Madrid to release funding.

Serrano attacked the trade at sea, building a flotilla of interdictors. Dulce took the more effective tack of attacking it on land. With proper harbors denied to the slavers, they would drop captives near plantations with the likely connivance of the plantation owners. Dulce began to hold these owners liable for any slaving on or near their beaches. In concert with the continuing British blockade and the withdrawal of the American flag from the trade in 1862, these actions sounded the death-knell of the Atlantic slave trade.

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40 Dorsey explores the role of Puerto Rico in the late trade; according to the Voyages database, Cuba absorbed 760k captives from 1808 to 1866, as opposed to Puerto Rico’s 18k. I therefore leave it out of this analysis for the sake of length. Dorsey highlights that Puerto Rico had less natural defenses for slavers than Cuba, but also much less British attention. Joseph C. Dorsey, Slave Traffic in the Age of Abolition: Puerto Rico, West Africa, and the Non-Hispanic Caribbean, 1815-1859 (University Press of Florida, 2003).
41 Voyages Database, 2010. 216.
42 Murray, Odious Commerce.
France. The French case is unique amongst the four major players in that they never fully integrated into the British boarding regime, yet neither became a major threat to the treaty network. Possessing the only other fleet of note, the French could rival the British suppression fleet and eradicate their flag’s participation in the trade. They were able to keep the British at arms’ length by handling the affairs of their own flag internally.

As a failed bid for goodwill prior to Waterloo, Napoleon banned his country’s participation in the Atlantic slave trade. This was something of a reversal, as he had revived the trade after his rise to power as a tool of economic expansion. After Napoleon was defeated and the British-led Seventh Coalition restored King Louis XVIII to the throne, the Bourbon King could not readily change course on this issue of British concern. Moreover, he had already agreed to ban the trade by 1819 under the 1814 Treaty of Paris. This came to pass.

Peace unsurprisingly brought a rise in the French slave trade. While the war disrupted all French maritime commerce, ports such as Nantes had deep roots in the trade. This economic interest was counterbalanced by a social dislike for the institution. The Marquis de Lafayette

44 Voyages Database, Port of Origin Variable.
was one of the leading voices in this movement.\textsuperscript{45} The geopolitical reality of British power demanded suppression, but the French demanded that suppression would happen under their own flag. As the chart below demonstrates (Fig. 7), the French were successful at suppressing their own slavers. More than half the French-flagged voyages that attempted the passage were captured. Four-fifths of those captures were by the French themselves, though a 55\% known conviction rate leaves much to be desired.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{Known Fates of Imputed French Voyages by Legal Status. (VADM: British Vice-Admiralty.) Voyages Database.}
\end{figure}

The accession of a new, more liberal king in 1830 spelled the end of the contested French slave trade. Interestingly, it did not spell the end of the French naval patrol. The British still sought to include the French in the right of search regime. In 1831 and 1833, the French agreed to the reciprocal right of search with an equipment clause, though without mixed commission courts. These treaties eventually lapsed, but the French flag’s use in the trade remained minimal.

In 1841, the British sought to sign a comprehensive multilateral ‘Quintuple Treaty’ between herself, France, Austria, Prussia and Russia. This revisited the relative failure of the Congress of Vienna multilateral negotiations with much the same players. The goal of this treaty was twofold. Overtly, the treaty sought to complete the net of anti-slave-trade treaties amongst sea-going powers. These flags covered only a miniscule amount of the trade – only one Russian vessel, and no Austrian or Prussian vessels are known to have made the passage since 1808.

The indirect but more important goal of the treaty was to induce the United States to join the boarding regime. If all other major powers would join a multilateral pact, “a confederated Europe” could jointly invite the United States to join the pact at British behest.46 American political elites might be persuaded to ratify the multilateral Quintuple Treaty, while they would surely eschew a bilateral treaty with their erstwhile foe. American political elites understood the gambit as well. Playing on the persistent French fear of ‘perfidious Albion,’ the American diplomat Cass convinced the French to withdraw from the treaty.47 With the French no longer participating, the British could not approach the Americans nor thereby close the regime’s most gaping hole. As some consolation, Belgium later joined under these premises.48 The British attempted a network closure strategy, but the Americans played a vetoing counter-strategy against a network weak point.

In the late 1840s, the British pressed the French to renew their reciprocal boarding treaties, but there was little need for a renewed regime and little French interest in drawing closer to their traditional rivals. Instead, the French offered to match the British suppression squadron ship-for-

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46 Mathieson, Great Britain and the Slave Trade, 1839-1865; Huzzey, Freedom Burning. 67.
47 Lewis Cass and Daniel Webster, Correspondence Between General Cass and Daniel Webster: In Relation to the Quintuple Treaty (Cincinnati Enquirer Office, 1844).
ship. This move was intended to advance French trading and economic interests while calming British demands. In contrast to the American tepid commitment to meeting patrol-force treaty obligations, the French produced a force comparable to the British, which was far more than what was required for their minute residual trade.

Soon, this number was halved, which still left far more ships than were needed, since the French cruisers could only board French-flagged slavers, which had effectively gone extinct. The French flag significantly participated in the trade only from 1813 to 1833. While inefficient in terms of absolute force, the overall French willingness to use overwhelming power against their own slavers ensured that their flag did not become an effective illicit sanctuary.

**Minor Players.** The British were quite comprehensive in their treaty-building efforts, even with minor players or non-players in the trade. While only twenty recorded voyages attempted the passage under these flags since 1808, these treaties could be obtained with little effort and negligible cost. They pre-emptively locked slavers out of flags that could potentially have provided them immunity. Adding these nations also built an international norm, which aided negotiations in general. To their credit, by the time British were done, one could trace these treaties along the European coastline from the Kara Sea to the borders of the Ottoman Empire.49

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49 This excludes the Papal States and depends on how liberally the ‘Hanse Cities’ are interpreted; if considered only Lubeck, this excludes the fragmented German states along the Northern European coast as well as Belgium.
From 1836 until 1843, Parliament enacted a series of eight bills that authorized the immediate execution of any anti-slave trade treaties through ‘orders in council.’ These intriguing diplomatic ‘friction-reducers’ accelerated the process of treaty building by delegating execution powers. The tradeoff was less Parliamentary oversight and control in exchange for quicker response times. Against an adaptive trade, this was a good exchange. Since anti-slave trade treaties had become largely boilerplate by this point, the need for direct control was reduced. This measure supported the larger treaty-building enterprise, recalling our theme of the effectiveness of ‘market-like’ flat networks against illicit markets.

Following this effort to lock out minor flags, a large number of slavers abandoned proper registries entirely in favor of false flags or none at all. Very few attempted flag-swaps, as there were no further flags to which to swap. Without legal cover, slavers were now profoundly vulnerable to British cruisers, which during this period were increasing in effectiveness. This fight will be covered at length in the next chapter. The British effort with the minor players

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precluded illicit network re-routing at very low cost, and must be judged a success.

1835-1850: LORD ‘PUMICE-STONE’ AND BULLDOZER DIPLOMACY.\(^{51}\)

The second phase left the slave trade channelized to Brazil and Cuba, and left the British with marginal standing to bring force to bear against these two now-discrete problems. Following network logic, the trade had less room to maneuver and the British had less ambiguity to navigate. With reduced re-mapping ability, the trade was now vulnerable to the direct application of force. Since the Spanish reached an accommodation with the regime for the time being concerning Cuba, Palmerston’s Britain was able to isolate and strangle the Portuguese slave trade to Brazil. He did so using his characteristic gunboat diplomacy; for all its complications, these policies closed down the slave trade route from South-West Africa to Brazil. This left only the Cuban trade, to be dealt with in the last phase.

During this period, the Royal Navy began a series of politically controversial amphibious assaults on the trade’s infrastructure in West Africa. In order to secure a free hand to conduct these raids, British captains increasingly engaged with leaders ashore. This led to the development of a second treaty network – ‘engagements’ with West African political leaders provided the cruisers legal standing to seize and destroy European-owned slave fortresses ashore. Since on-scene Royal Navy captains drove this network, rather than the foreign office, we will discuss it in the next chapter as a function of Africa Squadron operations.

On both sides of the Atlantic, the Navy was the visible face and leading front of British policy. As opposed to the previous period of friendly treaty building, this phase was written primarily with powder rather than ink. Diplomacy was used to lock in gains from interventions,

and ultimately to lock out the southern route of the residual trade.

**Portugal and Brazil.** These flags account for the bulk of captive traffic since 1808. Brazil had a perennial labor shortage amidst vast territory and nascent markets. Lusitanians had the most to lose from the death of the slave trade. Still, they emerged from the Napoleonic wars very weak and very indebted to the British. The early trajectory of British engagement with the Portuguese tracks roughly with that of the Spanish. In exchange for debt assistance, the Portuguese agreed to limit the trade to south of the equator in 1815. However, they set the late date of 1830 for an outright ban of the trade.

An 1817 treaty instituted right of search, and an 1824 improvement incorporated early innovations such as a ‘prior slave carriage’ provision and a very limited equipment clause. These additions made the North of the Equator ban enforceable, but this had limited effect on the trade itself, as slavers could simply geographically displace below the Equator.
The Brazilian independence struggles of the early 1820s complicated this equation, but simultaneously provided new points of leverage. The new nation needed diplomatic recognition and friends. Famed British Admiral Thomas Cochrane played a key role in the establishment of their navy during the struggle.\textsuperscript{52} In exchange for British support, the Brazilians agreed to comply with the requirements of the previous Portuguese treaty without the geographic stipulations. These came into effect in 1830, the intended date of Portuguese abolition. Due to this ban, as well as a glut of captives already in Brazil, the trade experienced a deep trough from 1830 to 1835.

Unfortunately, this cooperation decayed quickly as the trade reinvented itself as a lucrative criminal enterprise. By 1835, the flow of captives rivaled previous peaks.\textsuperscript{53} The Brazilians had come to resent the concessions extracted from them during the independence struggle, though this resistance was primarily from the slave-holding elites who dominated the government. Essential improvements to the boarding treaty regime were resisted. The generally abolitionist nascent middle class, on the other hand, were sympathetic to the British campaign. Their ascendancy in Brazilian politics provided the later end-game for the Southern trade.\textsuperscript{54} For the time being, though, the “slave power”\textsuperscript{55} held the reins and enforcement was farcical.

The Portuguese situation was little better. While they had nominally banned the trade, there was no right-of-search for the British below the equator. This rendered legal abolition meaningless, resulting in a situation where, “at the end of almost a decade of negotiations with Portugal and Brazil, no effective Anglo-Portuguese anti-slave had been signed, nor had essential

\textsuperscript{52} David Cordingly, \textit{Cochrane: The Real Master and Commander} (New York: Bloomsbury USA, 2008).
\textsuperscript{53} Voyages Database.
\textsuperscript{55} Phrase from Frederick J. Blue, \textit{No Taint of Compromise: Crusaders in Antislavery Politics} (Louisiana State Univ Pr, 2006). With all the loaded connotations.
equipment and break-up articles been added to the Anglo-Brazilian treaty. As a result, throughout this period the British navy’s powers to suppress, or even to contain, the illegal slave trade to Brazil remained severely limited.”

During this time, the Spanish were effectively holding the British at bay by signing whatever treaties were requested of them. Accordingly, the British abstained from applying their more muscular measures to the Cuban trade. The Portuguese and the Brazilians were another story: the Anglo-Portuguese was effectively lapsed, and the Brazilian treaty lacked critical improvements that were being actively exploited by the trade. These flags covered the overwhelming majority of slavers since 1808. By drawing out negotiations, these powers left open a yawning gap in the regime through which the trade poured unabated to Brazil. The Spanish were content with their accommodation, which left the Portuguese diplomatically isolated.

Viscount Palmerston, the controversial British Foreign Secretary whose ‘gunboat diplomacy’ embodied the contradictions of the British Imperial mission, took the helm of British interventionism during this period. When negotiations for a renewed boarding treaty with the Portuguese stalled in the late 1830s, Palmerston unilaterally enforced his interpretation of Portuguese treaty commitments. When the Portuguese refused to sign a renewed treaty authorizing boarding across the whole Atlantic, Palmerston advanced a bill in Parliament that empowered Royal Navy cruisers to take these actions themselves. “Palmerston’s Act,” as it became known, gave sweeping powers to captains to seize vessels under the Portuguese flag and send them to the British-owned Vice Admiralty courts. Preventative Squadron leaders hailed

this as “the first great blow,” (Matson) and “the first time when suppression became possible.” (Denman)⁵⁸

While this stirred up a great deal of resentment in Portugal, the Portuguese government had little leverage. The zeitgeist was against a defense of the slave trade on the grounds of national autonomy; the predominance of British power would have made any such effort futile. To remove this national embarrassment, the Portuguese gave the British their law – a comprehensive treaty, without geographic limits, with all contemporary improvements. Thus, in 1842, the Portuguese flag departed the trade.⁵⁹

By this time, Lord Aberdeen had taken charge of the Foreign Ministry in a change of government. He openly questioned the legality of Palmerston’s actions, but when the Brazilian-flagged trade continued un-abated, he arrived at similar conclusions. “Aberdeen’s Act” of 1845 presented an ultimatum to the Brazilian government similar to that presented to the Portuguese. If effective enforcement were not in place by 1850, the British would put enforcement to their liking in place on their own.

British domestic frustration with the seeming lack of progress had been mounting since the 1830s. Opponents of suppression argued, fairly accurately, that as many captives were moving in the late 1840s as they ever had during the legal trade.⁶⁰ The suppression regime faced a two-front political challenge during this period: on one hand, the more pacific elements of abolitionism were losing hope in suppression by force and increasingly saw the naval patrol as an ineffectual distraction, and even a source of increased suffering for captives.⁶¹ On the other hand, radical free-traders held that the market itself would correct the slave trade, and the naval

⁵⁸ Rees, Sweet Water and Bitter. 188.
⁵⁹ Huzzey, Freedom Burning; Lloyd, The Navy and the Slave Trade;

suppression efforts interfered with legitimate commerce. The supporters of the diplomatic and naval campaign against the trade retained a slim majority against these challengers.

Figure 22: British Expenditure on Slave Trade Suppression (Courtesy Huzzey, 43.)

Palmerston’s aggressive approach tripled the cost of suppression. While the previous stages of the ‘ratchet’ strategy slowly expanded without sparking domestic counter-movements, this stage’s more dramatic strategy was to break through blockages. The cost and aggressiveness of the policies of this period triggered a support check. A faction of Parliament led by Mr. Hutt, a

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60 Rees, Sweet Water and Bitter; Lloyd, The Navy and the Slave Trade. 
61 Mr. Hutt made such an argument to in his Parliamentary select committee against the campaign. Lloyd, The Navy and the Slave Trade; Rees, Sweet Water and Bitter.
62 “The costs of suppression exclude indirect expenditure and are expressed as a percentage of government expenditure and in real terms. All values are converted to 1821-1825 constant pounds sterling using the two price indices reprinted by Mitchell, calculating the ratio of the later to earlier series using an average of the ratio in overlapping years. The figures preceding 1854 capture calendar years ending 6 Jan, with subsequent dates for years ending 31 March; the first three months approximating expenditures of 1854 have been consequently excluded from these figures to avoid double counting and artificially inflating expenditures that year. Sources: Eltis, Economic Growth, 96; BR Mitchell, British Historical Studies, 2nd ed. (Cambridge, 1988,) 721-24, 587-95. Produced by Cartography Unit, Plymouth University.” Huzzey, Freedom Burning, 43.
radical free-trade advocate, assembled a select committee and began campaigning to end the campaign.

Captain Denman, former commander of the West Africa Squadron’s Sierra Leone Division, publicly answered these charges in a widely distributed pamphlet. Denman’s previous exploits in the squadron earned him public recognition and therefore legitimacy. Along with his comrade Captain Matson, he argued for even more aggressive tactics, better ships and more time. Denman’s father, the Lord Chief Justice Denman was Palmerston’s political ally on the slave trade issue. Lord Denman served as a political leader of the British abolitionist movement, and aggressively promoted his son’s arguments in his social circles.

For a time, it seemed that Hutt would have the better of the argument. The Select Committee on the Slave Trade found broadly in support of his faction – suppression was ineffective, the trade outmatched the Royal Navy squadron, and it was difficult to identify actual progress from the campaign. From an 1850 newspaper: “a negative opinion on the effectiveness of the squadron had taken such a hold of MPs, and, it must be presumed, of their constituents, that… it was feared that there would be an absolute majority in favor of the motion, so apathetic and indifferent, if not opposed, have the people of England now become to a question that was wont to arouse their warmest sympathies or their strongest indignations.”

This is a persistent problem of counter-network campaigns. Like damming a stream, where the flow of water continues unabated until the last few rocks and branches, the effects of consistent progress do not necessarily become manifest until the very end. It is difficult to determine if you’re winning until you’ve won – especially if you’re using first-order metrics

63 Rees, Sweet Water and Bitter; Lloyd, The Navy and the Slave Trade;
such as illicit flow. From a network perspective, the British had made significant progress at this point in pinning down the illicit market. The trade was at this point channelized to two streams, one of which was nearly disrupted. From a raw empirical perspective, this progress does not register – nearly as many captives were moving as ever.

In Philip Curtin’s phrase, this vote was “the last important stand of humanitarian politics.”65 Fortunately, senior Parliamentary leaders interpreted these findings as a reflection of inadequate forces rather than on the impossibility of the object.66 The Whig government confronted Hutt’s committee head-on through party politics:

“Now for the first time since the Whig defeat of 1841 over sugar duties, a government had to openly stake its survival on the outcome of a vote related to slavery. Prime Minister Russell and Foreign Secretary Palmerston gave intention of their intent to resign if Hutt’s motion was supported by a parliamentary majority. Party loyalty and the prospect of an election comfortably carried the day, 232 votes to 154.”67

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65 Ibid. 191.
66 Rees, *Sweet Water and Bitter*.
Following the defeat of the motion, Palmerston doubled down on suppression. Denman’s requests for increased forces, improved technology and aggressive tactics were answered. Surviving this vote serves as an example of the still-robust abolitionist social networks, paired with the increasingly robust suppression networks. Viscount Palmerston and Captain Denman fit the leader-linker archetype; Palmerston kept the campaign viable in the public square, while Denman advanced the campaign through grassroots tactical innovation.

Denman eagerly seized the opportunity presented by the law to take action against Brazil. In another leader-linker archetype, the Royal Navy commanders he dispatched to the Brazilian coast made use of all the authority his laws granted them. To the point of boarding, liberating and burning slave ships at their moorings in Brazilian harbors, the British intervention was an open and provocative challenge to the Brazilian government. This was a risky course – while open conflict was unlikely, backlash inside Brazil was a clear possibility. While the British justified their actions based on Brazilian laws and treaty precedent, the Brazilians had *casus belli* if they wanted it. They did not.

Drescher describes how the exogenous pressure of British force reshaped Brazilian domestic politics:

“The overriding fact is the lack of any economic or demographic arguments against the trade, either in Britain or in Brazil at this climactic moment. In pleading for suppression before the Brazilian Chamber of Deputies, the conservative minister of Foreign Affairs, Paulino Jose Soares de Sousa, did not hide the fact that British naval action had precipitated the crisis. Brazil’s economy still depended on importations of

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68 Rees, *Sweet Water and Bitter*; Lloyd, *The Navy and the Slave Trade*;
slaves, but Brazilian planters would have to adapt to abolition or face a ruinous war with Britain. A temporary slave glut, planters’ indebtedness and mortgages to Portuguese slavers may have played their role in lowering planters’ resistance at the moment of decision, but ‘there is little evidence for thinking that in the years 1849-1850 the landed interest, or indeed any important section of the landed interest, was demanding the abolition of the African slave trade.’”

A desire to resolve the crisis led to changes in domestic policy and effective domestic enforcement. This, in turn, locked the Southern route of the trade by permanently disrupting demand. Only Cuba remained, and with it, the perennial challenge of the American flag.

**1850-1865: Patching the Last Hole.** The last phase of the campaign attacked the one remaining channel of the illicit network: the American-flagged illicit trade to Cuba. The British had the overwhelming advantage of an expansive counter-network at this point. The treaty network was complete, with the glaring exception of the United States; the Royal Navy was driving the trade down the African coast with an increasingly airtight series of pacts with African leaders; the Brazilian trade had been crushed. There was little to no room for re-routing.

Palmerston once quipped that he did not “‘conceive that the mere refusal of the United States to concur in mutual right of search would, of itself, be sufficient to defeat the naval police if all other nations had united in the common league.’ Even without the cooperation of the United States, the slave trade to Brazil and Cuba could be brought to ‘a very narrow limit indeed.’”

This was in part true – the trade to Brazil had been extinguished. The Cuban trade proved more resilient than he had hoped.

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70 Ibid. 191
The illicit trade had three key factors still in its favor: first, the remaining corps of slavers was hardened and experienced in blockade-running. Second, Anglo-American relations had hit a touchy point - British implicit boarding arrangements with the Americans were failing, leaving the American flag open as cover. Third, demand to Cuba led a revived trade, willing to pay the high prices required to subsidize costly slaver adaptations.

This phase, and with it the whole case, was brought to a favorable conclusion through three factors. First, sustained British pressure inflicted near 50% losses on the slavers, and those who made it paid high prices in bribes and countermeasures. Second, Cuban Captain-General Dulce put in place aggressive enforcement measures, with the joint backing of the British and his own government. Finally, the late entry of the United States into the boarding regime denied the slavers their last legal sanctuary.

**United States.** The Anglo-American relationship during this time was complex. The Americans played the role of geo-political spoiler, and saw a predominance of British power as an obstacle to their economic rise. The British found the United States generally frustrating, though following the unproductive War of 1812, demurred from direct conflict. Still, despite key missteps and missed opportunities, the British were able to navigate this space well enough
to keep the American flag functionally out of the trade until nearly the end of the case.

The United States banned the trade simultaneously with the British in 1808. Though a provision in the Constitution provided a twenty-year reprieve for the trade, when that provision lapsed, the American importation of captives effectively ended as well. While this may seem puzzling given the period’s divisions over slavery, the ban provided a form of protectionism to planters, whose growing captive populations became the only new source of captive labor. Until the immediate antebellum period, where Southern ‘Fire-Eaters’ briefly attempted to re-open the trade on ideological grounds, American markets were no longer a major destination for the trade.

American ships, American money and the cover of the American flag were another matter entirely. The United States lacked the resources or the will during this period to police the use of their flag on the Atlantic, and longstanding bitterness with the British impeded co-operative enforcement agreements. However, where formal bargains cannot obtain, tacit agreements may do the trick. From the initial American ban through at least the 1840s, American political leadership was generally content to let the British solve their enforcement problem for them. That is, provided the British took all of the liabilities upon themselves should a vessel turn out to be a legitimate merchantman. As additional stipulations, the British could not publically acknowledge the arrangement and therefore weathered the occasional public rhetorical assault.

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from American politicians for their actions. The blame for this unequal arrangement is not entirely one-sided: perhaps if the British had abandoned impressment prior to the War of 1812, or been content with less exacting treaties for the time being in the 1820s, a more conventional reciprocal boarding agreement might have been forthcoming.

The first American slaver apprehended for illegal slave trading was caught and prosecuted in 1809, by the British. The Americans declined to pursue the matter diplomatically, which sent a signal to the slavers that the American flag was unsafe. A brief spurt of further British prosecutions deterred the trade away from the American flag for the time being. The British rightly bet that the slavers could not demand that the US Government recover their ill-begotten goods for them. While pressing maritime rights against the British always garnered easy domestic political points, there was little interest in defending illegal slavers.

With particularly importune timing, the “sailor’s rights” issue came to a head in the Anglo-American War of 1812. While largely inconclusive, this conflict created a rhetorical trap for successive American administrations. Agreeing to anything smacking of British maritime heavy-handedness was politically infeasible; anglophobia played well within the American political system, and adversaries would lambast any administration appearing soft on the British. This effect was so extreme that even abolitionist John Quincy Adams declared that signing a

75 The American diplomat General Cass expressed this opinion fairly frankly to the British, holding that it was appropriate for the British to continue to board while taking all the risks upon themselves for doing so. In this arrangement, the American-flagged illegal slave trade never became too much of an embarrassment, while the US Government isolated itself from risk from its constituents, by reserving the right to lambaste the British when things did not turn out usefully. Huzzey, *Freedom Burning*; Murray, *Odious Commerce*.

76 Voyages Database, also Huzzey, *Freedom Burning*; Mathieson, *Great Britain and the Slave Trade, 1839-1865*.

British boarding treaty would “make slaves” of American sailors. While the Treaty of Ghent ending the War of 1812 included language about anti-slave-trade cooperation, the deeper distrust of British power remained an enduring problem even to the end of the case.

Similar to the French, the United States attempted to suppress its own involvement in the trade through unilateral force. The United States advocated internationally for a piracy-based approach to the problem as a counterpoint to the British regime approach. Domestic legislation in 1820 designated the slave trade as piracy and held trans-national slavers subject to the death penalty. Similar to the British prize system, Congress authorized the United States Navy to patrol off West Africa and established bounties for slave ship captures. The establishment of Liberia in 1820 provided a port for these itinerant patrols. For the next year, American captains aggressively enforced their laws. In the spring of 1820, the frigate *USS Cyane* landed the first colonists in Liberia and then proceeded to seize or destroy seven slavers. A two-ship squadron replaced the *Cyane* later in the year and proved similarly successful, but the two schooners that replaced them had less luck.

The French flag dominated the Caribbean trade at this point; Matthew Perry’s *USS Shark* was forced to release a number of French slavers and went home without a prize. The more aggressive *USS Alligator* sent four French slavers to New York under prize crews – the slaver crews retook three of them. The fourth, *Jeune Eugenie*, sparked diplomatic controversy with the French and an 1822 court case, which dampened enthusiasm for continued suppression. This

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80 Ibid. 154.
81 Ibid. 154.
82 Ibid. 154.  Taken directly.
paralleled the British 1817 *Louis* case that ended British official unilateral boarding. Upon his return, Perry confirmed the Congressional opinion that the American flag had exited the trade: “I could not even hear of an American slaving vessel; and I am fully impressed with the belief that there is not one at present afloat.”84 With the sound, fury and lack of follow-through characteristic of kinetic interventions, American policymakers considered the matter concluded, withdrew this proto-Africa-Squadron and moved on to the next problem.

Slaver use of the American flag had been effectively suppressed at this point. If this solution could have been institutionalized in the treaty network, it is likely that the flag may have remained out of the trade for the duration. Anglo-American distrust was not wholly insuperable on the issue of the trade. 1824 presented a great missed opportunity for the treaty network. Even after the Secretary of State John Quincy Adams rebuffed British Foreign Secretary Castlereagh in 1820, Congress began moving in favor of cooperative action with the British. This culminated in a 131-9 vote to denounce the trade as piracy and conduct negotiations “for … effectual abolition.”85 After both congressional and presidential advisory councils recommended joining the British boarding regime as the only effectual means to permanently eliminate the trade,86 the United States entered into negotiations with Great Britain on a right of search treaty.

The proposed arrangement with the British respected American sensibilities through using national courts and piracy language, and in return the British received their desired right-of-search status. While the broad framework was workable from both sides, the treaty ran afoul of politics. In order to discredit Adams, Senate supporters of a political rival attacked his treaty

85 Ibid., 158
with killer amendments, two of which actually proved fatal.\textsuperscript{87} Searches in American waters and seizures of third-party chartered vessels were disallowed in the Senate version.\textsuperscript{88} In a departure from their typical pragmatic ‘ratchet’ strategy, the British insisted on these two measures, and refused to sign. This resulted in no treaty at all, and no precedent for Anglo-American cooperation.

When the British revisited the question in 1831, now willing to sign the treaty as amended, the atmospherics were quite different. Slavery had become increasingly the defining issue of American politics, and Secretary of State John Forsyth was adamantly opposed to “any convention on the subject.”\textsuperscript{89} The window for the treaty had passed. This network hole would remain open, and would be a source of vulnerability and frustration for the British.

The Anglo-American tacit agreements, though, held in place and deterred slavers from the American flag through the 1830s. Interestingly, the American criminal code on the issue of slave-trading was even more severe than the British.\textsuperscript{90} British cruisers would use this to their advantage, by boarding American-flagged slavers and threatening to turn the crews over to American criminal prosecution. Since this potentially could result in hanging, a number of slavers would toss their American registration papers over the side and claim to be running under no flag at all. If the slaver abandoned their American registration, the British would seize them as an illegal vessel and deliver them to the Vice-Admiralty court.

\textsuperscript{87} Huzzey, \textit{Freedom Burning}. 160
\textsuperscript{89} Huzzey, \textit{Freedom Burning}. 161
\textsuperscript{90} The British also labeled the trade piracy for their citizens, but they soon reduced the penalties to ‘transportation’ to a penal colony rather than hanging. (“An Act to Amend certain Acts Relating to the Crime of Piracy.” British Parliamentary Act, 17 Jul 1837.) Note that the use of increasingly draconian penalties to compensate for poor enforcement is a sign of state weakness. The expected value of punishment is a function of the penalty and the probability of capture. Therefore, states that cannot or will not improve enforcement can simply stiffen their penalties. This parallels Albania in the modern anti-trafficking case, which has severe and largely unenforced laws against trafficking.
The use of foreign domestic laws as leverage, while still contrary to the principles of international law, gave the British some assurance that the trespassed-against country would not raise issue with unilateral action. This played to the British diplomatic successes in extracting nominal anti-slave-trade laws from erstwhile partners. This strategy was applied to foreign citizens in slave fortresses in Africa as well. In Denman’s words: “I conceive that the destruction of barracoons and slave places not in settlements belonging to European Powers would be justifiable all over the coast… upon the footing that the law of nations can afford no sort of recognition of the dealing in slaves by Spaniards in a foreign country. And secondly, that those persons were criminals by their own laws, and could not look for protection to their own government.”

Using tactics such as these, the British were able to put down at least three small outbreaks of slavers flying under the American flag. By managing these before they became significant enough to catch the interest of American policy-makers, the tacit bargains held. Slavers preferred the lower-risk Portuguese, Brazilian and Spanish flags until improved British enforcement injected enough risk into those flags to shift the calculus back.

During the mid-1830s, slaver demand for the Stars and Stripes increased past the point that these tacit agreements could quietly manage. Complicating matters further, American consul Nicholas Trist used his post in Cuba as a platform for protecting the slave trade. Motivated by a mix of anglophobic animosity, pro-slavery ideology and simple self-enriching corruption, Trist issued large numbers of false documents throughout the 1830s. His actions were eventually discovered, and tangentially linked to the false registrations exposed in the Amistad case; he was

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removed from his post in 1840.93

This demonstrates the damage that individuals and rare events can do within a complex, networked problem. One man, contrary to the wishes of his government, personally created a major impediment to the suppression effort. Fighting a network is less like moving pieces in chess, and more like moving stones in go – one gap can invalidate a wall of defenses. Conversely, if the suppression regime is built to take advantage of these rare events, it can similarly re-route around blockages.

US Navy Africa Squadron. In response to British enforcement pressure, and in an effort to keep the British at arms length, the United States sent naval patrols of West Africa. This began with expeditions from 1820 through 1823, which included some degree of coordination with the British patrol.94 These became a regular presence in the 1840s with the increasing use of the American flag in the trade.95 As part of the 1842 Webster-Ashburton treaty, the United States pledged to maintain an 80-gun squadron off the West African coast. This squadron remained in place until the American civil war, but typically at a strength well below treaty obligations.

As opposed to the French, the US Navy’s Africa Squadron saw largely disappointing results. The French had a large navy in relatively close proximity to West Africa, and therefore were able to police their trade without effective coordination with the British. The Americans did not have adequate forces for this brute force algorithm. While the officers of the patrol generally did their best to manage a difficult task, they were not provided with the resources or the senior

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95 Canney, Africa Squadron. 17.
support that their task demanded.\textsuperscript{96} As demonstrated by the brief successful partnerships between American and British commanders (and the general failure when these partnerships were undone), coordination was essential to the success of the USN Africa Squadron.\textsuperscript{97} Such support was not forthcoming.

To the credit of these officers, they were often willing to innovate creative coordination solutions even when their government was not. In 1840, Lieutenant Paine of the \textit{USS Grampus} worked out an effective scheme with his opposite number, Commander Tucker of the \textit{HMS Wolverine}. Paine liberally interpreted his orders for “friendly co-operation” with the Royal Navy as a practical right-of-search authorization.\textsuperscript{98} Per their governments’ instructions, neither Paine’s American cruisers or Tucker’s British cruisers would board each other’s vessels.

Instead, the British would detain American-flagged cruisers until American cruisers could search them and vice versa. This plan worked well as long as it lasted - Paine’s superiors quickly quashed his arrangement upon discovering it.\textsuperscript{99} A similarly effective and similarly shot down plan placed US Navy liaison officers aboard British cruisers for searching American vessels.\textsuperscript{100}

Lieutenant Paine continued to publically advocate for increased partnership with the Royal Navy.\textsuperscript{101} These men opposed the trade on a moral level, and were therefore willing to take professional risks to advocate for effective enforcement. As with their British counterparts, their advocacy depended on movements - as fields of networked norms, movements provide

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\textsuperscript{96} Ibid.
\textsuperscript{97} Ibid.
\textsuperscript{98} Huzzey, \textit{Freedom Burning}. 164.
\textsuperscript{99} Ibid.
\textsuperscript{100} Ibid.; Lloyd, \textit{The Navy and the Slave Trade}; Murray, \textit{Odious Commerce}. For a primary account of the need and desire for cooperation, see Nathaniel Hawthorne’s edited account of Horatio Bridge, \textit{Journal of an African Cruiser: Comprising Sketches of the Canaries, the Cape de Verds, Liberia, Madeira, Sierra Leone, and Other Places of Interest on the West Coast of Africa}, 1 (Wiley and Putnam, 1845), http://books.google.com/books?hl=en&lr=&id=qpHVAAAMAAJ&oi=fnd&pg=PA1&dq=bridge+hawthorne+afri
can+cruiser&ots=z7rJIC--DVN&sig=IMR17LfKNeq_0V2u_HaKVXGZPs.
\textsuperscript{101} He was joined in this by fellow USN Africa Squadron captains Charles Bell and Andrew Foote.
\end{flushright}
individuals with avenues to influence institutions. In this inside/outside game, an institutionally empowered expert can make a public appeal and thereby alter their institutional constraints. A junior officer with a disruptive opinion can circumvent blocking players by taking the debate into the public square.\footnote{General Petraeus’ use of Small Wars Journal and academic alliances with Elliot Cohen to advance Counter-Insurgency theory (often against the wishes of his seniors) serves as an example of this. The COIN Field Manual a direct example of the role of the interpreter. N. P. R. Staff, “‘Insurgents’ Hoped To Change Military From Within,” NPR.org, accessed February 10, 2014, http://www.npr.org/2013/01/24/169905944/insurgents-hoped-to-change-military-from-within; Octavian Manea, “Reflections on the ‘Counterinsurgency Decade’: Small Wars Journal Interview with General David H. Petraeus,” Small Wars Journal (September 1, 2013), http://smallwarsjournal.com/jrnl/art/reflections-on-the-counterinsurgency-decade-small-wars-journal-interview-with-general-david.}

Captain Denman’s closest American equivalent was Commander Andrew Foote. An outspoken evangelical Christian, he was broadly sympathetic to abolitionists prior to being assigned to the Africa Squadron. His experiences as part of the squadron hardened these convictions and propelled him into public advocacy for muscular suppression.\footnote{Andrew H. Foote, Africa and the American Flag (New York [etc.] D. Appleton & Co., n.d.); Huzzey, Freedom Burning.} As a result, he wrote a book and a pamphlet arguing for increased forces and partnership with the British. He was an outspoken opponent of “consular sea-letters,” which allowed American-flagged vessels to be transferred to other owners while on a voyage.\footnote{Foote, The African Squadron, Ashburton Treaty, Consular Sea Letters.} These were of obvious use to slavers, and Foote recommended suspending this practice for vessels outbound to Cuba or Africa. Regional fractures over the broader issue of slavery prevented Foote from replicating Denman’s success.\footnote{Foote served with distinction during the American Civil War, making use of the small ship tactics that he built in the Western Gunboat Flotilla, where he reached the rank of Rear Admiral. Unfortunately, he passed away soon after. Like Denman, Foote hoped to return to the USN Africa Squadron and implement his proposed reforms; like Denman, he was unable to do so. By the end of the American Civil War, the illegal trade off West Africa had effectively ended. Mason Hoppin James Mason Hoppin, Life of Andrew Hull Foote (Applewood Books, 2009).}

The efforts of these officers were not entirely in vain. Viscount Palmerston built upon the Tucker-Paine Cooperation by arguing for a distinction between the right of search, which
determined whether or not a vessel illegally had captives aboard, and a right of visit, which
determined if a ship was properly registered for the colors under which it was sailing.\textsuperscript{106} The US
government remained unwilling to approve any formal cooperation with the British, but was
willing to accede to tacit versions of the same. During negotiations over the Webster-Ashburton
treaty in 1842, the American diplomatic envoy General Cass came nearly explicitly
acknowledged this understanding. When confronted about whether he thought it was
appropriate that the British board probable American slavers but take the legal risk for doing so
upon themselves, he responded in the affirmative.\textsuperscript{107}

The British indirectly formalized this arrangement in 1844. Captain Denman was building a
boarding manual for the British squadron, which included instructions to cruisers and all relevant
treaties. The manual directs captains to determine, by boarding if necessary, whether a ship
under a non-participating flag is properly registered. The language was clearly directed toward
the United States, and when the boarding manual was sent to American envoys for review, they
had no objections.\textsuperscript{108} Both sides were fastidious in respecting the sensitivities of this
arrangement. The British instructed their captains to provide immediate restitution to any
legitimately registered American vessel, regardless of whether it was carrying slaves.\textsuperscript{109} They
also were deliberate not to foreground American complicity in the practical right-of-visit
agreement.\textsuperscript{110} In return, the United States lodged no protests over the capture of slavers.\textsuperscript{111} This
arrangement explains the continuing high numbers of captures of American-flagged vessels, as

\textsuperscript{106} Great Britain Admiralty, \textit{Instructions for the Guidance of Her Majesty’s Naval Officers: Employed in the
\textsuperscript{107} Mathieson, \textit{Great Britain and the Slave Trade, 1839-1865}. 163.
\textsuperscript{109} Huzzey, \textit{Freedom Burning}. 170.
\textsuperscript{110} Ibid. 170.
\textsuperscript{111} Ibid. 170.
depicted in Figure 10 below.\textsuperscript{112}

![Figure 23: Captures of American-Flagged Vessels by Nation (Voyages Dataset.)](image)

In the mid-1850s, after the extinction of the Brazilian slave trade, resurgent Cuban demand led to a partially reconstituted trade conducted under the American flag. This, in turn, led to the final treaty-building enforcement effort. The trade was completely channelized at this point – there were no practical re-mapping options left, and the trade now relied on a series of costly countermeasures and the American flag as its last defenses.

The deteriorating American political situation in the worked in the slavers’ favor –the antebellum United States was in no position to build workable arrangements against the trade. A few radical pro-slavery activists even attempted to re-open the slave trade to the United States.\textsuperscript{113} Only one confirmed ship made the transit, but incendiary rumors sparked a fruitless 1859

\textsuperscript{112} Derived from Voyages Dataset, 2010.

\textsuperscript{113} The most famous case of this is the Wanderer, a Charleston yacht contracted by ‘fire-eater’ radicals to transport slaves from Africa to the United States in 1858. The vessel was eventually apprehended and put into US Navy service. Canney, \textit{Africa Squadron}; Erik Calonius, \textit{The Wanderer: The Last American Slave Ship and the Conspiracy That Set Its Sails} (New York; Godalming: St. Martin’s ; Melia [distributor], 2008).
The perception of renewed American imports was likely hyperbole amplified by sectional conflict. Conversely, the involvement of American flags, hulls and money in the trade was a certainty.

Counterbalancing this advantage, the trade’s foes had become increasingly adept at working together. As discussed earlier, Cuban Consuls-General Serrano and Dulce began serious enforcement under the Spanish flag of slavers inbound to Cuba. The American consul Thomas Savage, though no abolitionist, provided an excellent contrast to his predecessor Trist. He built an intelligence network and attempted to rob slavers of the use of the American flag, albeit largely unsuccessfully. The British kept vigorous suppression measures in place. Wisely, they did not contemplate a repeat of the Brazilian intervention given the proximity to the United States and improving Spanish cooperation.

The long-maligned USN Africa Squadron acquitted itself well in this very late hour. The embarrassment of the extensive use of the American flag in the trade led President Buchanan to approve a long-awaited slew of naval reforms in 1859. American naval forces were strengthened on both sides of the Atlantic, steamers were added to the squadron, and the primary logistics base was moved from Cape Verde to the African mainland. According to historian Don Fehrenbacher, “these measures had striking results. American warships, which had averaged only one prize per year from 1851 through 1858, seized five slavers in 1859 and fifteen in 1860.”

At this point, slavers were running extremely high risks and losing nearly half of the vessels

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117 Ibid. 187.
118 Ibid. 187.
sent through the trade. Nonetheless, the slavers had a few advantages in this last stand. They had become proficient at finding countermeasures to the blockade; their intelligence and coordination networks were still robust. Cuban demand recouped much of their losses— even after international enforcement forced slavers to burn their ships after clandestine off-loads in order to destroy the evidence.\textsuperscript{119}

The American political crisis would put a final end to the trade, though through a diplomatic blunder rather than through force of arms. Embroiled in the American Civil War, the threat of British power weighed heavily on newly elected President Lincoln. British public opinion was split over which side to favor in the conflict, and however unlikely, British support for the Confederacy would have been disastrous. Anglophobia still ran high in the North at this point, so it remained a matter of some complexity to grant the British their long awaited right-of-search treaty.\textsuperscript{120} Wartime needs caused Lincoln to recall the American fleet from West Africa; given the volume of American-flagged slavers, this was a particularly inopportune time.

This issue came to a head in the ‘Trent Affair,’ an 1861 diplomatic incident where a United States Navy vessel seized a British merchant steamer carrying Confederate diplomats. The uproar resulting from this incident was eventually resolved through negotiation between the United States Secretary of State, William Seward, and the British Ambassador, Viscount Lyons.

\textsuperscript{119} Lloyd, \textit{The Navy and the Slave Trade}; Murray, \textit{Odious Commerce}.
\textsuperscript{120} This is a point of some controversy, but the historiographical consensus on this point pushes back against the simplistic idea that ‘Lincoln helped the British because he hated slavery.’ While this might be true, Lincoln was constrained by political realities, and few trends were more enduring during this period than Anglophobia. Buchanan had also attempted to suppress the slave trade, and Lincoln carried into execution a number of policies started by his predecessor. The Trent Affair forced his hand, and simultaneously solved a problem for him: he had recalled the Africa Squadron for the Civil War, and with the boarding treaty, the British would let the United States effectively out of Webster-Ashburton African commitments. Toward the end of the treaty negotiations, there was a bit of political theater, where the British had to engineer basically meaningless concessions into the law in order to make it look as if it was a compromise and thereby secure ratification; this was done with the clandestine cooperation of the administration. Canney, \textit{Africa Squadron}; Rees, \textit{Sweet Water and Bitter}; Lloyd, \textit{The Navy and the Slave Trade}; Mathieson, \textit{Great Britain and the Slave Trade, 1839-1865}; Howard, \textit{American Slavers and the Federal Law, 1837-1862}.
The British made use of the leverage from this incident to secure the Seward-Lyons Treaty of 1862.121 This long-awaited treaty granted reciprocal right of search, complete with equipment clause and mixed commission courts in Sierra Leone and New York.122

These courts were never used. The entry of the American flag into the boarding regime, in concert with improved Cuban enforcement, spelled the demise of the Atlantic trade. Without the flag as cover, the force of the British blockade could be brought to bear with impunity on the few remaining slavers.

Improved domestic enforcement cut off slaver access to clandestine financial and shipbuilding infrastructure in New York.123 This was crucially important, as “in August 1860, [the New York Herald] reported that by the late 1840s and early 1850s, slave traffickers had infiltrated New York City’s business establishment and had routinely coordinated illegal slave transactions. The Herald noted that the profits from these sales were used to finance the political campaigns of New York and New Jersey politicians who supported the agendas of slave traffickers.”124

Eager to demonstrate aggressiveness in suppressing the trade, Lincoln upheld the conviction of slave trader Nathaniel Gordon, who in 1862 became the only person executed under the American anti-slave-trade statute.125 This prosecution also garnered positive attention in the

123 Anne Farrow, Joel Lang, and Jenifer Frank, Complicity: How the North Promoted, Prolonged, and Profited from Slavery (Random House LLC, 2007); Rees, Sweet Water and Bitter; Mathieson, Great Britain and the Slave Trade, 1839-1865; Howard, American Slavers and the Federal Law, 1837-1862.
British press that helped ensure ratification of the Lyons-Seward treaty. The Gordon hanging happened amidst a sea change in New York with the appointment of a new U.S. Attorney and Marshal. In their words: “Three things are required to end the slave trade at this port: First, to stop the fitting out; Secondly, to restrain American officers and seamen from serving on slave shops; and Thirdly, to extirpate ‘straw bail’ for vessels seized for the offence and then bonded or bailed and discharged.” They increasingly effectively accomplished the first two counts. The death of Gordon provided the example they desired for the third. In the Marshal’s words: “the slave traders recognized in the Execution of Gordon their defeat, and a general exodus to Cuba ensued.”

The trade attempted an abortive re-boot using Cadiz as a new financial base, but the now-suppressed Cuban demand could not support an effort against the fully networked regime. The trickle of captives came to an end with one last known voyage landing in Cuba in 1867. Seward’s hopes for the treaty that bears his name were borne out – the long-awaited Anglo-American cooperation finally did “bring the African slave trade to an end immediately and forever.”

‘Grey Market’ Conclusions. Throughout this phase, the British continually increased the comprehensiveness and the connectivity of their regime, and typically at the expense of their adversary. They did so remarkably frugally, and thereby kept the suppression effort largely off of the budget chopping block. When the regime did trigger a major support check, supporters were able to build a counter-network with allies inside and outside the regime to defend the

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126 Ibid. 227.  
127 Ibid. 237.  
128 Ibid. 241.  
suppression attempt.

The continuing metronomic growth of the treaty regime provided a consistent measure of progress for supporters of suppression. However, since the relationship between regime growth and progress against the trade hinged upon a certain faith in the future success of the regime, this was unconvincing in isolation for suppression skeptics. Nonetheless, progress was continually made in building the dam one rock at a time, even if water still flowed through the cataract.

The dictates of efficiency and support from the Boxer theory outline the foundations of British success: they continually improved their network and degraded their adversary’s while keeping the political costs of doing so low. They built an ‘anti-fragile’\textsuperscript{131} regime that, similar to the illicit market, benefitted through rare events. Explanations of power alone fail on the ineffectiveness of early unilateralism, regimes alone fail on Brazilian resistance, norms alone provide a strategic backdrop but do not explain progress. Exogenous demand shifts do not explain the ‘shock-wave’ pattern. The progress of the treaty network, and its effects on the volume of the slave trade, are best accounted for by the Boxer hypothesis.

This is not to say that the regime was an ideal network structure. However, it may have been the most efficient structure possible given the limitations of the time. The regime’s opponents mocked the project as a ‘benevolent crochet,’\textsuperscript{132} from a network perspective, they had a point. A hub-and-spoke configuration is not the most efficient construct. Since all actions need to route through the hub, there tends to be high degrees of latency. This creates vulnerabilities, as the lateral ties of flat networks can route information much faster. In this case, reports abounded of illicit coordination between French slavers and Dutch slave ports from 1819 to 1829.\textsuperscript{133}

\textsuperscript{131} Nassim Nicholas Taleb, \textit{Antifragile: Things That Gain from Disorder}, 2014.
\textsuperscript{132} Huzzey, \textit{Freedom Burning}, 117.
\textsuperscript{133} Dorsey, \textit{Slave Traffic in the Age of Abolition}, 144.
The British suspected and surveilled links between Spanish slavers and French, Danish and Dutch slave merchants. These flat *ad hoc* illicit partnerships were more ‘market-like’ than the British star-shaped treaty network.

Three factors offset this inefficiency. First, there were tight constraints on the world of the possible in anti-slavery treaties, as the British were advancing an opposed norm against the interests of most of their ostensible partners. In an ideal world, Spanish authorities and Dutch authorities might have jointly rooted out these instances, but these sorts of lateral ties would have required the Spanish to enforce these policies in earnest. This did not happen until the 1840s at the earliest. The ‘ratchet’ model yields a star network, but a complete star network is better than a fractured, incomplete network. Given the difficulties with multilateral negotiations, this hub-and-spoke network was the most developed and comprehensive of the world of the possible regimes.

Second, the British incorporated a number of friction reducers. The ‘immediate effect’ acts allowed the Foreign Office to update and enact treaties quickly. The technique of updating all treaties when any one treaty was upgraded allowed for the rapid diffusion of treaty improvements. The British would attempt to append annexes to all extant treaties in the network, as well as updating the basic treaty template and including the measures in all future negotiations.

Finally, the treaty network built organic, low-level-lateral-linking structures at the enforcement level. Latency mattered less on the world stage than on the African coast. As we will see in the next chapter, the initiative and independence of cruiser captains worked as a flat

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134 Ibid. 119.
135 Murray, *Odious Commerce*. 

network in practice. The mixed commission courts were similarly self-sustaining in practice. Between the bases, the courts, the ships and the captains, the enforcement structure created by this diplomatic arrangement increasingly reflected ‘market-like-ness’ over time.

**Policy Implications.** First, they were more attuned to ‘what good looks like’ than to a specific plan to get there – **a destination, rather than a planned route.** Second, they built a venture capital culture amongst their operators – **fail quick, cheap and often, but win big.** This was built on grassroots operator initiative, and underwritten by an international movement that facilitated **ad hoc** partnerships. Third, they generally purchased treaty improvement at moments where they had excellent leverage with their partners, while protecting the **status quo** when events turned against the progress of the regime – this ‘ratchet strategy’ allowed them to capitalize on beneficial random events while insulating themselves from harmful ones. With these three elements in place, the British successfully executed the classic swarming strategy, simply: ‘**attack everywhere, see what works, do more of that.**’

**Policy Implications: Institutions v. True Believers.** The relationship between the suppression campaign and the larger abolitionist movement raises a point about institutions and ideologues. The aggressiveness of some of the squadron’s most effective leaders came from strong convictions about the evils of slavery. Aggressiveness without institutional competence is dangerous, as the early phase of American Prohibition will demonstrate in the next section.

Institutional competence is a prerequisite, and may itself be adequate. An important task, especially a strongly incentivized one, should sway senior institutional leaders by bureaucratic logic alone. Motivating junior leaders is more challenging, but professionalism can serve as a proxy for ideological fervor. That said, competent members of an institution who have such fervor are often tremendously effective. Of the triumvirate of norms, competence and
professionalism, competence comes first, professionalism second and ideological fervor third. But having all three is definitely an advantage.

However, zealots inside an institution can be both effective and dangerous – as opposed to outsider zealots, who generally accomplish little, insider zealots can accomplish much more than their mandate allows. In the next chapter, a Captain Owen found license in his abolitionist zeal to abuse and impress slaver crews. David Turnbull, an aggressively abolitionist British consul to Cuba, was implicated in a political revolutionary tactics and was certainly the source of Anglo-Spanish diplomatic friction.\textsuperscript{136} Denman, for all he accomplished in ending the trade, committed the British to much deeper involvement in West Africa than the Foreign Office originally desired. Nonetheless, abolitionist captains were linchpins of the squadron’s success.

This finding implies that groups advocating suppression campaigns should pursue institutional strategies rather than attempt to create their own structures. Competence takes a very long time to produce – the Royal Navy had centuries of experience behind it. The early abolitionists seeded their children amongst the institutions of their nation rather than keep them cloistered within ideologically pure enclaves. They also maintained rich networks that linked allies in these public institutions with friends in the non-profit and private sectors.

\textit{Counter-Network Strategy: The Ratchet.} Modern-day suppressors can draw lessons from the British treaty-building enterprise. The British were masters at using crises to extract concessions. With their ratchet strategy, rare events often worked in their favor. On a tactical level, the British need to guard a wide front in their blockade, while the illicit market only needs to find a few weaknesses. On a strategic level, the ratchet strategy turns the same logic on its

head. The illicit network may innovate faster than the suppressors, but by delegating initiative, the suppressor can determine counters before the illicit network can fully recover. By institutionalizing effective countermeasures, the suppressor takes the tactic off of the table. Over time, the illicit network begins to run out of options and becomes channelized. This yields a vulnerable network that can then be directly attacked.

The ‘ratchet’ strategy employed by the British proved a remarkably frugal use of political support. If regime leaders know what good looks like, and they foster innovation, they can make excellent use of rare events to advance their regime. This is a low cost for taking and holding ground away from the illicit network. Synchronizing a multilateral strategy is difficult, as it is exceedingly rare that the leading state will simultaneously have optimal leverage on all the other participants. A fully unilateral strategy is costly in the long run, as it leaves the leading state playing ‘whack-a-mole’ and unable to consolidate gains. The British bi-lateral strategy allowed them to incrementally advance their regime whenever circumstances provided them leverage with any partner. When paired with ‘leader-linker pairs,’ tactical innovations can provide senior leaders leverage for strategic gains.

As a counterfactual, a highly organized adversary may be able to break the ‘ratchet.’ During the 1830s, the British were able to focus increasingly on the southern reaches of the trade by pushing the trade out of the north. Due to intense patrolling around Sierra Leone, slavers would have to take on additional risk to go north, so they elected not to. This channelized the trade, and induced more risk in the long run. Perhaps, if some portion of slavers had kept going north, they would have forced the cruisers to cover more area and would have reduced the overall number of captures. This would involve a major collective action problem – while the higher-risk crews did not face criminal prosecution, they would forfeit their voyage’s profits. If a hegemonic structure
could pool risk and thereby reimburse them for their losses out of the marginal gains of the southbound vessels, then this arrangement could work.

There are too many incentives to defect, though, and their diffuse network could not solve this sort of coordination problem. However, some criminal groups manage to accomplish exactly this, with members serving prison time or risking death on behalf of the gang. The slavers could not engender this sort of loyalty, and their failure to solve their own strategic collective action problems allowed the ‘ratchet’ strategy to work. The British were therefore able to solve their own collective action problems on the commons of the Atlantic incrementally over time.

In the next section, we will explore how the British attacked the channelized network of the slave trade. As the Dolben’s vignette describes, each time the regime would fix and attack the form of the illicit market, the market would re-boot in a different form. Each re-boot would allow most members of the illicit market to shift to a new means of doing business. Each time, the illicit market would also lose some number of members for whom shifting to a new business was more economical than re-booting. Eventually, the processes outlined in this chapter shut down the grey market, whose more suppression-sensitive members will depart for friendlier circumstances. According to the operational progress script, the least suppression-sensitive members remain and seek security through costly countermeasures and clandestine organization. Therefore, we proceed to the West Africa Squadron’s campaign against the Slave Trade’s black market.
CHAPTER 6, BLACK MARKET: NOTHING VENTURED, NOTHING GAINED.  
THE WEST AFRICA SQUADRON’S BLACK MARKET SUPPRESSION EFFORT, 1820-1867.

THE ‘BLACK MARKET’ PHASE: COUNTER-NETWORKS IN AFRICA AND THE AMERICAS.

As the legal cover of flags disappeared, increasing risk drove the slavers to internalize coordinating costs and organize. The improving treaty network yielded a darkening market, increasingly full of characters that would rather run under no flag as a slaver than run alternate goods under a legitimate flag. Slavers looked to new tactics and costly countermeasures to run the blockade. As the relatively small number of early British captures indicates, they were initially successful in doing so. However, as the high percentage of late-phase captures indicates, the British improved to the point where they were inflicting unacceptable losses on the trade.

In order to understand how the British prevailed against this black market, we turn from Foreign Office’s fight to build the treaty network and toward the West Africa Squadron’s suppression actions. Their fight against the increasingly organized and underground slaver supply chain required the same frugality and improving efficiency as the effort to improve the boarding network. Accordingly, we will now re-trace this case from the enforcers’ tactical level.

Background: Flowcharts vs. Improvisation. In the previous chapter, there was a clearly identifiable suppression network structure in the Boarding Treaty Regime. At the tactical level, ‘market-like’ efficiency is more of a function of command climate, which is hard to quantify. To steal a phrase from Justice Stewart, one knows an innovative unit when they see it;¹ since innovation is an openness to new things rather than a thing itself, we can see innovation through the willingness of unit members to take novel independent action. These traits are present, and

increasingly so, throughout this case. We will use ‘willingness to take and make use of initiative’ as our working definition for regime efficiency in this tactical-level retelling.

Formal rules are predictable, optimizable and brittle, while extemporaneous actions are flexible but unpredictable. Every military sets their command ‘slider’ somewhere between the two, but the balance is generally fractious. Admiral Keyes, in his post-mortem of a failed World War I naval battle in the Dardanelles, framed this concept well. On one hand, the ‘materiel school’ treats the military as a machine that can be standardized and optimized. This school trusts to hardware, economies of scale and top-down command-and-control technologies. On the other hand, the ‘initiative school’ sees the empowered operator as the primary focus of warfighting. This school uses selection and training to ensure that operators are capable of judgment, and lateral command-and-control technologies to maximize their capability for independent action. The strength of this school is in seizing fast transients within complex, chaotic battlespaces. Where the materiel school needs to clear away the ‘fog of war’ to act, the initiative school can fight well from within this fog.

This pendulum periodically swings – when static forms of warfare dominate, such as trenches and naval battle lines, the predictability and the mass of the ‘materiel school’ excels.

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2 Keyes was clearly a critic of the materiel school. Interestingly, his initial service was with the East African Slave Trade patrol, which like its West African counterpart was very much in the other camp. Roger John Brownlow Keyes Baron Keyes, The Naval Memoirs of Admiral of the Fleet Sir Roger Keyes: The Narrow Seas to the Dardanelles, 1910-1915 (T. Butterworth, Limited, 1934).


When dynamic forms such as Biddle’s “modern system” prevail, the motion and flexibility of the ‘initiative school’ allows a force to navigate the chaos. Since asymmetric forms of conflict neutralize mass by amplifying chaos, unconventional campaigns strongly favor the latter school.

The Royal Navy of this period found itself in the midst of such a pendulum swing. The formalism school that dominated the Admiralty in the 18th century attempted to script the actions of captains through a flowchart-like set of “Permanent Fighting Instructions.” This standardized approach reflected the machine-like sensibilities of the materiel school, but it increasingly lacked the flexibility required to seize battlefield opportunities. This case took place during a period where the institution still favored formalism, but was increasingly willing to move toward the initiative school.

The demands of African service amplified these trends toward initiative – the captains who performed the best were the ones who were most comfortable thinking unconventionally. In this, they reflected their adversaries – the slavers were not bound by convention or institutions, faced fairly low risk of criminal prosecution, and were largely free to innovate. If conventional warfare were akin to checkers or chess, this sort of warfare resembled go, the Chinese game of reversals. In such a world, there is a great premium placed on speed, innovation and adaptation.

*The Three Imperatives.* In a black market campaign, the illicit network has three imperatives. First, it must transfer as much risk as possible to the parts of the supply chain that remain covered by sanctuary. For instance, the British did not attack coastal slave fortresses

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until the 1840s, so slavers would increasingly minimize their exposure to British patrols by pre-coordinate with these fortresses for rapid pickups. Second, it must harden the exposed elements of the supply chain using costly countermeasures. In this case, slavers made use of blockade-running Baltimore clippers as a means of evading the regime. Finally, the illicit market must preserve the security and integrity of its own coordination mechanisms. Characteristic of any clandestine conflict, this framed an intelligence vs. counter-intelligence fight on the West Africa coast.

The suppression network had three opposite imperatives. First, the enforcement network must deny sanctuary throughout the supply chain. In this case, Captain Denman chased the slaver supply chain ashore with his 1840s attacks on the slave fortress network. Second, the enforcement network should impose as much cost as possible on the hardened nodes. Effective interdiction imposes costs directly through captures, and indirectly by forcing costly countermeasures. As Royal Navy ships grew faster, slavers were forced to use ‘decoy’ tactics to draw away cruisers. Finally, the enforcement network should defeat – or ideally hijack – the illicit network’s coordination mechanisms.

In his *Art of War*, Sunzi discusses the relationship between the *ch'i*, or the unorthodox strategy, and the *cheng*, the orthodox strategy. The defense imperative for the illicit market, and the cost-imposition counter-imperative for the suppressor, both represent the *cheng*. It is

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11 Lloyd, *The Navy and the Slave Trade*.
expected and necessary that both sides will encounter each other in the market commons.

Conversely, the imperative to transfer risk to sanctuary, and the counter-imperative to root out and block those sanctuaries, represents the *ch‘i*. The *ch‘i* and the *cheng* are intertwined – by attacking ships on the seas, the suppressor pins the illicit market and forces it to export risk ashore; doing so, the illicit market reveals their preferred sanctuaries. The third set of imperatives – information security and information exploitation – reflects the *Tao* of command from Sunzi.

The way in which these principles cash out in practice in counter-market conflict hinges on supply chain specifics. Turning to this case’s supply chain:

**Slave Trade Supply Chain.** The slave trade of this period was a network-of-networks linked by profit. In its simplest form, a voyage began by securing capital in Europe or the Americas. A loose federation of financial and shipbuilding services made this possible. As the trade became darker, this *logistics network* took on a speculative character and cartel forms.
Once a ship was procured, outfitted, crewed and packed with trade goods, it made its way to Africa and there exchanged goods for captives. This capture network was composed of a complex of local leaders, raiding parties, and slave broker installations ashore. Similarly, as pressure increased on the trade, these activities were dominated by fewer cartels. The captive-laden ship then proceeded to the Americas. Here, the captives were sold into an exploitation network, which consisted of slave sales brokers, their requisite infrastructure, and the larger economy of slavery. Since suppression initially focused on capturing slaver ships, the slavers built a fourth defensive network of transit defenses. This triple-layered defense sought to defeat the regime through immunity, evasion and escape.

**Logistics Network.** The chain begins in a logistics network that financed the voyage. The European slaving shipyards of Liverpool and Nantes continued to provide hulls to the slavers for a time, with Baltimore and New England replacing them in the late trade. The involvement of the financial resources of London and New York in the trade remains a subject of controversy – the laundering schemes that kept the authorities of their day at bay perform much the same function for historians of today. Sherwood, in *After Abolition*, identifies the continuing presence of British finances and trade goods in the slave trade well after the British outlawed the practice. This might be compared to the ambiguous role of lawyers and financial services in modern terrorism and drug trafficking.

This network was held liable to various degrees throughout the case. British and American

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15 Voyages Database, using Place of Construction variable.
17 Marika Sherwood, *After Abolition: Britain and the Slave Trade Since 1807* (I. B. Tauris, 2007). Sherwood cites this as examples of complicity; I would compare this to lawyers defending drug lords and laundered financial services for controversial violent political actors.
authorities injected some degree of risk into shipbuilding and financing, but the use of transfer papers and cut-outs made effective prosecutions difficult. Better coordination between British court proceedings and American shipyard investigators would have likely severely damaged the trade, but Anglophobia made this impossible until the end of the case.

**Capture Network.** After the logistics network outfitted a ship and a crew, the voyage moved to West Africa and the capture network. Here, a network of coastal slave fortresses (‘factories’ or ‘barracoons’) transferred captives to waiting slavers. These were owned by a mix of European traders and African leaders, and typically had exchange relationships with local potentates. The coast was physically and politically hostile for Europeans, and the factories housed the relationships and the knowledge required to navigate these exchanges. These fortresses linked a network of slave raiding to the ships at the point of purchase; they also served an intelligence function as focal points for communication between slavers and their coastal allies.

They were liminal facilities and therefore connectors in their own right, much like the islands off the coast and the British enclaves preferred by the suppressors. “European merchants in West Africa exercised no rights to govern, before the opening of the nineteenth century. The exceptions to this were the enclaves of the forts themselves where European authority was exercised.” Like the slave brokers that occupied them, these were places between worlds. Therefore, they were challenging constructs to maintain, as they had to accommodate the legitimacy demands levied on them by both worlds. As the British would find, while the

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structures themselves could be easily rebuilt, the social relations they housed were far more difficult to replace than the seemingly endless slaver shipping fleet.

The forms of the deeper raiding networks that serviced these fortresses varied greatly. Since they piggybacked on contours of inter-state conflict in most regions, they would have been exceedingly difficult to surgically target. The factories, on the other hand, were fixed targets. Their very function made them vulnerable to attack once their sanctuary was lifted. A barracoon could not beacon slavers without attracting cruisers and covert fortresses were much less efficient. The centrality of the fortresses\(^\text{20}\) made them extremely lucrative targets, and their destruction effectively disrupted local capture networks.

_Counter-Network Strategy: Slave Brokers as Key Players._ The fortresses were home to slave brokers. These players were keys to bridging Atlantic cultures, a pre-requisite for the trade; they relied on perishable relationships and tacit knowledge. For instance, Jose Ferreira Gomes was a key broker for the Angolan slave trade, as he married the daughter of a traditional leader. His arrest in the late 1840s “dealt a significant blow to the [region’s] trade.”\(^\text{21}\)

Just as it took decades of experience and mentorship to develop an effective cruiser captain, generating an effective slave broker required a good deal of time and chance. Most importantly, a slave broker needed tacit knowledge of liaising and cultural cachet with both West African leaders and Europeans. Additionally, they needed practical trading and bookkeeping skills. Finding even the raw materials for this combination of skills was difficult.

\(^{20}\) Specifically, Betweenness Centrality.

These individuals often came from a liminal space between these two worlds.\textsuperscript{22} Henry Tucker, an Afro-Englishman, played a major role in the late trade in the Gallinas and Sherbro.\textsuperscript{23} Similarly, Isabel Gomes Lightburn was the product of an American father, an African mother, and an English education; she worked as a coastal broker until the treaty network displaced her.\textsuperscript{24}

The Brazilian Feliz de Souza’s liminality was legal rather than cultural – somewhere between outlaw and government official, he was sent under not-entirely-voluntary terms to Africa in order to counter the effects of suppression along the coast. He helped engineer a revolt in Dahomey, and gained a permanent position as broker for the new king Guezo. De Souza’s developed a depth of tacit knowledge and a relational trust network that allowed him to connect Guezo to European traders. While he attempted to pass these skills and relationships to his son, his death in 1849 disrupted the Dahomean slaving network and destabilized the king’s position.

John Ormond stands out amongst these liminal players.\textsuperscript{25} He was the son of a British slaver captain and a woman of Mandingo royalty. He was educated in England and served in the Royal Navy. When his father disowned him, he made his way to West Africa, where his mother claimed him as a prince. He became a major regional player in the trade prior to this case. The infamous slaver Canot worked for Ormond as a clerk, and Ormond’s son, ‘Mongo John,’ gained control of the regional slave trade through conquest.\textsuperscript{26}

Apprenticeship or unique experiences provided a second route to slave brokerage. Domingo Martinez served as a crewmember on a slaver that was captured by British cruisers. He was left

\textsuperscript{22} Perhaps this is why there was such a problem with Sierra Leone residents departing to join the slave trade; as a Creole, they came to occupy a place in both worlds.
\textsuperscript{23} Sherwood, \textit{After Abolition}.
\textsuperscript{24} Ibid.
\textsuperscript{25} Ibid. Ormond discussion taken from pp. 186-192.
\textsuperscript{26} Ibid. As above.
near Whydah, where he learned the trade of a slave broker. He eventually became chief broker at Lagos, and later in Dahomey.27 Similarly, the infamous slaver Pedro Blanco initially worked for de Souza prior to setting out on his own in the Gallinas.28 This pathway relies less on chance than the liminal player route, but it requires more time.

Producing these players required a long lead-time and scarce resources, compared to the relatively plentiful slaver captains and slave purchasers. Therefore, suppression-driven stress on the slaver network registered strongly at the broker level. The increasingly dark trade looked toward fewer financiers, who were then able to charge higher rents; though these transactions were typically laundered, the Zulueta brothers’ international trading firm was often implicated in these.29 In *The King v. Pedro de Zulueta (1842,)* the crown unsuccessfully brought charges against the junior brother. Hu-Dehart compares Zulueta & Co. to a modern multinational corporation; in this case, ‘Teflon Don’ John Gotti might be a better analog.30

Similarly, effective brokers became scarcer over time, and were therefore better able to consolidate power into a smaller number of cartels. Larger organizations could also exploit niche functions—until the British ended the re-sale of slavers in the 1840s, both Blanco and de Souza retained agents in Sierra Leone to buy seized ships at auction in order to restore them to the trade.

During this period, these brokers were suffering from the new complications that suppression

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27 Ibid. As above.
28 Ibid.
inflicted on the trade. Financing and insurance cost and complexity continued to climb; for example, by the late 1840s, “the intricacies of slave-credit had become too much for [de Souza’s] ageing wits.”31 Policies calibrated to disrupt these players, perhaps through targeting their credit throughout West Africa, would have frayed this taut portion of the supply chain.

As predicted by network targeting theory, these connectors and facilitators were key and difficult-to-replace hubs of the trade. Since there were a finite number of these high-brokerage players, it seems likely that removing this category from the trade would have grievously wounded it. Doing so would have been quite difficult, as they were highly protected and embedded in local cultures.

**Transit Defenses.** The next step of the voyage, the familiar Middle Passage, linked the capture network in Africa to the exploitation network in the Americas. Direct naval suppression efforts focused on this step of the supply chain, and it was this link that slavers spent the most effort hardening.32 These countermeasures took three increasingly costly forms – first, immunity was generally the cheapest means of running the blockade. This took the form of legal loopholes, which were progressively eliminated by the British treaty improvements.

 Alternately, bribes for false registration or port clearance provided limited immunity through treaty holes. The cruisers themselves were very rarely bribed, if at all – the captains had too much to lose, and maintaining a conspiracy of silence amongst the crew would have been tremendously difficult.33 Conversely, diplomatic posts provided more possibilities for un-

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31 Rees, *Sweet Water and Bitter*. 269
32 As the legal regime expanded through the Equipment Clause to hold at risk the West African loitering phase, slavers hardened this phase as well.
33 There was a report from 1810 of a Royal Navy officer selling slaves from a prize brig, though to my eyes this seems an artifact of a previous era rather than one representative of the fully institutionalized squadron. Mary Wills,
checked individual action. Nicholas Trist, the American Consul in Havana, and the Cuban
governor O’Donnell both serve as evidence of this: Trist’s registration-for-sale scheme provided
American flags to slavers, and bribes were a normal part of illegal Cuban port clearances through
the 1850s.\textsuperscript{34} Since it would be irrational to demand a bribe that exceeded the risk of running the
blockade or the cost of effective countermeasures, this was the cheapest option when available.

Bribes went both ways. Palmerston used secret-service funds for bribing Brazilian
politicians. Naval captains made use of bribes during diplomatic engagements with African
leaders.\textsuperscript{35} The presence of British bounties for information in slaver ports created a persistent
operational security problem for the trade.

Evasion was the next best option. Especially after the destruction of the Brazilian trade, an
increasing fraction of slavers moved southward to avoid patrols. We will discuss this trend at
length in the geography section.

Less dramatically, effective lookouts and local intelligence networks enabled evasion.
Slavers might wait in an inlet for an ‘all clear’ signal from a slave fortress or an allied ship, and
then bolt for the open ocean. Another tactic used squadrons of slavers and fast decoy ships. The
empty decoy would make a dash for the open ocean to draw off British cruisers, and the loaded
slavers would slip out unmolested.\textsuperscript{36} In a \textit{peacekeeping noir} moment, a frustrated British captain

\begin{flushleft}
\textsuperscript{34} Howard, \textit{American Slavers and the Federal Law, 1837-1862}. 77.
\textsuperscript{35} Eltis, “Abolition of the Slave Trade,” \textit{New York Public Library}. Online.
\textsuperscript{36} Howard, \textit{American Slavers and the Federal Law, 1837-1862}. 77.
\end{flushleft}
reportedly left one such decoy de-masted and adrift along the coast after chasing it down.\textsuperscript{37}

Finally, if immunity and evasion were both impossible, the last method of completing the run was escape. This was a function of either performance or stealth. Since it was difficult to pass a slaver off as a legitimate vessel, stealth was generally ineffective – the British could simply board a vessel and look for slaver signatures. Still, a few slavers recorded success in simulating a palm oil merchantman or a whaler.\textsuperscript{38}

Fighting off the British was an unattractive route as well. Though shot was often exchanged in the course of a pursuit, cannon-play was firmly the advantage of the Royal Navy. One period historian recounts a brief spurt of large-scale armed resistance from Havana-based slavers in 1829. Larger slavers held the smaller cruising brigs in dim regard and attempted to out-gun these ships; these attempts generally quickly failed. A later piratical slaver frigate became infamous by fighting off a British brig and sloop-of-war, but he was eventually cornered and captured by four cruisers.\textsuperscript{39}

These exceptions prove the rule. The combat performance of sailing ships was largely a function of the crews, and the superior skill and discipline of the British force prevailed in protracted engagements. As an additional deterrent, the Hobbesian open ocean held some possibility of \textit{peacekeeping noir} retribution for British casualties. The Royal Navy of the \textit{Pax Britannica} was a fearsome force, and sailors were typically unsympathetic to slaver crews


\textsuperscript{38} Howard, \textit{American Slavers and the Federal Law, 1837-1862}. 19.

\textsuperscript{39} A rumor from papers of the time held that this vessel irreparably damaged a British brig, but this seems unlikely. An escaped slaver has no reason to press an attack; if so, this would be a very rare incident. After an initial search Royal Navy records have no accounting of having lost a vessel to a slaver, which seems as if it would be an event of note. Joshua A. Carnes, \textit{Journal of a Voyage from Boston to the West Coast of Africa: With a Full Description of the Manner of Trading with the Natives on the Coast} (J. P. Jewett & Company, 1852). 409.
following an opposed boarding. Cannons were better used as a defense from piracy or a distraction to the cruisers during a chase.

Speed was the slavers’ best option. The American shipyards of the time built an industry out of blockade-runners, heavy frigates, and fast clippers. This was a path-dependent artifact of British naval superiority, but played strongly in favor of the slavers, who favored these vessels. This advantage of speed was stronger during earlier in the case, where the British squadron consisted of a hodge-podge of vessels not selected on the basis of speed. As the British came to better understand the needs of the suppression patrol, and as their commodores became shrewder at creative acquisitions, the squadron gained swifter vessels and thereby eroded the slavers’ technological edge. This is itself a case of network measure-countermeasure struggle – as the slavers came more to rely on speed, the British focused more effort on defeating their speed advantage.

Through the duration, both the British and the slavers engaged in ad hoc acquisitions in the race for speed; success was as much a function of resource searches across social networks as any individual technology. In a refrain common to unconventional warfare, British captains ran afoul of the Admiralty in their creative modifications to their vessels. The seized slaver clipper *Fair Rosamond* was determined to have too much sail for safety by British naval inspectors prior to being re-commissioned as a cruiser; her first captain restored the removed

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40 Slave Trader Theodore Canot recalls an opposed boarding on a ship he captained in his biography. After directing his crew to fight off the British crew, he, as opposed to his crew managed to survive the boarding. Captain Theodore Canot, *Adventures of an African Slaver* (Dover Publications, 2002).
42 This is in contrast to conventional purpose-built acquisitions, which focus on economies of scale and optimizing one fixed model.
masts and sails from his post in West Africa. While this dramatically improved the vessel’s performance, it earned the captain a censure from his service’s bureaucracy.43

This pattern of field modifications generally continued throughout the case, though from time to time the Admiralty tried to bring the crews back in line with convention. From one of these episodes in the 1840s:

Enterprising commanders had previously been left largely to their own devices by superior officers. Despairing of ever being sent a complete complement of adequate ships by the Admiralty, they had routinely undertaken what modifications they could on the spot: piling on huge spreads of canvas, changing the rigging, landing all unnecessary stores at Ascension to make the vessel lighter and swifter. All this was now vetoed. “The cruisers were once efficient,” Commander Matson said. ‘Now they are not. Their wings are not only crippled but their talons are cut.’”44

In general, the distance of the station, the disinterest of the Admiralty and pressure to make progress from the Foreign Office and civil society leaders gave the Squadron the room to organically adapt their technology to their mission.

**Exploitation Network.** The final link in a slave voyage was arrival in the exploitation network in the Americas. As on the African side of the Atlantic, ships typically required brokerage in the Americas. These coasts were not as dangerous for brokers as West Africa, so these markets had more potential dispersed defensive configurations. Offsetting this advantage, suppressors could call on much greater resources in these areas (should a nation actually choose

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43 Lubbock, *Cruisers, Corsairs & Slavers.*
44 Rees, *Sweet Water and Bitter.* 263.
to perform domestic enforcement.) Actions against the coastal infrastructure on both sides of the Atlantic were effective, as they targeted necessary network choke-points.

During the lower-pressure grey market periods, the sales layer was managed as it had been during the licit trade – centralized, open marketplaces. Once domestic enforcement improved, these fixtures were no longer viable. The ability of the trade to adapt was a function of spare resources and shock intensity. Since Brazil went from toleration to suppression nearly overnight in 1850, the network was unable to recover from the initial shock. British naval forces quickly put down a few abortive attempts at clandestine markets.

Cuba, on the other hand, had the time to develop clandestine distribution networks. Following the black market economic imperative, slavers reduced risks by internalizing coordination. In the early 1860s, slavers would land directly on plantations, which had presumably purchased captives in advance. This came to an end when Cuban leaders began to hold plantation owners liable for nearby slaver landings.45

As in Africa, the deep causes in the Americas may have been the ultimate drivers, but they could rarely be directly targeted. Moral suasion was critical in changing political landscapes, motivating suppressors and recruiting local allies. This was a supporting pathway rather than a direct avenue to abolition - Haiti is the only case where the collapse of slavery destroyed the slave trade. The Haitian pathway is specific to revolution; in all other cases, destruction of the slave trade was a stepping-stone to emancipation.

**Geography of the Illicit Slave Trade.**
While the principal terrain of the grey market fight was political, the struggle against the black market pursued illicit supply chains across physical geography. On the African side of the Atlantic, this struggle took place primarily across four broad regions – Sierra Leone and environs, the Bights of Benin and Biafra, Portuguese-dominated Angola, and Mozambique around the cape. As the campaign progressed, landings in the Americas became increasingly isolated to two regions – Cuba and Brazil. The map below identifies these regions:

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46 The Bight of Biafra is adjacent modern-day Nigeria, the Bight of Benin is adjacent to the present nation of Benin and Ghana.
The trade generally moved south, partially in response to increased Brazilian demand and partially in response to British cruisers. The British patrolling effort moved southward in pursuit. This forced the trade to commit to countermeasures ashore as risk sumps. As the trade migrated to areas that provided shelters from suppression, it traded strategic flexibility for tactical hardening. With extensive defenses in place, the trade presented a difficult enforcement challenge. Paradoxically, as the trade sought out defensible refuge, it became increasingly fixed.
and channelized. While ships were becoming harder to catch, the trade as a whole was becoming easier to pin down.

Eltis and Richardson’s cartography of the trade illustrates this process over time. At the outset, the trade was widely distributed along the African and American coasts, as illustrated in the top-left figure below. The initial flurry of suppression surrounding abolition during the Napoleonic wars, along with burgeoning demand in Brazil reshaped the trade. By 1820, the African side of the trade focused on Angola and the surrounding area, as seen in the top-right figure. This was driven initially by endogenous factors – increasing demand for captives in Brazil from Portuguese holdings. These were later joined by exogenous, suppression-driven factors toward the 1840s. The trade then migrated along the South American coast to Southwest Brazil and remained focused in Cuba within the Caribbean. Along the African coast, the combination of British suppression and the increasingly southern latitudes of the Brazilian trade drove southward movement. Since the Portuguese held territory in Mozambique, South-East Africa began to play a role in the Atlantic trade at this point.

These trends intensified through the 1830s and 1840s, as the bottom-left map illustrates. The trade’s volume at this point remains high, but it is increasingly committed to discrete departure and destination regions. This is a liability on two counts – first, the illicit network loses maneuverability and remapping options by committing to an increasingly fixed model. In practice, this results in practical skill such as pilotage, local navigation and indigenous partnerships decaying in for non-frequented areas. This forecloses these areas for future use, or

at least inflicts startup costs in order to do so.

Second, by committing to an identifiable form, the formal-knowledge-oriented state can now make sense of the problem and thereby bring force to bear. To use Scott’s term, the trade was increasingly legible to the suppressing state. At this point, the network lens and the simple quantitative lens arrive at different interpretations of the health of the trade. The flow of captives around the mid-century remained nearly as high as it ever was; critics of the suppression attempt in contemporary debates raised this point often. However, the increasing pressure of suppression forced the trade to focus on only its most defensible routes. The slavers called their best options, but they became increasingly committed to those options - Angola and Mozambique in Africa, and Brazil and Cuba in the Americas.

In asymmetric conflict, the problem is not the availability of power, but the ability to bring power to bear on an elusive enemy. With four discrete targets, the British were in a position to bring their force to bear. This they did.

With the trade committed to a politically and militarily vulnerable Brazil, Palmerston finds a nail for his hammer. After the aggressive and marginally legal campaigns of the 1840s, the Brazilian trade folded, leaving only the Cuban trade. This final state is described in the bottom-right map. During this phase, the trade continues to innovate defensive measures, but it is fully committed to its final defensive form. At this point, with total risk of capture running above 50%, slavers were spending the whole of their energy trying to run the blockade. The trade was pinned, and collapsed in the face of two committed Cuban governors and improved Anglo-

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American cooperation.

By breaking the total trade into individual Brazilian and the Caribbean trades, we gain higher fidelity on changes in originating regions (Figure 2 below.) The Brazilian trade lent itself to these more defensible southern routes both due to simple proximity and shared Portuguese
influence. Angola provided the bulk of this trade for the duration, but Mozambique remained a feature in this southern trade throughout. Sierra Leone never played a major role in this route, but the Bights were major regions of origin while the Portuguese trade remained wholly legal. Portugal banned the trade North of the Equator during this time; until Portugal and Brazil banned the trade outright, the volume of slaver voyages from the Bights decreased. During the same period, the total number of voyages and the voyages from both southern routes increased. This shows a migration toward safer statuses indicative of enforcement.

Following the re-invigoration of the illegal trade to Brazil, unilateral general enforcement drives the opposite pattern. The role of the Bights increase while the southern routes decline. With increasing focus on Angola, the Bights relatively decline in risk. In this sequence, we see the fully illegal trade diversifying as it attempts to find a route around suppression. In the twilight of the Brazilian trade, all regions of origin decline together as suppression pressure grew increasingly unbearable.50

The Caribbean trade begins and remains more diverse than its southern counterpart. Sierra Leone and the Bights play a shared primary role in this trade. Sierra Leone declines in general relative to the other regions; this is inconsistent, but roughly tracks with changes in the British patrolling patterns.51 Both Sierra Leone and the Bights are suppressed in the northern trade by the mid-1840s, likely a result of improvements in the patrolling squadron during that period.

The southern regions played a supporting but increasing role in the Caribbean trade; their

50 Less origin data is available during this late-illegal period, largely associated with unflagged vessels. Unflagged vessels with known origins come primarily from Angola during this time period, so if there is an endogenous structure to this missing data, it should overstate the decline in the Angolan trade. Still, the known pattern from the unflagged vessels is static in Angola and declines with suppression, so this does not substantively alter the findings. Voyages Dataset.

51 For an example of the effect of basing, see the discussion of Loanda vs. Cape Verde in Donald L. Canney, Africa Squadron: The U.S. Navy and the Slave Trade, 1842-1861, annotated edition (Potomac Books Inc., 2006).
function as a shock absorber is worth noting. The first move south is in 1815-1820, while Spain and Portugal are were banning their trades North of the Equator – this perhaps bought the trade time to re-boot as an illegal enterprise in the north by 1820. The second increase runs from 1835-1840, as the Brazilian trade was reinventing itself as an illegal enterprise – in this case, the Caribbean trade may have served as a shock absorber for the southern route. Finally, from 1850 until the end of the case, the trade moved almost entirely to the south as it sought lower-risk environs. These patterns support the hypothesis that suppression was effectual along broad network lines.
On a tactical level, slaver infrastructure in West Africa included forty fortresses by the end of the 18th century. Since the English and the Dutch owned a majority of these, abolition struck a blow to this network. The trade adapted to these shocks and built new installations throughout the 1800s south along the coast toward Angola.

As suppression improved, the ‘barracoons’ that held captives awaiting transport grew more ad hoc in construction. In the 1840s, the British began building a coastal treaty network, where

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52 Lloyd, *The Navy and the Slave Trade*; 14
53 Ibid.
local political leaders authorized the British to attack ‘barracoons’ on their territory. As this fight
came ashore, it increasingly channelized the local trade, thereby allowing for effective blockade
and improving intercept chances.

Figure 3, a map of captures during 1848, shows that the majority of captures are in proximity
to the few remaining active slave-trading locations. Few captures occur out to sea, though a slew
of captures off the coast of Gabon illustrate interdictions in the coastal current that runs north
from Angola toward the Americas. Many of these captures, especially those immediately
outside of ports, had no captives on board at the time – the equipment clauses provided for this
impact.

This pattern tells another network story – the causal arrow runs both ways. Shutting down
coastal bases concentrates the trade, allowing effective suppression, while effective suppression
helps undermine local leaders’ profits and hence their support for the trade. This demonstrates
the network axiom, ‘try everything until something gives.’
Figure 27: Slave-Ship Captures by African Squadron, 1847-1848. (Courtesy Eltis, Richardson, *Atlas*.)
**Patrolling Infrastructure.** Patrol forces attempted to pin this supply chain through their deployments; logistics and geography proved a critical element in this enterprise. The primary West African Squadron base was in Freetown, Sierra Leone. This provided an excellent location for controlling access to the northeasterly trade winds, which provided access to the Caribbean.\(^{54}\) However, the southeasterly trade winds provide direct access to Brazil from Angola. Suppression drove the trade toward these southern routes, or even more extremely, past the Cape of Good Hope and to the Southeast coast of Africa.\(^{55}\) Later phases of suppression pursued slavers toward these areas.

![Image of Sierra Leone, January 9th 1853, Commander Henry Need of HMS Linnet, 1853.](image)  
(Courtesy National Maritime Museum & Wills, 15.)

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\(^{54}\) It is debatable whether sailors of this period understood currents, but they certainly understood winds. Benjamin Franklin plotted the Gulf Stream current in the late 1700s, but his findings were met with some skepticism in Europe. Matthew Maury’s *Physical Geography of the Sea* was the first comprehensive text on ocean currents, but was published in 1855. In general, the Atlantic currents move in the same ways as the winds – two pipelines to the Americas north and south of the Equator – though Brazilian coastal currents provide some efficient routings to the Caribbean from the south route upon reaching the coast of the Americas. Matthew Fontaine Maury, *The Physical Geography of the Sea* (Adamant Media Corporation, 2001).

\(^{55}\) Eltis and Richardson, *Atlas of the Transatlantic Slave Trade*.  
271
Fernando Po, a Spanish colony off the Bight of Biafra, provided a forward base for attacking the southern trade. The British increasingly focused their suppression at Fort Clarence, their leased base on the island, in the 1830s. Over the next two decades, the Spanish soured on the arrangement. They revoked the lease in 1855, but the increasing British coastal presence lessened the importance of the base. In 1840, the British built an additional naval support base at St. Helena, an island in the southern Atlantic. This location was targeted at the southern trade. The powerful British squadron supported at the Cape of Good Hope supported the suppression campaign by patrolling for slavers transiting from Mozambique. Additionally, smaller depots supported the suppression effort; Denman proposed two such depots at Bolama (in modern Guinea-Bissau) and Gambia to support operations against the northern trade.

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56 Lloyd, *The Navy and the Slave Trade*.
57 Mathieson, *Great Britain and the Slave Trade, 1839-1865*. 66. The bases do not have a directly monotonic distance-based diffusion effect, as vessels can cruise relatively far from their station – more than a thousand miles in some cases. However, it does have an effect on on-station time. Additionally, the logistics of the Admiralty Courts serves as a driver in the post-seizure delay before a ship is back on patrol. The involvement of crews in court proceedings varied, but a closer seizure court reduced transit time.
Like Sierra Leone, these bases received liberated re-captives. In the course of the case, approximately 96,000 re-captives landed in Freetown, Sierra Leone, 24,000 landed in St. Helena, and another 4,500 captives landed at the Cape of Good Hope. While 86% percent of British re-captives made landfall in British colonial possessions in Africa or the Eastern Atlantic, more than 12,000 of the remainder were landed in Cuba.\footnote{This raises a difficult ethical question, which parallels issues encountered with modern human trafficking. Once the British capture a vessel, they inherit a humanitarian crisis and must quickly disembark the persons on board. Unfortunately, until about 1830, the British cruisers experienced higher mortality rates than equivalent slavers. For one, the slavers had greater expertise with maintaining survival aboard an over-crowded vessel. However, the primary driver of mortality in the trade was the length of the voyage itself, and therefore a capturing cruiser should make landfall as soon as possible to save lives. However, once they makes landfall, it is unlikely that the liberated captives will be able to quickly re-locate. Therefore, one must place ex-captives somewhere where they can start new and build a future, but must do so quickly in order to remove them from danger. Though with a rocky start, the...}
The French conducted their intense and generally successful campaign against their own trade from their colonial possessions in West Africa. French sources are not entirely clear about the logistics of their suppression effort, but the most logical base would be Gorée. This island off of Dakar was a primary colonial settlement and central to their previous Senegalese slave trade, and was to serve as the base for the French anti-slave-trade admiralty courts under the 1841 Quintuple Treaty. As opposed to the British and the Americans, who generally returned re-captives to Africa, more than 95% of French re-captures were landed in the Americas. With a commanding position overlooking the primary French slave trading lands, the ships of La Royale performed their task well. The French patrol had the second largest absolute impact on the trade, though that impact was confined to their flag alone.

The Portuguese and Brazilians similarly conducted patrols against the trade, and the Spanish did likewise from their holdings. Like the French, these nations had the advantage of strong infrastructure ashore in the areas of their targeted trade; unlike the French, they had neither the ships nor the interest to eliminate their participation. Also like the French, the vast majority of their re-captives were sent to the Americas. Though these nations netted approximately 120

British seem to navigate this space increasingly well over time: in the 1808-1829 timeframe, the mortality rate for British-captured vessels runs around 13%, as opposed to 9% for an uncaptured slaver (P<0.01, OLS Regression, even stronger results when we control for voyage duration.) From 1830 through the rest of the case, the British-captured vessels have from mortality rates 4 to 8% lower than their uncaptured equivalents, but these become statistically insignificant when we control for voyage duration. By this point, the British are landing re-captives more quickly, but generally in secure locations. Voyages Dataset, 2010.

61 Voyages Dataset. Excel Replication Data available. These were mostly in the French holdings of Martinique, Guadeloupe and Cayenne, (11k total) though there was a strong Cuban contingent (8k.) About 1.5k of re-captives were landed in French holdings in Africa or Freetown.
captures between them, these accounted for a very small percentage of their flags’ traffic.63

Minor players played some role in patrolling as well. Most intriguing amongst these powers is Haiti, who “with their warship appropriately named the Wilberforce, were also able to capture Spanish slave vessels, liberating the captives on Haitian soil.”64 This vessel “actually outperformed the British anti-slave squadron in the Caribbean” in 1820.65 Eric Anderson provides an alternate, nationalist-driven explanation for this vessel’s existence and its success: the Haitian President Jean-Pierre Boyer had designs on Spanish Santo Domingo, and this vessel provided a means of attacking Spanish power in the area. By naming the vessel named for the British anti-slavery crusader and commissioning it with the ostensible purpose of supporting avowed British policy, the Spanish would be unable to respond without raising British ire.66 As with all other powers involved in this project, the demands of economic and political power intersected with normative desires, producing ambiguous results.

The American squadron established their initial base at Cape Verde in 1842.67 This was well removed from the primary patrolling area, and this choice of location drastically reduced available cruising time. American cruisers generally released re-captives in Liberia, rather than at Cape Verde; Monrovia was a common stop for these ships in the course of their patrols.68

63 Voyages Database, 2010. Replication Data available in Excel format.
64 Murray, Odious Commerce. 78.
66 Ibid.
67 Canney, Africa Squadron. The British had reportedly offered basing services at Freetown, Sierra Leone, but this seems an offer that the US would be diplomatically unlikely to accept. William Ernest F. Ward, The Royal Navy and the Slavers (Allen & Unwin, 1969). 161.
68 Liberia accounts for almost 5,000 of an approximate total of ten thousand American re-captures. The balance of this sum were landed in Key West and other southern American ports, though the Voyages Dataset does not differentiate between Africa Squadron and Home Squadron captures. It seems likely that the captures in proximity to American ports were conducted by US Navy ships other than those of the Africa Squadron. Voyages Database.
While the veterans of the squadron consistently recommended rebasing toward the trade’s focal points in Angola, a succession of indifferent Secretaries of the Navy prevented these reforms.69

Finally, the Buchanan administration implemented these recommendations in mid-1859 in response to international pressure.70 This move gave the squadron a chance to acquit their otherwise dismal performance.71 Demonstrating the importance of logistics, the squadron captured fifteen vessels in its final two years, during its tenure in Angola – this accounts for more than 40% of the squadron’s total of thirty-six vessels over the eighteen years of its existence.72

Horatio Bridge, *Journal of an African Cruiser: Comprising Sketches of the Canaries, the Cape de Verds, Liberia, Madeira, Sierra Leone, and Other Places of Interest on the West Coast of Africa*, 1 (Wiley and Putnam, 1845), http://books.google.com/books?hl=en&lr=&id=qpHVAAAAMAAJ&oi=fnd&pg=PA1&dq=bridge+hawthorne+african+cruiser&ots=z7rJC--DVN&sig=IMR17LfKNEq_0V2u_HaKXVXZPos.

69 Canney, *Africa Squadron*.

70 Murray, *Odious Commerce*; Canney, *Africa Squadron*.

71 The American performance lags numerically behind the Brazilian and Portuguese effort, but is far better in terms of percentage. Amongst the self-policing patrols – the French, the Americans, the Spanish, the Portuguese and the Brazilians – the French capture 31.2% of their flag’s traffic. The Americans capture 23.7%, the Spanish capture 2.3% and the Portuguese/Brazilians capture 1.8% of their respective flag’s traffic. Offsetting this somewhat in the latter two cases is the active British suppression efforts of these flags. Voyages Database, 2010.

72 Canney, *Africa Squadron*. 222
In addition to their West African presence, the British also conducted itinerate patrols in the Americas. The most notable of these was the Brazilian patrol established during the interventions of the 1840s. While broadly successful as cruisers, the primary achievement of the Royal Navy’s Brazilian squadron was in catalyzing domestic enforcement ashore. British cruisers trod more cautiously in the Caribbean due to American sensitivities. Accordingly, direct action against Cuban slavers was far more temperate. The United States supported both of these efforts with a smattering of captures off Brazil in the late 1840s and off Cuba around 1860.

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74 Canney, *Africa Squadron*. 

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Figure 30: "St. Paul de Loando, site of the [US] Navy’s supply depot from mid-1859 to 1861. Loando was over five hundred miles south of the Equator and therefore was a vast logistical improvement over Porto Praya." Caption: Canney, *Africa Squadron*, 202. Picture: Foote, *Africa and the American Flag*, 1854.
The total disposition of captures by national patrol force is listed below:

<table>
<thead>
<tr>
<th>Captures by Nat’l Patrol</th>
<th>British</th>
<th>French</th>
<th>Port/ Brazil</th>
<th>US</th>
<th>Spanish</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>(%) era total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1808-1820</td>
<td>212</td>
<td>56</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>(73.6%)</td>
<td>(19.4%)</td>
<td></td>
<td>(0.0%)</td>
<td>(3.1%)</td>
<td>(0.0%)</td>
<td>(3.8%)</td>
</tr>
<tr>
<td>1820-1835</td>
<td>306</td>
<td>149</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>(63.5%)</td>
<td>(30.9%)</td>
<td></td>
<td>(1.2%)</td>
<td>(0.6%)</td>
<td>(0.2%)</td>
<td>(3.5%)</td>
</tr>
<tr>
<td>1835-1850</td>
<td>881</td>
<td>6</td>
<td>68</td>
<td>17</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>(89.1%)</td>
<td>(0.6%)</td>
<td></td>
<td>(6.9%)</td>
<td>(1.7%)</td>
<td>(0.5%)</td>
<td>(1.2%)</td>
</tr>
<tr>
<td>1850-1865</td>
<td>165</td>
<td>0</td>
<td>13</td>
<td>38</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td>(65.7%)</td>
<td>(0.0%)</td>
<td></td>
<td>(5.2%)</td>
<td>(15.1%)</td>
<td>(13.1%)</td>
<td>(0.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>1564</td>
<td>211</td>
<td>87*</td>
<td>67</td>
<td>39</td>
<td>42</td>
</tr>
<tr>
<td>(77.8%)</td>
<td>(10.5%)</td>
<td></td>
<td>(4.3%)</td>
<td>(3.3%)</td>
<td>(1.9%)</td>
<td>(2.1%)</td>
</tr>
</tbody>
</table>

* Includes USN Africa Squadron, Brazil Squadron & Home Squadron. (Source, Voyages Dataset.)

_Risk Effects and ‘Splash’ Pattern Displacement._ These trends altered slavers’ decision calculus. The chart below shows the capture risk for slavers of all flags running illegally. It does not include slavers running legally, who comprised half of voyages during this period.\(^75\)

Improvements in the suppression regime dramatically increased the risk over time and also by region. In the first phase, risk north of the equator ran at about 50%, while risk in the southern regions ran around 15%. This caused slavers to displace, which then pulled suppressors with them. By then end of the case, risk was fairly evenly distributed and very high across the board. In the waning years of the trade, the trade needs to cover the losses of half of its voyages in order to survive. This requires a full commitment to defenses and countermeasures, and leaves room for little spare innovation and flexibility.

\(^75\) Voyages Database. 44.35% of voyages run legally, to be precise.
As mentioned, the overall suppression architecture evolved along with the trade. As the overall distribution of slavers moved south, the suppressors moved south as well:

<table>
<thead>
<tr>
<th>Capture Risk for Illegally Running Slavers</th>
<th>To Windward (Sierra Leone)</th>
<th>Benin/Biafra (Nigeria)</th>
<th>W. Central (Angola)</th>
<th>South East (Mozambique)</th>
<th>All Regions*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1821-1835</td>
<td>49.7% (84 of 169)</td>
<td>50.6% (245 of 484)</td>
<td>14.0% (21 of 150)</td>
<td>14.7% (5 of 34)</td>
<td>33.8% (442 of 1.3k)</td>
</tr>
<tr>
<td>1836-1850</td>
<td>38.1% (32 of 84)</td>
<td>39.4% (102 of 259)</td>
<td>17.1% (123 of 721)</td>
<td>13.1% (20 of 153)</td>
<td>40.7% (998 of 2.4k)</td>
</tr>
<tr>
<td>1851-1867</td>
<td>73.3% (2 of 3)</td>
<td>61.6% (17 of 23)</td>
<td>37.5% (53 of 86)</td>
<td>53.0% (3 of 11)</td>
<td>53.0% (250 of 471)</td>
</tr>
<tr>
<td>Total</td>
<td>48.9% (160 of 327)</td>
<td>47.8% (386 of 807)</td>
<td>20.8% (200 of 963)</td>
<td>13.9% (28 of 201)</td>
<td>40.1% (1.8k of 4.4k)</td>
</tr>
</tbody>
</table>
Notably, the location of these bases both responds to slaver movements and shapes their responses. This is reminiscent of imperfect information games, but played out on a much more complex board. The suppression places a base to combat an active trade, which squelches the trade at that location, but may cause the trade to move.

Similar to the treaty-building ‘sawtooth’ effect, the basing chase creates shockwave-response patterns with the slavers. These register as a geographic ‘splash’ pattern of displacement and pursuit. In primary accounts, slavers note that the British moves to the south diminish cruiser
presence in the northern regions, *ceteris paribus*. The statistical account of capture risk confirms this intuition – from 1836 to 1850, the overall capture risk for illegal slavers is higher than in from 1821 to 1835. However, while the risk for slavers near Angola greatly increased in the later period, the risk around Sierra Leone and the Bights actually decreased. This demonstrates a geographic ‘shockwave’ pattern.

In total, this geographic analysis reveals broad network dynamics. In the black market, as well as in the grey, stroke was met by counterstroke over and over. The British built a geographic ‘ratchet’ model for chasing the illegal slavers, just as they had constructed a political ‘ratchet’ model for consolidating the treaty network. While slavers prevailed in early encounters, the British expanded their network over time and overtook the market domain. The trade committed to specific pathways as it exported risk ashore – for instance, in order to make use of sanctuary ashore, the trade committed more resources to barracoons. Through this process, pressure forced the trade to take recognizable shape. By this point, the British were landing blows quickly in sequence and yielding dramatic effects. At the end of the case, the trade was fully committed to one pathway, and the British could keep them channelized and await the eventual knockout opportunity.

The Boxer hypothesis explains this progress better than the alternate hypotheses. Norms, power, and regimes all played roles in this story, but none had sufficient explanatory power alone. Exogenous demand shifts cannot explain the back-and-forth between the slavers and the suppressors. This hypothesis is agnostic whether suppression affected these outcomes through changes afloat or changes ashore – the network approach assumes all of the above, tied together

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with complex interdependency.

Suppressor efficiency, expressed as control over the relevant space, increased at the cost of the slaver’s efficiency. Support remained strong, and good logistics kept the rate of support expenditure manageable. In order to further test these dynamics, we will explore the Royal Navy’s experience in competitive adaptation and competitive sensemaking against the slavers. We proceed by process tracing this campaign against the black market.
**Process Tracing the Squadron’s Evolution.**

We proceed by process tracing the development of tactics, technology and organizational culture within the West Africa Squadron. We should see the increasing development of ‘market-like’ structures over time, which speed response time and generate progress against the black market. Similarly, we should see reversals when these structures are abandoned. Additionally, we expect to see a frugality in the squadron when it is most successful – an excellent commander will creatively acquire as many resources as possible without triggering a ‘support check.’

The task of the Royal Navy during this period was to defeat these defenses and disrupt the deep networks of the trade before exhausting their support. The task of the slavers was to prevent them to do the same as long as the demand for slaves would support their trying. As in the grey market phase, the British eventually prevailed by having a strong sense of ‘what good looks like’ without being overly wedded to one specific avenue there. Market-like flat structures between Royal Navy commanders allow tactics to diffuse quickly – captains collaborating, not commodores directing. When senior leaders attempted to alter this culture, the suppression campaign lost ground.¹ Finally, field innovations were institutionalized in a tactical version of the ‘ratchet’ strategy.

**Sporadic Raiding: 1808-1820.** During the period immediately following British abolition, the British were on a war footing due to the conflict with Napoleon. The British seized slaver merchantmen under war powers until the conclusion of hostilities. The British authorized a ‘prize’ system built on the merchant raider model to incentivize slave ship captures, but were generally frustrated due to a lack of cooperation and legal liabilities from the Spanish and the

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¹ Commodore Hotham serves as the best example of retrograde movement in command and control. Rees, *Sweet Water and Bitter;* Lloyd, *The Navy and the Slave Trade;*.
Portuguese. Relatively few ships were captured during this period, and relatively little deterrence was accomplished.

This period was not wholly without progress. The British cruisers had a free hand in seizing British vessels, and performed well against their countrymen. During this time, the British were able to eradicate the vestiges of their own participation in the trade. Increasingly intense laws targeted British sailors, British shipyards and British money still in the trade. With the high probability of capture from British cruisers, the Union Jack made a quick exit. British sailors flying under other nations’ flags were a more difficult matter, but later laws punishing British subjects with imprisonment in a penal colony served as a deterrent.²

The shipyards were more insulated from legal attack due to their causal distance from the act of slaving. Still, despite the historical ties of Liverpool to the trade, prosecution efforts soon reduced participation to an insignificant level.³ While approximately 10% of ships with known builders in the trade until 1820 were of British make, this proportion dropped to zero with the exception of a two-ship blip during the 1860s.⁴

Financing was the most removed and readily hidden aspect of participation, and accusations of London-based financing for the trade were made through the entire case.

While there was almost certainly some truth to these charges, the clandestine nature of funding makes it difficult to determine the level of involvement. Likely, the speculative nature and legal liability of the risky late trade drove most of the established firms away from these ventures. Any direct British role in the trade was clandestine by the conclusion of this period,

² Lloyd, *The Navy and the Slave Trade*. A series of laws, beginning in 1811 and continuing through the 1830s increase the penalties for this participation. (47 G.3. Sess.1. c.36., 28 H.8. c.15., 11&12 W.3. c.7., 4 G.1. c.11. s.7., 8 G.1. c.24., 18 G.2. c.30.) Ibid.
³ Voyages Dataset.
⁴ Voyages Dataset. Point of initial construction is known only for <10% of voyages during this time period. While this is not a representative sample, it broadly agrees with qualitative accounts.
though Parliament received periodic reports of indirect participation through the financing and provisioning of slave ships.\(^5\) An 1843 bill was designed to counter this practice.\(^6\)

Overall, this period provided the trade a respite to recover from the shock of British abolition. As Figure 11 describes, the trade at the outset of this period was spread from Sierra Leone to Angola on the African coast. In the Americas, landings were similarly spread from Cuba to Southern Brazil.\(^7\) The British departure extinguished the trade to Jamaica. Danish, Dutch and American trade bans similarly reduced the trade to residual amounts in their possessions. The trade to Cuba, French possessions, and Brazil remained strong.

<table>
<thead>
<tr>
<th>Nation</th>
<th>Legal Status</th>
<th>Brit. Captures</th>
<th>Total Captures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Portugal</strong></td>
<td>Geographic Limits (1815), Right of Search (1817)</td>
<td>8.2% (99)</td>
<td>8.7% (105)</td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>Geographic Limits w/ Search (1817)</td>
<td>15.3% (76)</td>
<td>17.3% (86)</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>Trade Ban (1819)</td>
<td>16.7% (15)</td>
<td>48.9% (44)</td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td>Trade Ban (1808)</td>
<td>39.1% (9)</td>
<td>39.1% (9)</td>
</tr>
<tr>
<td><strong>Others Suppressed</strong></td>
<td>(4 x British, 4 x Dutch, 1 x Swedish)</td>
<td>66.7% (6)</td>
<td>66.7% (6)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Generally Legal, Unilateral War Powers</td>
<td>11.2% (205)</td>
<td>13.7% (250)</td>
</tr>
</tbody>
</table>

As the results table above demonstrates,\(^8\) without the benefit of robust frameworks, suppression played only a harassment role against the overall trade. The major accomplishment of this period was the realization of the magnitude of the task at hand. The slave trade would not be easily swept from the seas. Even in the heady days of the early *Pax Britannica*, there were limits to unilateral power. A sustained presence was needed to support the nascent treaty

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\(^5\) Seymour Drescher, *Econocide: British Slavery in the Era of Abolition* (Univ of North Carolina Press, 2010); Sherwood, *After Abolition*. British participation in the cotton slave-economy was well known, but there were few free sources for cotton. The problems of a global market with un-free elements are thorny, as demonstrated by the current free v. fair trade debate.


\(^7\) Eltis, *Economic Growth and the Ending of the Transatlantic Slave Trade*.

\(^8\) Voyages Dataset.
building enterprise.

**Orientation and First Steps: 1820-1835.** In 1819, the Royal Navy established the West Africa Station as an independent command based in Freetown, Sierra Leone.\(^9\) As is typically the case with asymmetric campaigns, the campaign began with ill-fitting equipment, tactics and doctrine for the mission. Offsetting this weakness, the Royal Navy had a strong tradition of operator-level initiative. This trait increased efficiency through organic innovation, while the structure of the squadron institutionalized these innovations. Fortunately, public support for the campaign was robust enough to sustain this extended period of organizational learning. The campaign achieved a few notable successes and did not make any missteps dire enough to provoke a public support check.

<table>
<thead>
<tr>
<th>Nation</th>
<th>Legal Status</th>
<th>Brit. Captures</th>
<th>Total Captures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Portugal/ Brazil</strong></td>
<td>Search North of Equator (Portugal,) Unrestricted Search (Brazil – 1826)</td>
<td>8.9% (128)</td>
<td>10.4% (151)</td>
</tr>
<tr>
<td></td>
<td>Trade Ban (Port &amp; Brazil - 1830)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>Trade Ban w/ Search (1820)</td>
<td>25.3% (151)</td>
<td>25.67% (154)</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>Independent Suppression, Limited Search w/ Equip. Clause (1831)</td>
<td>11.9% (31)</td>
<td>48.0% (211)</td>
</tr>
<tr>
<td><strong>USA Suppressed</strong></td>
<td>Trade Ban, Some Independent Suppression</td>
<td>20% (1)</td>
<td>33.3% (2)</td>
</tr>
<tr>
<td><strong>Others Suppressed</strong></td>
<td><em>(6 x Dutch, 1 x Swedish)</em></td>
<td>42.9% (3)</td>
<td>42.9% (3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Incomplete Treaty Network, Partially Effective Suppression at Sea, No Suppression on Land</td>
<td>13.6% (313)</td>
<td>20.7% (520)</td>
</tr>
</tbody>
</table>

*Figure 32: Period Overview, 1820-1835*

**Statistical Overview.** The impact of the squadron on the trade during this period is ambiguous. This is unsurprising, as the Portuguese and Brazilian flags gave legal cover to the

\(^{9}\) Lloyd, *The Navy and the Slave Trade*; Rees, *Sweet Water and Bitter.*
The majority of voyages conducted during this timeframe. Despite an 1830 trade ban, the enforcement campaign could only target the Portuguese flag north of the Equator, which led to extended legal battles over the peculiarities of positions.\textsuperscript{10} Only 6.8\% of Portuguese or Brazilian slavers were captured over this period. The battle against the fully-illegal Spanish flag was more successful – 19.9\% of these vessels were interdicted. Still, the lack of an equipment clause hampered these efforts; after this was remedied in 1835, the capture rate increased to 33.4\%.\textsuperscript{11}

The independent French suppression efforts of this period were tactically successful. By 1831, they had effectively eradicated their flag’s use in the trade. On a strategic level, the impact of the French effort is more ambiguous – the Spanish flag quickly replaced the volume previously occupied by their tricolor.\textsuperscript{12} This was at least useful in channelizing the trade by denying it another flag.

During this period, suppression began to displace the trade to the South along the African coast. Since cruising was most intense around the primary base in Sierra Leone, an increasing volume of the trade originated from Angola. Pursuing, the British leased Fernando Po, an island off the coast of present-day Nigeria, as a forward naval base.\textsuperscript{13} The Angolan route remained an efficient route for slavers to reach Brazil, but it was a slower route toward the Caribbean. The previously miniscule trade from Zanzibar and East Africa to the Americas grew dramatically during this period. The British naval station at the Cape of Good Hope partially countered this trade by using Capetown itself as a geographic and logistical chokepoint.\textsuperscript{14} For the time being,

\textsuperscript{10} Lloyd, \textit{The Navy and the Slave Trade}; Murray, \textit{Odious Commerce}; Rees, \textit{Sweet Water and Bitter}.
\textsuperscript{11} Voyages Database for all numbers. Excel Replication Available.
\textsuperscript{12} Voyages Database.
the slavers had the upper hand in East Africa as well as in the West.

**Narrative Summary.** Under the last two commodores of this period, John Hayes and Frederick Warren, the Africa Squadron was transferred from an independent command to a subsidiary of the Cape of Good Hope station.\(^{15}\) They both largely carried on the work of their predecessors off of West Africa. This re-structuring was partially in response to the burgeoning southern and East African trade, but decreased overall efficiency by centralizing control. The trade increased until the independent command was re-established in Freetown in 1840.\(^{16}\)

Altogether, this period was one of orientation. The best performing commanders delegated power aggressively, as Collier did by capturing the best of the slaving fleet and setting it loose back on the slavers. By turning the core logics of the trade back on itself, Leeke’s tactics and Collier’s strategies produced good effects. When commanders retained doctrine from conventional conflict, or when they were content with the inappropriate resources allocated from the Admiralty, they were largely ineffective. Similarly, when control was centralized at the Cape, there was less room for low-level leaders to innovate. This was a learning laboratory of sorts, and a number of lieutenants of this period would return as the leading captains of the next phase.

**Status of the Supply Chain.** The slaver network was largely able to defeat the suppression regime at sea during this period, but they were forced to take a number of costly countermeasures in order to do so. Immunity remained the preferred tack of most slavers, since the Portuguese flag remained wide open for their use. The British were able to seize a few of these vessels when they strayed north of the equator, but were otherwise stymied. That said, a

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\(^{16}\) Ibid.
number of aggressive captains would test these boundaries from time to time by sending vessels captured at questionable locations to the courts – a few of these cases came down to which judge was randomly selected as the third member of a given mixed commission. While of dubious legality, this game of ‘legal chicken’ injected some degree of uncertainty into the flags that still covered the trade.

The lack of a Spanish Equipment Clause provided partial immunity as well. Since slavers were immune without captives aboard, they would arrive off the African coast and make arrangements with the various slaving facilities ashore. While waiting for these factories to gather the requisite number of captives, these ships would construct a slave deck using wood aboard. Once the factories were prepared, the ships would then load captives and dash for open ocean. This stands in contrast to the next phase, where slavers would use pre-coordination to minimize their time off the much riskier post-Equipment-Clause African shore. This countermeasure injected some degree of cost, but much less than the price that later phases would demand for safe passage.

The British experimented with different command structures during this period. ‘Detached Service’ granted tremendous autonomy to smaller ships – rather than serving as escorts, these tenders would be set free to patrol on their own effectively independently. Conversely, traditional doctrine kept these vessels allowed the vessels to cover more area, even though it granted an aggressive degree of independence to relatively junior lieutenants. Conversely, traditional doctrine kept these vessels

18 Mathieson, Great Britain and the Slave Trade, 1839-1865; Rees, Sweet Water and Bitter; Lloyd, The Navy and the Slave Trade;.
19 The Equipment Clause took the cruisers from a defensive ‘zone defense’ profile, attempting lag pursuit on escaping loaded slavers, to an offensive ‘in-shore blockade’ profile. Moraguez in Eltis, Extending the Frontiers. 186
20 Lloyd, The Navy and the Slave Trade; Rees, Sweet Water and Bitter.
close at hand, under the direction of the primary ship’s captain.\textsuperscript{21} Since Royal Navy vessels were rarely overpowered, the limiting factor for the cruisers was the volume of sea they needed to cover. The flat ‘detached’ structure proved more effective.

The evasion fight induced some degree of cost as well. The base in Sierra Leone contributed to a southerly displacement of the trade. However, the majority of this period’s traffic was destined for Brazil, and Angola served as an efficient launching point to the South American coast. As the trade moved south, the British pursued. They used the island Fernando Po, in the present-day state of Equatorial Guinea, as a southern logistics base during the later years of this phase and the entirety of the next.

During this time, traffic from East Africa relatively increased, especially from Zanzibar. This is a result of displacement, but may be also partially accounted for by the increase in Brazilian demand.\textsuperscript{22} This move south was ultimately an unsustainable move, given the ease of patrolling the Cape, however these ports did play significant roles in the East African ‘Arab Slave Trade.’\textsuperscript{23}

The network of slaver coastal fortresses provided an intelligence function by monitoring the locations of British vessels. As focal points for slavers, captains could diffuse tactical innovations and pass position reports. The British coastal network was still weak during this period, and they could neither match nor counter these sanctuaries ashore. This made it far easier for slavers to escape British nets.

During this difficult orientation period, the British could count a few successes amidst the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{21} Paul M. Kennedy, \emph{The Rise And Fall of British Naval Mastery}, 2nd ed. (Humanity Books, 2006); Arthur Herman, \emph{To Rule the Waves: How the British Navy Shaped the Modern World} (New York, NY: Harper Perennial, 2005).
\item \textsuperscript{22} Voyages Database.
\item \textsuperscript{23} Raymond Howell, \emph{The Royal Navy and the Slave Trade} (Palgrave Macmillan, 1987).
\end{itemize}
\end{footnotesize}
otherwise lackluster results. First, they forced the slavers to take on some degree of costly countermeasures. They also achieved some limited geographic displacement effects. Second, they demonstrated that they could induce some degree of risk on the slavers, even if they did so through unconventional acquisitions and tactics. Finally and most importantly, they built tacit knowledge of suppression within the larger institution of the Royal Navy. This would pay dividends when the junior veterans of the squadron returned to Freetown as captains.

**Tactical Entrepreneurship: 1835-1850.** During this period, the suppression regime gained control over the northern reaches of the African trade, helped destroy the Brazilian and Portuguese trade, and took their campaign to the littorals on both sides of the Atlantic. With the benefit of more appropriate vessels and captains more familiar with the challenges of the coast, the cruisers increasingly held their own on the seas against slavers. This period demonstrated continuing unconventional acquisitions, decentralized control, and operator-level initiative. One commodore attempted to reverse these trends, but regime performance suffered during his tenure; his successors returned to the decentralized tack. Regime progress was institutionalized through this period in tactical precedents and publications. By the end of this period, the trade was confined to the Angola-to-Cuba route, with the Brazil out of the trade and the Mozambican cross-cape route largely disrupted. Slaver infrastructure ashore became increasingly channelized, while the squadron’s logistics network expanded to include the Americas and the southern reaches of the trade.

The lieutenants of the 1830s returned as commanders and captains in the 1840s. These captains had a strong feel for the coast and a culture of independent action. They took significant personal and professional risks, but in doing so identified key vulnerabilities in the slaver networks.
First amongst these were slaver infrastructure ashore - Captain Denman led a campaign ashore against costal slave factories, which evolved into a second treaty network amongst African chiefs. This was the period of Palmerston and Aberdeen; the former eagerly approved of the liberties taken by the cruiser captains against the slavers, the latter initially disagreed but eventually came to the same conclusions. Ensconced in swift schooners, products of British naval experimentation creatively acquired by squadron leadership, these captains assaulted slaver fortresses ashore, attacked slavers at their moorings in Brazil, and captured upwards of one-third of period voyages at sea.

Statistical Overview. British capture ratios improved as the legal framework tightened. The British primarily struggled against the Portuguese and Spanish during this period. Improvements in these treaties, or at least unilateral authorization in lieu of the desired improvements, shut down sanctuary for these flags during this period. 33.2% of these vessels were captured; this was achieved primarily by the British with Portuguese cruisers making up the balance. This risk increased toward the end of this period – from 1845 to 1850, half of these voyages were captured. By the end of this period, their flags were permanently suppressed.

The Caribbean trade continued under the Spanish flag, with the American flag playing an increasing role. The British inflicted approximately 40% losses on the Spanish trade of the time. The American trade took similar levels of losses, about half at British hands and the other portion due to US Navy cruisers.

During this period, large numbers of vessels begin to run without flags.24 The data are unclear as to the character of these ships. In a simple black market interpretation, these vessels might be running as pirates – there seems little point in registering an illegal ship if that

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24 Eltis Dataset – ships with missing data for Imputed Flag variable.
registration no longer provides defensive value. Alternately, court proceedings could strip a ship of its registration under certain circumstances.25 Slavers were known to run with multiple false registrations, or at least multiple flags. If false papers did not hold up in court, the vessel would lose the protection of that flag and could face the British Vice-Admiralty court. Finally, fragmentary narratives reveal the British use of draconian American laws as leverage to compel slavers to abandon American registration.26 Since a slaver could hang under American law, the British could threaten to extradite a slaver following a unilateral boarding – while the United States would be predictably displeased with public British action, there was some risk that American courts might convict regardless of the circumstances of capture.27 According to these accounts, some number of slavers abandoned their American registrations on this account; these vessels were seized as unregistered ships and sent to the Vice-Admiralty courts. If this were a regular practice, then some portion of these ships would have initially been American vessels.

Each explanation, or a combination thereof, accounts for these dark ships. For obvious reasons, the prevalence of coerced abandonment was not well documented. There is some circumstantial evidence to support this theory – the distribution of known sail rigs and the weight profile is most closely aligned with American ships of the period.28 However, this describes hull design, and American hulls were prevalent across multiple flags at this time. Conversely, some uniquely identifiable signature rig types of these dark vessels are recorded in the Portuguese and Spanish fleets but not in the American fleet.29 The data are inconclusive about the nature of this

26 Mathieson, Great Britain and the Slave Trade, 1839-1865; Murray, Odious Commerce.
27 As demonstrated by Captain Fitzgerald’s seizures from the HMS Buzzard, whose crews were tried in New York. Rees, Sweet Water and Bitter. Also Navy List Online.
28 Voyages Database; Chi-Squared Test on Rigs variable, T-Test for the weights. Assessment made by finding highest P-value to determine which categories approximated each other the closest. P values all extremely low (P<0.0001.)
29 Voyages Database, Rig Variable.
dark fleet; as an operating assumption, I hold that they result from some combination of these three possibilities.

France and the minor players in the trade remain suppressed during this period. There are a few examples of unconventional flags in the trade – Russian, Sardinian and Hanse registration potential provided an end-around of the boarding regime. This innovation was easily stymied with treaties; since these states had no pro-trade constituency, a boarding treaty was very easy to acquire. The French increased their footprint during this period, but since their trade had been eradicated, they primarily pursued unrelated political and economic interests with this force.

<table>
<thead>
<tr>
<th>Nation</th>
<th>Legal Status</th>
<th>Brit. Captures</th>
<th>Total Captures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal/Brazil</td>
<td>Unilateral Intervention (Port - 1839,)</td>
<td>29.4% (455)</td>
<td>33.2% (513)</td>
</tr>
<tr>
<td></td>
<td>Search w/ Equip. Clause (Port - 1842)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unilateral Intervention (Brazil - 1850)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Equipment Clause (1835,)</td>
<td>39.2% (96)</td>
<td>41.2% (101)</td>
</tr>
<tr>
<td></td>
<td>Domestic Enforcement (1845)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Independent Suppression (1845)</td>
<td>6.3% (1)</td>
<td>25.0% (4)</td>
</tr>
<tr>
<td>Suppressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Independent Suppression (1840, 1842)</td>
<td>24.4% (22)</td>
<td>47.8% (43)</td>
</tr>
<tr>
<td>Others</td>
<td>(7 x Danish, 3 x Hanse, 2 x Sardinia, 1 x British, Argentina, Russia, Mexico)</td>
<td>6.3% (1)</td>
<td>6.3% (1)</td>
</tr>
<tr>
<td>Suppressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unflagged</td>
<td></td>
<td>53.7% (359)</td>
<td>55.5% (371)</td>
</tr>
<tr>
<td>Total</td>
<td>Near-Complete Treaty Network, Competitive Suppression on Sea, Initial Suppression on Land</td>
<td>36.2% (935)</td>
<td>40.1% (1035)</td>
</tr>
</tbody>
</table>

*State of the Supply Chain.* During this period, slave ships – the exposed nodes of the chain came under much greater threat. Therefore, slavers attempted to export risk up and down the supply chain, to the fortresses and to the bases in the Americas. Actions ashore disrupted these efforts. However, much of the deep infrastructure of the trade remained intact.

The treaty network foreclosed other sea-going flags. Immunity was removed as a defense
during this period, with the partial exception of the American flag. Evasion was also becoming less of an option, especially after attacks on barracoons reduced the possible number of slave loading locations. With the exception of Hotham’s distant blockage, British cruisers focused their efforts on the remaining slave ports.

Previously discussed logistical changes assumed greater importance during this period. The southern route was still less defended, but the British basing infrastructure in Fernando Po increased the threat to slavers in these areas. The island served as a southern naval base more suited for attacking the Angolan trade until the arrangement fell out of favor with the Spanish during the late 1840s. The Spanish revoked the lease in 1855, to the dismay of British planners hoping to intensify their attacks on the southern slaver haunts. A new British base in St. Helena, positioned halfway between Angola and the Americas, mitigated this loss.

The British were gaining ground against slavers’ escape defenses. The Experimental Squadron brigs seconded to African service performed remarkably well. Additionally, steamships found their way into the squadron during the later part of this period. This was still a young technology, and there was a lively debate between the old technology and the new, as well as between paddle steamers and screw steamers. As is often the case, those fighting asymmetric conflicts are the first to experience and adapt new technologies in the field.

The squadron innovated a number of effective tactics with steam. Most of the early steam vessels retained sails as well, so the British would use the steam engine as an ‘afterburner’ of

31 Lloyd, *The Navy and the Slave Trade*;
sorts, saving their coal for intercepts and chases.\textsuperscript{33} Steam was uniquely tactically useful in the often-unpredictable equatorial winds.\textsuperscript{34} Throughout the campaign, the British made many captures when both slavers and cruisers were ‘becalmed’ (stopped due to lack of wind) through dispatching small rowboats and through the use of ‘sweeps’ (essentially large oars) for the cruisers.\textsuperscript{35} Steam made this process far easier – a becalmed slaver was easy prey for a steam-powered cruiser.\textsuperscript{36}

![Figure 33: "Capture of a Slaver, the Brigantine Paulina, 30th April 1853 in the Rio Ponga, W. C. of Africa,” Commander Henry Need of HMS Linnet. (Courtesy of National Maritime Museum & Wills, 63.) This sketch depicts a small boat action with rowboats and oars, typical of a becalmed intercept.](image)

The slavers were unable to make the leap to steam. It is not until 1858 that significant numbers of steamers join the slaving fleet, and even then the percentage of steam to sail remains


\textsuperscript{34} Rose, \textit{Man and the Sea}; Mathieson, \textit{Great Britain and the Slave Trade, 1839-1865}.

\textsuperscript{35} Rose, \textit{Man and the Sea}; Mathieson, \textit{Great Britain and the Slave Trade, 1839-1865}.

easily under 10%. In contrast, at that point the British fleet was approximately half steamers.

This can be explained by two factors. First is logistical – steamers were reliant on coaling stations, which requires access to infrastructure ashore. As the slavers moved down the coast, this became harder to find. Second is due to risk – especially in the late Spanish trade, slaving vessels were used only once and then burned due to the difficulty in decontaminating the ship. Steamers were several times more expensive than sail ships, and would consume most of the profits of the voyage if lost. In this, we see complex interactions between the boarding regime, the overall capture risk, and the British advantage in speed. The causal arrow runs both ways – slavers cannot use steam because of the effectiveness of suppression, which causes suppression to be more effective due to the British advantage of steam.

The British were also effective in institutionalizing their tactical advances. Denman’s Boarding Manual formalized the innovations of this period. In Howard’s phrase, an effective cruiser captain was both a “walking lawbook” and a good sailor. This manual made the ‘lawbook’ portion somewhat easier by providing a checklist-like procedural flow complete with all relevant treaties, along with boarding tactics and techniques. On the first page of the manual, Denman’s signature is particularly clear: “the Slave Trade has been denounced by all the civilized world as repugnant to every principle of justice and humanity.”

37 Voyages Database.
38 Conservatively, a sail ship of around 200 tons, typical of slavers of the period would cost about $12-25k, while an equivalent steamer would run about $50k. Depending on the estimates of the profitability of the late trade, the voyage would net about $100k, so unless the steamer could refit for multiple voyages by going pirate, steam was too expensive for single-trip hulls. For period cost approximations, see contemporary newspapers, as well as the appendices of Chapelle, The Search for Speed Under Sail, 1700-1855; Frank Marion Bennett, The Steam Navy of the United States: A History of the Growth of the Steam Vessel of War in the U.S. Navy, and of the Naval Engineer Corps (Warren & Company, 1897); Eltis, Economic Growth and the Ending of the Transatlantic Slave Trade; Howard, American Slavers and the Federal Law, 1837-1862.
39 Howard, American Slavers and the Federal Law, 1837-1862. 73.
In this move, we see the importance of the interpreter between formal and practical knowledge – the individual who records practical front-line knowledge has a unique power in choosing what is worth writing down.\(^{41}\) The slavers, on the other hand, had less ability to formalize their tacit knowledge. This vulnerability became a factor during this period as the population of experienced slavers began to dwindle. It becomes a greater liability in the later trade, as new entrant American vessels knew little about the African coasts or tactics effective in running the blockade.

The slavers had moved some of their risk onto the slave fortresses after the equipment clauses made hovering off the coast dangerous. According to Andrew Foote, the American cruiser captain,

“Exposure to capture gave origin to the barracoons. A slaver could no longer leisurely dispose of her cargo, at different points, in return for slaves who happened to be there. The crime now required concealment and rapidity. Wholesale dealers on shore had to collect victims sufficient for a cargo to be taken on board at a moment's notice. This required that the slaver should arrive at the station, with arrangements previously made with the slave-factor, ready to "take in;" or that she should bring over a cargo of goods in payment for the slaves.”\(^{42}\)

Previously, slavers would move along the coast, bartering for the best prices for captives. This was now unacceptably dangerous for most slavers due to British patrols and their authorization

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\(^{41}\) Similarly, the individual who interprets a theory or doctrine into an operational plan has significant agency in application. This is even more important when the formal or the practical world is strongly scripted – by moving between the two, one can escape and alter structural scripts. Gen Petraeus' use of Small Wars Journal, and the inside-outside game with academic COIN theory and practical command in Iraq speaks to the ability of an individual to change a structure in this way. However, as the follow-up to the story tells, the forces that made the structure may re-assert themselves when disturbed.

to seize vessels equipped for slaving. Through pre-coordination with financial syndicates, slavers would arrange a rendezvous at a given slave fortress, which would already have captives prepared. After they were loaded, the slaver would then dash for the Americas.

*Mechanism Test: Transferring Risk to Shore with Pre-Coordinated Loading.* This provides an excellent opportunity to test the ‘theory of the firm’ logic behind the operational progress script. Increases in external threat causes the internal coordination costs to become relatively less expensive, and therefore we should see increasingly organized firms over time. If slavers begin to pre-coordinate pickups and thereby minimize time on the coast, they are acting in keeping with the expectations of this model.

Eltis makes the argument that decreasing middle passage times were a function of overall improvements in shipping technology. However, total time from Europe to Africa and then to the Americas decreased dramatically with the inception of national equipment clauses. While these were diplomatic efforts, they were inspired and enforced by the military experiences of the captains of the squadron. The quantitative account supports the prevalence of the pre-coordination and quick-loading tactic. The four graphs below describe the effect of signing a right-of-search agreement on both the middle passage transit time and total voyage time.43

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43 For all, I use an ordinary least squares regression and a fractional polynomial line fit, all with 95% confidence intervals. Dataset and STATA code available on request.
The statistical evidence generally supports Eltis’ argument about secular trends shaping the middle passage crossing time – the graph portrays little significant difference in middle passage time between vessels inside or outside the right of search network. However, total voyage duration shows dramatic differences between ships liable to be searched and immune ones. There is a dramatic universal drop in voyage duration, especially after 1840, which is when suppression intensified greatly. Controlling for decade and nation of registration, running against a right of search regime is associated with an 88-day shorter total voyage duration; this is about 40% of the overall average of 216 days.\(^{44}\) Right of search is also associated with an 8-day

\(^{44}\) P<0.01. Decade is also significant to P<0.01, with ten day decreases in transit per decade. None of the national panel variables are significant, but since right of search status is driven by nation, this is unsurprising. During this period the national demographics of the slavers are changing – especially the move from Portuguese to American and unflagged vessels around 1850 – but these nations also drop their total time precipitously from their baselines during the period associated with severe suppression.
drop in Middle Passage transit times with all the same controls, but this is less than 20% of the period average.\textsuperscript{45}

These dramatic decreases in voyage time due to the regime indicate that the slavers are hardening the exposed network nodes by exporting risk up and down the supply chain. As the period primary accounts attest, the slavers were devising ways to spend less time on the coast. Both slaver and cruiser captain writings describe criminal financial cartels which would pre-arrange pickups as part of financing the voyage.\textsuperscript{46} This minimized the time the ships spent in the danger zone. Therefore, the coordination they were previously achieving through market mechanisms was at this point being done through formal coordination and illicit networks. This trend of internalizing coordination costs in higher-threat markets supports the core mechanisms of the operational progress script.

\textbf{Mature Suppression: 1850-1867.} By this final period, the trade almost entirely traded flexibility for hardening. The British had the trade pinned from Southern Africa to Cuba, but the holdouts were more tactically and logistically adept than their predecessors at beating the cruising regime. It was not nearly enough; with the Brazilian departure from the trade, victory now looked within sight for the British public. With this success, support recovered from the crisis of 1850, and relative efficiency continued to advance. The tactical evolution of the squadron had hit its stride – the tactical suggestions of the captains of the 1840s and 1850s now shaped acquisitions choices as a few of those captains achieved flag rank.

In this, we find another story of tacit knowledge and relational networks. Denman and

\textsuperscript{45} P<0.01. Similarly, decade is significant, with 1.6 day decreases per decade. The decade variable is more substantively significant, and confirms Eltis’ hypothesis. Additionally, linear regression reveals that the ratio between middle passage time and total voyage time is significantly reduced by the right of search regime, with national and decade dummies – the ratio starts the case around 0.2, and increases to approximately 0.35 by the end. Right of search is associated with on 0.06 increase in the middle passage ratio, P<0.01. Voyages Database.\textsuperscript{46} Foote, \textit{Africa and the American Flag}; Lloyd, \textit{The Navy and the Slave Trade};
Matson’s generation of cruiser officers advanced through the ranks, gaining the allies and the social capital to institutionalize their informally-developed ideas about suppression. Those ideas proved apt – more than half the slavers of this period were intercepted, and the trade was fully committed to a defensive posture and therefore unable to weather further system shocks. Exempting the possibility of a radical British shift in preferences, it had become a matter of time until a shock broke the hardened but brittle trade. As previously discussed, there were at least two – an abolitionist Captain-General in Cuba, and the long-delayed American entry into the boarding regime.

Statistical Overview. Entering into this period, the majority of legacy players in the trade were already suppressed. France had been long since out of the trade. Palmerston’s major slave trade achievement, for all of its controversy, took the Brazilians and the Portuguese out of the trade. A residual number of Spanish-flagged vessels remained in the trade, but the overwhelming majority of vessels of this period ran either without a flag or illegally as Americans. In practice, the crews and the financing were largely international, but the number of flags available was now quite finite.

Slavers’ odds under the American flag were not particularly good. Two-thirds of these vessels were caught – about one third of these by the British and the bulk of the rest by the American squadron. Unflagged vessels did little better; half of them were caught. Slavers running under exotic flags did catastrophically poorly – 90% of them were apprehended. The Spanish had the best odds during this period, but had relatively little traffic nonetheless. Altogether, the regime captured 53% of traffic, with the British accounting for two-thirds of this total.
Status of the Supply Chain. During this final phase, the British network utterly supplanted the slaver networks on across the Atlantic world, afloat and on both shores. Throughout this period, the British increased their relative efficiency primarily by channelizing and disrupting slaver networks. Immunity was completely removed with the entry of the United States into the boarding regime. With the collapse of the slaving networks in Dahomey and the Bights, evasion options were severely constrained. Deepening British involvement in the region provided them excellent intelligence, robbing the slavers of a previous coastal advantage.

Escape options continued to decline as well with British technological superiority. For instance, from 1855 to 1865, many slavers would attempt only one voyage per vessel; since a ship with slaver signatures could not use legitimate re-fitting facilities, beaching and burning the ship to the ground destroyed incriminating evidence. While the late trade’s profits were high enough to tolerate such losses, there was little sense in building cutting-edge maritime technology into single-use vessels. Therefore, while the contemporary African Palm Oil trade

<table>
<thead>
<tr>
<th>Nation</th>
<th>Legal Status</th>
<th>Brit. Captures</th>
<th>Total Captures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal/Brazil</td>
<td>Search w/ Equipment Clause (Portugal,) &amp; Domestic Enforcement (Brazil)</td>
<td>14.3% (3)</td>
<td>42.9% (9)</td>
</tr>
<tr>
<td>Spain Suppressed</td>
<td>Search w/ Equip Clause, Domestic Enforcement</td>
<td>20.3% (14)</td>
<td>34.8% (24)</td>
</tr>
<tr>
<td>France Suppressed</td>
<td>Independent Suppression</td>
<td>0.0% (0)</td>
<td>100% (2)</td>
</tr>
<tr>
<td>USA</td>
<td>Independent Suppression, Search w/ Equip. Clause (1862)</td>
<td>23.8% (31)</td>
<td>66.9% (87)</td>
</tr>
<tr>
<td>Others Suppressed</td>
<td>(1 x Swedish, Norwegian, Argentinian, 1 x Sardinian, 5 x Mexico, 3 x British)</td>
<td>81.8% (9)</td>
<td>90.9% (10)</td>
</tr>
<tr>
<td>Unflagged</td>
<td>Complete Treaty Network, Channelized Trade: Angola to Cuba, Strong Suppression on Land &amp; Sea.</td>
<td>45.6% (110)</td>
<td>50.2% (121)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>34.8% (165)</td>
<td>53.0% (251)</td>
</tr>
</tbody>
</table>
was moving to steamships, the slave trade remained overwhelmingly sail-powered. While a few slave-steamers gained notoriety, towing their pursuers aft with speeds of up to 15 knots, less than 5% of the slaver fleet of this period incorporated steam power. As the British were moving to fast screw-steamers at that time, these costs ceded a huge performance advantage to the Royal Navy. The slavers could not harden the transoceanic links enough to defeat the British network.

They also could not export this risk to the coasts or to their logistical infrastructure. The slave fortress network was well on its way to extinction. Economic and political changes made slave raiding increasingly difficult. The situation in the Americas was even worse for the slavers. Cuba was now openly hostile and well-patrolled, and Brazil was long gone as a destination. The major powers increasingly used bonded-labor-like models to meet the demand for population in their American holdings, but the remaining slavers were so committed to smuggling models that they could not compete on the open market. They lost the American shipyards and financing by the early 1860s.

The British built a network-of-networks, which contested and displaced the slave trade everywhere. They consumed the space previously occupied by their adversary – coastal treaty networks where there had been slave fortresses, the boarding treaty network where there had been national cover, and domestic enforcement where there had been slaving demand and slaver infrastructure. At the end of this half-century project, the British built an ‘anti-slave-trade’ – their suppression network ultimately mirror-imaged the network of the slave trade itself.

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47 Voyages Dataset, using Variable for Rig.
48 Ciceron (Howard) was the 15-knot slaver. Percentages calculated from Eltis database.
49 Rose, *Man and the Sea*.
Recalling the counter-network boilerplate: “It takes a network to defeat a network.”

Interestingly, they were convinced up until the end of the case that the trade would re-ignite without continued suppression. In the words of the late phase abolitionist leader Thomas Buxton, “it will avail us little that ninety-nine doors are closed, if one remains open. To that outlet the whole slave trade of Africa will rush.” It is difficult to adjudicate this claim, but to their credit, they maintained suppression and the trade did not re-ignite. Perhaps this is an artifact of organizational learning, from the many reversals that followed major victories – the 1830 death and resuscitation of the Brazilian trade, the multiple resurgences of the Caribbean trade, the collapse and recovery following the intervention of 1850, or even the initial regeneration of the trade following the British 1808 exit. This is a difficulty of fighting networks; it is hard to tell when they are actually destroyed. The British eased pressure off slowly, and the trade remained flat-lined.

**CONCLUSION: MASTERING CHAOS.**

The Royal Navy West Africa Squadron prevailed by increasing their own organizational span and efficiency at the expense of their adversary while keeping their support strong. In the overall sweep of the case, Royal Navy enforcement fits primarily in the black market phase of the operational progress script. Still, the micro-processes of that script run throughout the case; for instance, slavers preferred to shop around the various coastal fortresses until risk forced them to organize. Increasing pressure from the cruisers and coastal interventions supported a broad range of formal and tacit demand restructuring measures, which we will discuss in the next section.

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The British found effective strategies to achieve the organizational progress imperatives: initiative and broad direction allowed their crews to act efficiently, while a ‘ratchet’ strategy on the coast overtook the spaces previously occupied by slaver networks at low support cost. The primary weakness of the naval campaign was its slow initial organizational learning – while the squadron could always boast of innovative thinkers, it took a decade before it found its footing, and another two decades before it hit its stride. It took, quite literally, a generation of West Africa Squadron veterans to rise through the ranks until efficient strategies were institutionalized. The trade’s natural chokepoints – the fortresses and the slave brokers, at the very least – could have been targeted far sooner. Fortunately, the vein of abolitionist sentiment ran deep and there was public support for a sixty-year campaign. The relative frugality of the squadron and the testimony of Royal Navy officers during public debates reinforced to this support.

The network ‘Boxer’ hypothesis best explains the sweep of the Royal Navy’s suppression effort. Force became effectual only when the illicit network was channelized; otherwise, it simply re-routed around British thrusts. On the other hand, regimes alone are an inadequate explanation – without Palmerston pushing through Portuguese resistance, the effort would likely have remained stalled. This would have placed it on weaker footing during Mr. Hutt’s 1850 defunding attempt. Norms played a critically important role in motivating individual naval officers’ initiative, but cannot themselves explain progress. Finally, since the illicit network is clearly responding to suppression efforts, we can reject the null ‘independent demand’ hypothesis. All of these factors together can explain these outcomes, when connected through networks. This was a battle of connectivity.

We conclude with three policy takeaways for modern illicit market suppressors. The British
had a strong, if implicit, theory of command and control built upon the expectation of initiative. The ‘swashbuckling’ of the squadron’s most effective captains was a decentralized command-and-control solution that maximized the chances of capturing rare events and ‘fast transients.’\(^ {52} \)

Conversely, they pinned the slaver supply chain through strategies that forced their adversaries to take on linear, defensive forms. Finally, the British used networks inside their own institutions in order to compensate for acquisitions problems.

*Policy Takeaway: Non-Linear Command and Control.* The British constructed a ‘network to defeat a network.’ This was built upon operator initiative, and stabilized within a peer-to-peer network that stabilized and institutionalized organizational learning. This, in turn, was built upon a generalizable theory of grassroots command and control.

In his seminal work on information theory, Claude Shannon described communications as a three-layered process: information starts with a physical layer of electrons or vibrations, is interpreted through a linguistic layer and finally concludes at a layer of abstract meanings.\(^ {53} \) Well-built command and control systems start from the bottom of this sequence and works upwards. The organization begins with a theory of connectivity, a strong idea about who should talk to whom. It then builds ontologies, so people working on the same sorts of things can speak a similar organizational language. Finally, it lays fiber, wires, or semaphore flags in accordance with the organizational theory and ontology.

The West African Squadron had a very strong organizational theory of decentralized innovation that emerged out of their experiences. Using Shannon’s framework, they used the

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\(^ {53} \) Claude E. Shannon and Warren Weaver, “The Mathematical Theory of Communication (Urbana, IL,” *University of Illinois Press* 19, no. 7 (1949).
language of initiative and intent; they then built command and control structures that enabled these things at low levels. Sea captains were given tremendous latitude due to the limited connectivity that senior leaders had with vessels at sea, and this latitude proved critically important in the squadron’s success. Early submarines and aircraft had similar connectivity constraints, and developed a similar culture of initiative. When advances in communications lift these connectivity constraints, there is a temptation to treat initiative as a now-unnecessary expedient and do away with it.

I doubt that a greater volume of direction coming down from the Admiralty would have improved the Africa squadron’s performance. However, ad hoc partnerships provided the squadron with political allies, unconventional acquisitions, and effective intelligence. In the introduction, we discussed the ubiquitous struggle of a ‘material school,’ which emphasizes vertical ties which empower the core,54 against an ‘initiative school,’ which emphasizes lateral ties that devolve power to the periphery of the organization. Command and control technologies can be used to build either type of ties. The core excels at mass production against stable problems, the periphery at locally contextualized rapid solutions. In the case of complex problems like these, senior leaders should ‘never let their connectivity exceed their maturity,’ and safeguard the operational culture of junior initiative.55

Counter-Network Strategy: Supply Chain Attack. The British also developed approaches to attack a non-linear adversary. This overall strategy stretched the supply chain taut, and then proceeded to dismantle it. A modern illicit market suppressor has much the same challenges – how does one identify and disrupt key nodes in a supply chain. Identifying these leverage points

becomes increasingly difficult deeper in the chain, as assets become less specific to the illicit trade and therefore less traceable. Deep nodes in the supply chain are attractive targets, but they are challenging to nail down. Typically, the suppressor has little fidelity on these deep targets; the illicit network has much higher fidelity and can therefore re-map around attacks. These deep nodes are still in a flexible grey market and therefore are not directly vulnerable. Until the network commits to a form as a black market, it can re-route around removed nodes.

We can intuit three techniques for successful deep network strikes from this case. Conservatively, a supply chain trace simply follows the adversaries’ risk export deeper and deeper into the network. This simultaneously solves an intelligence and an operational problem - successful attacks on higher levels of the supply chain often reveal deeper structures. Additionally, it forces the adversary network to commit to countermeasures, which removes re-routing options. This was the primary tool the British used – they began with the ships, moved to the shore facilities, and in some cases moved even deeper to the financial networks of the time. Sustained progress along a supply chain trace achieves a ‘ratchet’ effect, and therefore is an optimal baseline strategy for deep attack.

More aggressively, an Achilles’ node attack identifies a specific key player that is irreplaceable in all possible supply chains. Since there are no re-routing options, attacks on this node should severely damage the network. However, it is difficult to correctly identify such a node, and typically there are any of a number of competing theories as to what this node might be. However, if an Achilles’ node attack presents itself, it should be considered. Perhaps this might have been the American shipyards or the slave brokers; while such actions were discussed by players in this case, this technique was not effectively applied.

Finally, the Deep Flanking Alliance solves the deep supply chain intelligence problem by
partnering with an ally in close proximity to deep illicit infrastructure. They can effectively bring force to bear, as they know and often own the ground. In this case, Foote’s attempts to end the quasi-legal registration schemes\textsuperscript{56} the slavers were using to launder American vessels might have effectively taken the American shipyards out of the trade. These deep alliances support the larger ‘ratchet’ strategy, and it is therefore generally advantageous to partner with others who are more embedded in deeper parts of the supply chain.

These three tools can be used to reinforce the suppression regime as well. First, a watertight regime will cover down on all elements of the supply chain; this is generally best done through partnerships rather than unilaterally. Second, certain collective goods will advantage all suppression efforts. For instance, intelligence was as important in this case as in modern cases. The suppressor should focus on ensuring these critical enablers. Finally, lateral alliances with friendly institutions can provide tremendous resources to the regime.

\textit{Policy Takeaway: Unconventional Acquisitions.} The British also found effective bottom-up approaches to acquisitions. These served well within this case during the early, murky period of British sense-making. This pattern breaks down into roughly three phases – first, the squadron captured and commissioned the best of their enemy’s designs. We might call this the ‘liberation’ model, after the Second World War euphemism for taking and using adversary supplies. This is a strategy of the weak, as it cannot truly overtake its opponent; still, it kept them in the race and provided excellent opportunities for organizational learning. It is an elegant strategy when one’s sense-making is weak: when the competition is graded on a curve, copying the other guy’s answers gives you a decent outcome.

Second, the squadron searched their own institution for serendipitous designs – there may be

\textsuperscript{56} ‘Consular sea-letters.’ Foote, \textit{The African Squadron}.\textsuperscript{56}
some design or capability which exists in arms’ length, which might be acquired at low or no cost. This ‘found art’ model was commonplace in the Soviet Army amongst the warrant officer corps, though the applications of these ‘found’ goods was somewhat questionable. These two steps are not necessarily logically sequential, though the ‘found art’ model requires a stronger sense of ‘what good looks like’ than seizing and sailing enemy ships.

Finally, with the lessons learned from the ‘found art’ and the ‘liberation’ model, the Royal Navy could plagiarize and synthesize the best elements of extant models. They could also incorporate innovations and emerging technologies outside the reach of their opponents. This looks the most like conventional, large-scale acquisitions, but it stands on the shoulders of the organizational learning that happened in the two prior modes. ‘Template’ is a fitting name for this mode.

In that next case, Prohibition, we will see all three of these patterns at work as well. The US Coast Guard put captured fast rum-runners back into service, they leveraged ties with the US Navy to acquire specialized vessels, and they ultimately built a class of vessels toward the end of the case which incorporated those learned lessons.

However, the illicit market has ‘home court advantage’ in unconventional acquisitions. Both the Admiralty in this case and the Coast Guard in the next case put seized vessels up for sale, and both suffered from ‘vessel recidivism.’ Unfortunately, slave traders were prime buyers for seized slavers; rum-runners similarly benefitted from auctions. In both cases, the authorities came to the conclusion that if the seized assets could not be used by law enforcement, they should be broken up. If the cost for capturing the vessel a second time multiplied by the probability that it will be purchased by an illicit player exceeds the payoff from the auction, running the auction is irrational. In modern auctions, improved vetting mitigates this problem.
CHAPTER 7, DEMAND SHIFT: SOWING SALT IN THE SEA.
THE CHANGING ATLANTIC MARKET ECOLOGY DURING SLAVE TRADE SUPPRESSION, 1830-1867.

DEMAND SHIFTS: CLEAR, HOLD, BUILD.¹

“We do not believe, nor did we ever suppose it possible, that the Squadron will suppress the Slave-trade. The substitution of two letters makes all the difference. It is in the hope of re-pressing, not of suppressing the Slave-trade, that all reasonable men insist upon the blockade. What can be more absurd, on the face of it, than to suppose, that four-and-twenty cruisers can extinguish a smuggling trade where the profits are a thousand per cent.? We entirely agree with our opponents, that, whether the line of coast to be blockaded be 4,000 or 400 miles, a naval force will never be able to extinguish an illegal trade of such enormous value. When we talk of extinction or suppression, we use large terms, implying an object which cannot be achieved by any single means, however great or powerful.”

– George Stephen, Clapham-linked abolitionist, written anonymously.²

“Analysis of Evidence Given Before the Slave Trade Committee,” 1850.³

Indefinite high-intensity suppression of the Atlantic slave trade was a prohibitively costly proposition; only the hope of an endgame would make such a campaign make sense. In the last two chapters, we explored how the treaty network shut down the illegal slave trade’s grey market and cruisers disrupted the trade’s black market. These actions set the conditions for demand

³ Analysis of the Evidence Given before the Select Committee Upon the Slave Trade (Partridge and Oakey, 1850).
restructuring, a multi-faceted process whose objective is to disembed and supplant the social supports for the illicit market. By increasing the opportunity cost of the illicit good, people find other ways to meet their needs; if they do so long enough, those new forms supplant the old forms through path dependency and economies of scale. This was the hope of slave trade suppression; it was eventually realized, but imperfectly and in generally unanticipated ways.

Understanding demand shifts is difficult due to the emergent and complex nature of these changes over time. In this chapter, we will account for the known mechanisms of demand change over the period of suppression. These follow four broad patterns – cost imposition, political changes, economic shifts, and normative evolution. I forego formally weighting these causes or selecting a primary mechanism. These mechanisms are mutually reinforcing – for instance, economic shifts away from slavery reduced tacit political support for the trade, which accelerated these economic shifts by increasing the effect of cost imposition.

The suppression regime was part and parcel of the Atlantic world of the time. Clearly, not all processes that destroyed the foundations of the trade were direct results of the suppression campaign. However, the existence of the suppression campaign altered the course of secular trends such as industrialization in ways relevant to ending the slave trade. The effort created direct effects, catalyzed new emergent processes, and shaped extant processes. Given the magnitude of the suppression effort, little could have happened with a bearing on the trade during the 1800s without some interaction with the British campaign. Therefore, an ecological approach provides the most analytic leverage for understanding the relationship between suppression and shifting market forces over time.⁴

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Rather than attempt to straighten out these embedded, interwoven and reversing causal arrows, we can abstract out of these non-linear problems and evaluate if these mechanisms account for the outcome in the aggregate. So long as the mechanisms catalyzed by suppression are jointly sufficient to end the trade, cataloguing them demonstrates the link between suppression’s network stressing effects and breaking the illicit market’s path dependency. Moreover, the mechanisms need not be intended, they simply need to be catalyzed by the suppression regime. This reflects the meta-strategy that runs through this work – set the conditions for beneficial emergence, and something will take root. It is helpful but not necessary to formally understand *in situ* what that something is and how it works.

In the demand restructuring phase, organizational efficiency and support work on a more abstract level than in previous phases, but they propel progress similarly. The longer that the suppressor kept the illicit market disrupted, the more mechanisms they activated and the deeper those mechanisms took root. The efficiency of the entire anti-slavery enterprise – across both the public and the private sectors – determined how well the movement could make sense of these mechanisms. Effective sense-making allowed abolitionists to calibrate deliberate actions and identify emergent processes. Support, as before, provided the wherewithal to endure. In this phase, that endurance allows positive emergence and deliberate displacement to take root. We will treat these two mechanisms during the case. This impacted their strategic choices – the enemies of slavery realized that alternate production modes were an essential part of any solution. They attempted to shape these changes through support and subsidies, but ran into the same troubles as modern

conflict zone economic restructuring attempts. Their ability to direct the course of change was a function of their ability to make sense of the changes wrought through the anti-slave-trade campaign; this was generally quite limited.

Following Scott, I describe this as the process’ legibility. ‘Deliberate’ mechanisms were directly intended to produce the results they did – for instance, capturing slave ships released captives and increased the cost of the trade. They include direct approaches, such as the barracoon attacks, and indirect approaches, such as sending palm-oil traders to the African coast to facilitate a non-slave-trade economic activity.

‘Emergent’ mechanisms are catalyzed by the suppression regime, but without the initial knowledge or direction of the regime. While emergent processes by definition cannot be planned, some of these processes might be hoped for. In this case, abolitionists fervently hoped that ‘legitimate’ commerce would displace the slave trade on the coast. At least during the first half of the case, they could not inflict mandatory forms of commerce on the coast, but they could subsidize and encourage promising alternate products. Beneficial sorts of emergence might be ‘seeded,’ though the productivity of this approach depends on how well the suppressor understands the complex system into which they are injecting these inputs.

Some of these emergent processes remained unknown for the duration. For a meta-strategy, this is not a problem – one only needs to know that whatever they're doing is causing them to get closer to the ‘good;’ one does not absolutely need to know why it’s working. This is why having a clear picture of ‘what good looks like’ is so important in emergence-based strategies. This is the same principle as behind the classic idiosyncratic medical advice: ‘whatever you’re doing is

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working, so don't change anything.’

However, it is preferable to know why, because understanding mechanisms allows the suppressor to anticipate trends and unintended consequences. The suppressors identified some portion of these emergent processes. After doing so, they might leave it unmolested, but typically they attempted to harness and amplify the process if they found it helpful (or ‘ratify’ the process.) If they found it harmful, they would typically try to suppress it, or ‘squelch’ it.

Each of the following mechanisms incorporated some combination of deliberateness and emergence. An emergent process is deeply leveraged in complex external forces, so it powerful but difficult to control. Conversely, a deliberate process is more controllable but less powerful. They may also spawn emergence in unexpected ways. Managing these complex effects are much like skiing an avalanche – the chain of events cannot be undone, but one might stay ahead of the flow while avoiding paths that lead to cliffs.

The tension that runs throughout these mechanisms is between power and control – **the more emergence, the more leverage, but the more problems as well.** In order to secure an endgame, the suppressor must harness some degree of emergence, but must also ensure that their initial objectives are not lost in the process. The British achieved that end. Additionally, the suppressor should ensure that the ‘spin-off’ emergent processes from the suppression attempt do not cause too much collateral damage. Whether the British achieved this second criterion is a subject of great debate.

**Survey & Roadmap.** The Atlantic slave trade served a number of purposes on both sides of the Atlantic for societal elites. If the demand for the trade were to be undone, these ends would need to be met in another way. Alternately, if that did not produce the desired results, then the elites themselves might be swapped for others with different preferences. In the Americas, the
trade provided a massive source of cheap labor; in West Africa, the trade provided a revenue stream. On both of these shores, this resulted in path dependencies and addictive feedback loops as it reinforced the position of elites. While illicit market disruption broke the path dependency, demand shifts and elite swaps radically altered the Atlantic world.

Cost imposition was the first broad pattern of structural change. This pattern was the least abstract – actions in physical space such as seizing ships and attacking fortresses create concrete, direct, and easily traceable effects. These effected direct harm mitigation by releasing captives. Economically, infrastructure damage implicitly incentivized non-slave-trade activities, and it degraded the cadre of slaver captains vis-à-vis their licit competitors over time. Pressure and risk on the illicit network forces costly changes in the aggregate, such as paying bribes and purchasing expensive countermeasures. These mechanisms attrite fielded resources, but they do little to counter market recovery. The key cost imposition mechanisms were: 1) captive rescue, 2) seizures afloat and ashore, and 3) risk imposition and costly countermeasures.

Political changes were the second broad pattern of structural change. On both sides of the Atlantic resulted in domestic enforcement and a revocation of slaver sanctuary. This second major pattern was catalyzed by a combination of domestic changes and British power. Following Eltis’ argument, these actions in the Americas dramatically disrupted the trade. However, the anti-slave-trade project in West Africa was eventually swept up in the larger

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6 This latter cadre-degradation point is a pattern familiar from the world of counter-terrorism. If a certain class of player is attacked consistently over time, the cadre for that class of player will degrade provided the rate of the attrition is greater than the training/regeneration rate. The bottom tiers of a network can be recruited relatively quickly, so attrition at these levels generally cannot overcome regeneration. The top tiers of a network are generally hard to get at, and the cost for attrition may be higher than the ‘new leader generation’ cost. The middle tiers, though, connect these layers and must therefore communicate. In doing so, they become targetable, and therefore attrition cost for the middle tier is manageable. By removing these players, the top and bottom tiers cannot effectively communicate, and the network bogs down. Réka Albert, Hawoong Jeong, and Albert-László Barabási, “Error and Attack Tolerance of Complex Networks,” Nature 406, no. 6794 (July 2000): 378–82.

7 Eltis, Economic Growth and the Ending of the Transatlantic Slave Trade.
imperial project. This is a peril of complex processes – it is difficult to harness and control emergence, and these processes take on a life of their own. There are three major identifiable mechanisms of political change: 1) growth of the boarding treaty regime, 2) enforcement in the Americas, and 3) bilateral arrangements in West Africa. These mechanisms were more abstract than the direct attack modes; while they generated a deeper impact on the trade, they also generated complex and problematic sequels.

The third pattern sought economic substitutionary shifts. British attempted to subsidize these shifts from the beginning of the case. The colony of Sierra Leone itself was intended in part as an experiment in the superiority of free labor, in hopes of displacing slavery on the African mainland. This ‘mighty experiment’ was generally disappointing, but it provided the infrastructure for the suppression campaign and a base for landing rescued captives. The British positioned palm oil as an alternate African economic activity in opposition to slavery. Whether this was true or no, the British subsidized palm oil extensively, and production increased while slavery diminished. Asian shifts in labor sources was the most significant substitution for the Americas; while morally problematic, this shift was generally ratified by British policy.

There were three major mechanisms of economic substitution: 1) African coastal export shifts, especially Palm Oil, 2) replacement labor flows to the Americas, generally from Asia, and 3) general global competition between free and slave models of labor. The direct application of the competition foundered on its merits, but helped support a more subtle mechanism of long cycle economic change. Since slavers were pre-occupied hardening their supply chain against suppression, they could not keep up with secular labor market trends. I call this mechanism

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‘temporal freeze-out.’

These economic mechanisms were also abstract, and had deeply problematic follow-on effects. Legibility becomes increasingly challenging with these abstract patterns - the British came to understand at least the Asian shift in labor flows through the course of the case, and chose to ratify these shifts. Conversely, despite aggressive British subsidies, the substitutability of Palm Oil for slavery is still a topic of scholarly debate.

The fourth broad pattern, normative changes, is the most difficult to specify. The act of declaring the slave trade immoral set precedents and provided a moral platform for abolitionists. This was true even among the remaining slave powers. The global abolitionist movement produced allies in unexpected places and underwrote the whole campaign. While the movement of norms through global idea networks is difficult to track, its effects are apparent through seemingly serendipitous ad hoc alliances. A few intertwined pathways of normative entrepreneurship influenced this case: the global abolitionist movement shaped global norms; it also linked allies through domestic abolitionist organizations. Additionally, socio-religious missionary work in Africa took this normative entrepreneurship enterprise ashore. Normative changes were the most abstract, and following the pattern from political and economic changes, produced deep and lasting results but problematic follow-on effects. Most notably, the fusion of abolitionism and interventionism provided normative support for the Scramble for Africa.

For each of these mechanisms, we will describe a timeline of operation, from identifiable

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9 Perhaps content analysis or discourse analysis could provide a window on this diffusion. For instance, tracking a distinctive word like ‘right of search’ could trace a norm entrepreneur network. This is beyond the span of this work.
inception through legibility and to its conclusion or extinction. If these patterns would have been much the same in a counterfactual non-suppression world, then we cannot ascribe their results to the effects of suppression. In order to avoid non-falsifiability, we will test that the operation of this mechanism was sparked or at least shaped by the suppression campaign. Third, we will explore the interaction of the mechanism with other mechanisms and secular trends. Finally, we will evaluate the effects of this mechanism on the demand function and societal elites that supported the slave trade. We will also briefly explore follow-on effects of these mechanisms.

For each of these mechanisms, the Boxer model’s variables operate in the background. The ability to identify, monitor and make sense of emergent processes comes from a broad, flat network rather than a central formal structure. The more complex the process, the more this is the case. A ‘synthetic market’ performs well under these complex circumstances. Regime efficiency and ‘market-like-ness’ provides the sense-making faculties needed to harness emergence. Support provides the regime the wherewithal to see these changes through.

**Cost Imposition.**

The first broad pattern inflicts costs on the illicit market through direct attack, and indirect cost imposition through imposing risk and forcing costly countermeasures. Direct attack was the indispensable element of the suppression campaign; while the slavers were able to mitigate the boarding regime in most cases, their increasing costs to do so set the conditions for emergence. This pattern is the most concrete, the most directly and consciously tied to the suppression campaign, but the least leveraged in the social ecology of the Atlantic. Suppression inflicted costs on the illicit market, but it also demanded a high price from of the supporters of the campaign. These efforts were necessary but not sufficient conditions for market restructuring, as they supported all other efforts, but lacked an intrinsic endgame.
The three main drivers for this pattern were the naval patrol, attacks on coastal fortresses in Africa, and the high-intensity intervention in Brazil. All three of these were deliberate, commanded actions. While these actions yielded spin-off effects in the economic and political domains, their prima facie purpose was to increase the opportunity cost of slaving. They worked through three mechanisms: captive rescue, direct attack, and risk imposition.

**Cost Imposition through Captive Rescue.**

The British could not hope to ‘out-capture’ the slave trade, but recapturing captives was a normatively imperative element of suppression nonetheless. The re-captives themselves played major roles in the later phases of the campaign. The British intercepted approximately 160,000 captives during the suppression campaign. This is only about 5% of the traffic during this period, though correcting for pre-empted captives from ships which were captured empty, the number climbs to 19%. While tremendously significant for those rescued, this is still a small enough percentage that the aggregate trade could still make profit even with these losses.

If captive rescue is seen as a means of harm amelioration, then it fares better. Yet even here, controversy surrounds the effect of suppression on the status of captives. Contemporary sources,

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12 Voyages Dataset.
especially the ones opposing the campaign, argued that suppression led to worse conditions aboard ships and more reckless behavior on the part of the slavers. Correcting for swifter passage speeds, vessels running illegally experienced higher shipboard mortality, so there was truth to the critique. The moral calculus required to balance the benefits to the recaptives against the cost to the still-captives is beyond our purpose here. Even in a mechanism as direct as rescues, we find complexity at work in high-order effects.

The rescue mechanism was a deliberate process, yet its most important consequences were the result of emergence. Without this mechanism, 160,000 more people would have made the middle passage into slavery, though these losses were likely not decisive in any cost imposition sense. This mechanism primarily served as a deep support to economic, normative, and political efforts in West Africa, by adding to the population of the Krio people (Sierra Leone creoles.)

**Direct Approaches: Seizures and Infrastructure Assaults.**

Boardings and coastal assaults seized slaver assets and destroyed slaving infrastructure. This was the primary conscious, deliberate mechanism of the naval suppression campaign. The force-based approach was costly, created a mess, but certainly damaged slaver-held assets. Force is typically a blunt instrument, but it is what states know how to do well. This was a supply-side intervention, and could not intrinsically disrupt network recovery and demand-driven reinforcement.

Direct attack was a ‘deliberate’ mechanism, though did not return satisfying effects until directed against hard-to-replace bottlenecks such as coastal fortresses. Over time, the British attrited enough infrastructure ashore to induce bottlenecks at sea; during later periods, they were

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able to seize increasing numbers of vessels. This mechanism also supported emergent efforts ashore by inducing friction and stress on the slaver network. In the most important instance of this support, British direct attacks catalyzed domestic changes in Brazil through naval intervention.

The complexion of the entire campaign would have been different without the general enforcement effort. While it would have been desirable to focus on domestic enforcement from the outset, it is difficult to imagine a campaign that would have successfully suppressed the trade without these seizures. While the slavers were able to pass along much of their cost to the still-robust demand for captives, each move they made had to take into account the suppression regime.

**Indirect Approaches: Risk Imposition and Costly Countermeasures.**

Similar to direct attack, this is an indispensable element of suppression; increasing costs set supporting conditions for political and economic emergence. The existence of the boarding regime complicated life even for slavers who were not captured. The slave trade had historically been insured against loss, which lowered risk for the financial partnerships that traditionally supported the enterprise. The boarding regime dramatically increased these insurance costs.

Insurance jumped from 20 percent to 40 percent for Spanish-flagged slavers following improvements in the Anglo-Spanish boarding treaty.\(^\text{14}\) While the availability of insurance for theoretically illegal enterprises speaks volumes about the paucity of domestic enforcement, a twenty percent increase in costs would be difficult to bear even in an inelastic market. Similarly,

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insurance prices rose from 11% to more than 25% during the latter days of the Brazilian trade.\textsuperscript{15} Bribes followed a similar pattern. Of course, finding a way to outlaw insurance for this illicit trade would have been even more effective. Since the insurance market was international, doing so would have required international financial controls of the sort used presently to combat terror threat finance; this was not a possibility at the time.

This indirect cost imposition mechanism was also ‘deliberate,’ in that the suppressors intended it and the slavers consciously understood it. Indirect effects were more difficult to observe \textit{in situ} than direct attacks. Intelligence reports about increasing prices and various adaptations provided the British with a feedback loop, but widely varying reports on the trade’s profit margins indicates that they did not have a full understanding of its effectiveness. Indirect cost and direct attack are complementary – insurance and countermeasure cost should bid out to the expected cost of direct attack plus a risk premium.

\textit{Cost Imposition Summary.} Altogether, the cost imposition mechanisms were necessary but not sufficient conditions for demand shift. By increasing the opportunity cost for slaving, these efforts supported emergent political, economic and normative processes. The causal arrow still goes both ways in these relationships - suppression was itself reinforced by these processes as constituencies grew up around the new status quo.\textsuperscript{16}

Since these were deliberate processes, they were expensive and short-lived compared to emergent processes. However, as opposed to emergence-based processes, they had less problematic follow-ons – when they were done, they were (mostly) done. To use an ecological analogy, cost imposition plucked weeds out of the soil while waiting for seeds to sprout. It was

\textsuperscript{15} Ibid. 135.
\textsuperscript{16} Like any bureaucracy, the suppression structures were self-reinforcing, even as the overall suppression effort was self-exhausting. The legacies and professional capital tied up in the suppression effort by its captains-of-note sustained a constituency for the overall effort.
itself incapable of ‘salting the soil’ for slavery, and other growth would need to crowd slavery out of the ecology of the Atlantic.

**POLITICAL CHANGES.**

Changes to international law and other governments’ policies are more deliberative than the simple application of force that drove cost imposition. Politics is still the language of the state, and therefore the state knows in broad terms what it desires out of political changes. In most cases, though, it cannot compel these changes, and must await or generate ‘trigger’ events that align a would-be partner’s interests with their own. In general, these political changes are deliberate processes that latch onto stochastic events or emergent patterns.

In this case, three categories of political changes altered the social ecology of the Atlantic against the trans-oceanic slave trade. First, the British pursued international law as a means of building consensus against the trade. This undertaking enabled enforcement at sea and creates useful precedents for domestic norm entrepreneurship. This project was underwritten by British economic power and the relative weakness of partner states. Second, the British built a similar set of treaties with African powers using much the same tools. These are quite effective at

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17 Here, I part ways with Keene’s International Organization article. His ‘hierarchy’ effects are endogenous to institutions – the African network was built by the Royal Navy, the European network was built by the Foreign
channeling and containing the trade, but they increasingly entangle the British on the continent. Finally, the British helped catalyze domestic enforcement amongst the Atlantic powers.

**Boarding Treaty Network: Positivist International Law Legal Framework.**

The legal and political boarding treaty network, in the course of enabling search and seizure, slowly altered the international legal structure that surrounded the issue of slavery. These precedents became a useful platform for domestic abolitionists, and supported the overall British attempt to create international norms against the trade.

The treaty network was a deliberate set of treaties that capitalized on rare events to advance a British norm and enable enforcement of that norm. In a counterfactual world without the treaty network, the British would have probably pursued a *hostis humani generis* approach, labeling the slavers as pirates and employing unilateral force against them. The United States supported this approach as it allowed free-riding on the suppression campaign without signing a treaty with Britain. The nations who were still importing slaves would likely have hotly contested this approach.

This set of policies would have likely yielded similar results to the first phase of unilateral enforcement. Perhaps, a piracy-based approach would have caused stronger countervailing reactions amongst the major states in the trade; this could conceivably have exhausted the Office. The Portuguese treaty was negotiated under coercion, so the idea of differential respect for European sovereignty is not supported. Moreover, the British insisted on treating local kings as sovereigns through a Westphalian lens, hence the treaty network. Doing so imposed different views of polity on the continent than were present at the time. This hysteresis explains part of the deepening entanglement on the continent as the case goes on. Edward Keene, “A Case Study of the Construction of International Hierarchy: British Treaty-Making Against the Slave Trade in the Early Nineteenth Century,” *International Organization* 61, no. 02 (2007): 311–39, doi:10.1017/S0020818307070117.

support for the campaign more rapidly. This seems possible, given the political backlash to Palmerston’s interventions. The treaty network was therefore important in facilitating suppression-amenable norms.

Any foray into normative space involves an encounter with emergence. Jenny Martinez argues that the British treaty network set precedent for contemporary international human rights law. While British Foreign Secretaries preferred concrete enforcement-friendly language, the lofty words of the Congress of Vienna and later Tsar Nikolai II denouncing the trade proved useful in propagating an international norm. Unfortunately, that norm would become mated with the legacy of coastal intervention and become a structural support for colonialism in Africa.\footnote{Hochschild, \textit{King Leopold’s Ghost}; Arendt, \textit{The Origins of Totalitarianism}.}

\textit{African Political Shifts: Coastal Treaty Network & Regime Change.}

Starting from the 1840s Gallinas Barracoon attacks, the British became increasingly embedded in West Africa. British involvement in African political shifts was a ratified emergent process, catalyzed by the deliberate work of building the coastal treaty network. While the disintegration of the Oyo Empire was not a result of British action, the pattern of collapse was deeply altered by British involvement in ways detrimental to the slave trade. The British interpreted the conflict between the Dahomeans and the Abokeutians through the lens of the slave trade, and they picked a side. Their actions in Lagos caused a chain effectively disrupting major slaving operations north of the equator. These actions, at the very least, channelized the trade.

Unpredictable results are the price for invoking emergence. In this case, African political changes supported economic and normative changes by rendering some regions accessible to traders and missionaries. British involvement also led to the problematic sequel of colonial
moves into the interior. These actions set the precedent of force ashore in the name of defeating the slave trade, and that justification would last through the Congress of Berlin as a justification for colonizing Africa.

**European & American Political Shifts: Domestic Enforcement.**

Per Eltis, political changes in the Americas definitively disrupted the trade. I argue that these changes are ‘threshold events,’ or “discrete events triggered when an observable continuous variable passes a known threshold.” The continuous variable of social change undergirding these events grew from an ecology of economic and normative changes supported by cost imposition. A counterfactual suppression campaign without domestic enforcement would be unlikely to succeed. However, this campaign suffers from equifinality – any possible positive end would include domestic enforcement.

British support for domestic abolitionist movements does not suffer from this equifinality. Palmerston paid bribes and funded agitators in the Americas in hopes of gaining anti-slave-trade laws from the sundry slave-owning legislatures. Without marginally legal support for domestic enemies of slavery, enforcement might have taken much longer. Following Drescher, if the trade had remained legal and unsuppressed, it would have continued strong well past the date of its real-world demise, and with it robust domestic political constituencies.

The sequels from these interventions were less dramatic than in coastal West Africa. Perhaps this is due to a deeper understanding of the diplomatic environment in Europe and the Americas, or perhaps it had to do with a greater conservatism in these interactions. Britain’s relationships

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20 Eltis, *Economic Growth and the Ending of the Transatlantic Slave Trade*.
with these powers, with the exception of Brazil, were soon consumed with non-slave-trade issues and gravitated toward their historical norms. The intervention into Brazil came at a price of a deep enduring bitterness, though this may be due in part to the centrality of slavery in the Brazilian politics until its eventual abolition in 1888.  

Political Summary. Political changes were concrete enough to allow for deliberate action on the part of the state, but complex enough to require some degree of stochastic or emergent behavior if they are to be accomplished economically. They were self-reinforcing by way of normative and economic pathways: with each new treaty and domestic law, the abolitionist norm grew stronger along with non-slave-trade economic forms. However, the complex patterns that grew out of these political changes were also self-reinforcing. The British wave of interventions ashore eventually became a tide that propelled the Empire further ashore, whetting the imperial appetite while ensnaring them in complex local conflicts.

These changes fundamentally altered the operating environment for the slave trade. The political ecology of the Atlantic had become hostile to the continued traffic in captives. Britain did so through the leverage of domestic political tensions, but especially in Africa, these tensions led to difficult choices. Most problematic of these was the eventual inland colonial project.

Economic Shifts.

Market ecologies grow out of emergence rather than planning. Therefore, the changes suppression wrought in the Atlantic market ecology unfolded in often-unpredictable ways. The British attempted to plant and cultivate preferred alternative models, which had mixed results.

Ratifying emergence already nascent in the ecology was more effective, but also more

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stochastic. Some of this emergence was unacceptable and therefore squelched – the French trade in *engagés* (‘indentured servants’) was too akin to slavery. Some of it was acceptable for a time, and later squelched - the ‘coolie trade’ had shipboard mortality rates similar to those of slavers. While it was tolerated and even promoted for a time, it was eventually outlawed and suppressed. All of these processes rely on emergence to one level or another, and the challenge for the British was twofold: first, they must identify emergent processes, and second, they must shape the evolution of those trends. They were relatively successful on both counts, which is a testament to the continuing efficiency of the social networks behind abolition.

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**Economic Changes.** (All dates should be considered timeframes, as these are all emergent processes.)

Three broad trends reveal three separate mechanisms by which the Atlantic market ecology moved from the slave trade. First, economic changes on the coast of Africa reduced the ‘push’ factors in the trade. The most important efforts toward this end were the ultimately disappointing free-labor experiment in Sierra Leone and the deeply subsidized growth of the coastal Palm Oil trade. Second, new sources of labor supplanted the old in the Americas – the ratified ‘Coolie Trade’ and the squelched trade in *engages* were the two major sources for this labor.
Finally, secular trends changed the world in deep ways during this period, and suppression policies caused non-slave economic models to benefit more from these changes. The increasingly anachronistic character of the late trade was a function of human agency as well as historical forces – the suppression campaign consumed the adaptive energies of the slave trade. The suppressed trade was fully occupied defending itself; therefore, alternate labor models inherited the effects of industrialization. For instance, steamers were widely used by the Palm Oil trade in the same regions that had been frequented by the slave trade, even as they were denied to the slave trade. These mechanisms suffered from unintended consequences and moral complications – Palm Oil production in Africa was hardly free, and the ‘Coolie Trade’ looked much like the slave trade – but these forms eventually overtook the market ecology and closed off the space previously occupied by the slave trade.

**Economic Change in West Africa: Sierra Leone & Palm Oil.**

Sierra Leone’s experiment in free labor was a deliberate result of abolitionist hopes. Free labor was to outcompete captive labor on its own terms in the palm oil trade, and thereby displace the trade and demonstrate the folly of captive-labor logics. This did not occur. Therefore, the counterfactual world without the free labor experiment likely turns out much the same. Alternatively, a counterfactual world without Sierra Leone’s strategic position likely turns out differently, as the colony formed an inextricable element of the British campaign. Where the deliberate process failed, some value was salvaged through incorporating the architecture of this project into the blockade and British coastal political efforts. Therefore, the follow-on effects of the Sierra Leone free-labor experiment reflect those of the larger colonial project.
The effects of palm oil exports and coastal trade are more difficult to assess.\textsuperscript{24} The emergence of these trades was ‘ratified’ by the suppression regime toward the end of displacing slavery. However, recalling Felbab-Brown’s argument, economic restructuring is unlikely to work without political security. Slave raiding is economically akin to looting, while agricultural production requires more stability and territorial control. Given the tumultuous political situation in the region at the time, the slave trade played well to powers like Dahomey. Regardless of the theoretical competitiveness of agricultural exports against the slave trade, it seems highly improbable that palm oil ‘outcompeted’ the slave trade on economic terms in any meaningful sense during the case.

While the British ratified and subsidized this trade in hopes that economic forces would spur political shifts against slave-raiding, the pathway worked more effectively in the opposite direction. After the suppression regime catalyzed political changes, palm oil production would support those changes through economic incentives. Whether or not the slave trade and agricultural exports were economically interchangeable, palm oil exports had replaced slave trade by the end of the case. This mechanism, when partnered with political interventions and the use of force, fundamentally altered the economic ecology of West Africa in ways that inhibited the return of the slave trade.

\textit{Economic Change in the Americas: The ‘Coolie Trade’ & Engagés.}

Various marginally free alternate labor flows – the ‘Coolie Trade,’ French \textit{engages}, and other immigration schemes - demonstrate the difficulties of the dirty hands problem in deciding to ratify or squelch an emerging process. Allowing a lesser evil might reduce a known evil, but

\textsuperscript{24} For an extensive discussion of these complexities, see David Eltis, “Precolonial Western Africa and the Atlantic Economy,” \textit{Slavery and the Rise of the Atlantic Economy}, 1991.
doing so provides legal standing for that lesser evil. The moral difficulties here are beyond our scope. The strategic difficulty is that ratifying the lesser evil introduces hypocrisy into a narrative, which lessens the force of norm entrepreneurship. But squelching the lesser evil may endanger the entire suppression enterprise and thereby permit the greater evil. The suppressors squelched the trade in *engagés* because it was immediately identifiable as slavery. The ‘Coolie Trade’ was harder to identify as a moral evil, as it played to British proclivities for contracts and legal-formal visions of agency in labor.

A counterfactual world without the ‘Coolie Trade’ might have involved greater elite resistance to abolition and greater reliance on African labor flows. However, since this trade sustained the same sorts of institutions associated with slavery, it may also have supported the trade on a larger level. These alternate flows had indeterminate effects on supplanting the slave trade; perhaps for this reason, it is unsurprising that the suppressors had a difficult time deciding whether to harness or suppress this trade. Complicating this further, the political coalition behind British abolitionism had little sympathy for labor-rights movements, and therefore lacked the language to easily identify exploitation in contractual forms of labor.25

The ‘Coolie Trade’ bridges the Atlantic slave trade and modern models of labor trafficking. The modes of labor exploitation parallel the earlier trade, while the use of semi-legal cover and fraud resemble the modern trade. One might imagine the Chinese side of the trade through the lens of Sister Ping in *The Snakehead*26 - recruiting done through underworld contacts with the intention of placing a vulnerable would-be immigrant in a more vulnerable position. The


American half of the trade resembled the plantation agriculture of Atlantic slavery. This trade and its follow-ons have been alternately exploited and suppressed by various states from those days until now.


In his 1895 doctoral dissertation, W.E.B. DuBois argued that the twenty-year reprieve granted to the American slave trade by the Constitution gave the institution of slavery the breathing room to re-invent itself and survive another half-century.²⁷ By re-focusing from agricultural trade goods to industrial precursors, the institution made the leap into the next economic age. Had the trade been confined to tobacco, perhaps it would have perished, but slave-grown cotton fueled the burgeoning global textile industry.

I posit that this logic should also work in reverse: a trade under suppression spends its adaptive energies on immediate defenses for survival, and is therefore unable to position itself within long-cycle global trends. The benefits of emerging technologies accrue to competing models, and the suppressed industry becomes increasingly anachronistic. In order for this ‘temporal lock-out’ to work, 1) high levels of effective suppression must fully occupy the target illicit market and 2) an alternative market must exist to soak up would-be recruits and innovations.

Eltis is generally dour on the effects of naval suppression, but on this point he is optimistic. By raising the price for captive labor, he argues that the suppression regime restricted the use of captives to the few economic sectors that could return profits high enough to reimburse the cost of running the blockade. It is not difficult to imagine a world where the institution of slavery

made the leap into industrial production – sweatshops demonstrate the concept very clearly.
While the literature actively debates whether free labor was a requisite for modernization, the recent experience of unfree labor serving industrial needs through globalization seems to indicate that captive labor is potentially compatible with modern production. Had the trade continued to feed the institution of slavery, it might have made the leap into industrial production sectors.

A network under stress should have difficulty solving the “innovator’s dilemma.” In this dilemma, an organization becomes increasingly devoted to optimizing one business model, and increasingly incapable of leaving that model behind in order to jump to the next model. In order to make such a leap, the organization must cannibalize some of its previous product lines and accept short-term profit losses during the retooling process. This involves a collective action problem, which is quite difficult to solve while under suppression. This presents a second ‘freeze-out’ pathway – competing business models will gain from new technological trends at the expense of the market under suppression.

This pathway is evident in the adoption of steam-ship technology by African palm-oil traders around 1850, and the failure of slavers to do so. A steam-based business model might have allowed them to continue outrunning the cruisers; at least one slaver steamer found repeated success against the blockade. A defensively configured trade is brittle, though, and fully retooling the trade was impossible under suppression. Palm oil also benefitted from new business models where small merchants could buy space on routine routes rather than lease a ship outright; the illicit slave traders did not have this option. As global standard business practices

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shifted to support these new models, increasingly dated legacy practices would become relatively
more expensive.

This mechanism is abstract and operated as a shadow emergent process. It directly supported
economic restructuring, and indirectly slowed slaver adaptation and therefore supported cost
imposition. In a counterfactual world where slavery made the leap into the industrial age,
abolition in Brazil and Cuba would likely have been more difficult, and the trade might have re-
opened to regions that had not yet emancipated their slaves. In a world where the slavers made
the leap to steam along with palm-oil merchants, suppression at sea would have been far more
difficult. The follow-ons from this mechanism are difficult to project, as the mechanism itself
works by denying secular emergence to the suppressed market.

Economic Summary. The suppression regime had a mixed record in attempting to harness
these economic shifts. The British dogged determination to support palm oil ended up
succeeding on some level – though palm oil did not displace the slave trade through market
forces, it provided a stabilizing economic pillar for coastal leaders willing to partner with the
British. Sierra Leone and the larger experiment in free labor did not achieve its goal of
displacing slave labor during the case. Suppression and emancipation catalyzed new labor flows
into the Americas, but these were generally too close to the slave trade for comfort. On a
positive note, suppression confined the trade to its legacy uses, which caused it to lose ground
amidst global megatrends.

Positive economic measures such as subsidies are difficult to get right, as the current path
dependent legacies have ‘home court advantage’ – we already know the illicit good works in the
market ecology, whereas the posited replacement may or may not work. Overall, it seems the
British had more luck with negative measures – attack the slave trade and let emergent forces
displace it. The problem with negative measures is that you cannot really control the kind of emergence you get, so one must be efficient in quickly identifying emergence in order to ratify the good and squelch the bad. The key to harnessing these shifts remains efficiency, which allows the suppressor the fidelity to identify emergent patterns and update deliberate interventions, and support, which provides the time for these patterns to take hold.

**Normative Changes.**

Movements are, by their very nature, emergent processes borne of swarm intelligence.\(^{31}\) Loyalty to a simple, emotionally compelling meme builds a basis for trust and *ad hoc* cooperation between affiliates. If we envision a formal structure as a network, a movement acts more like a field effect in physics. A field is an amalgamation of a near-infinite number of minute point effects that follow a governing rule and can therefore be expressed as an abstract rule; a network is composed of discrete and fully specified nodes and edges. The same phenomenon might be expressed as a field or a network, with the field lens better capturing the deep foundations of cooperation and the network lens more useful for exploring the mechanics of that cooperation.\(^ {32}\) The ability of a movement to authenticate members to each other might be called a ‘trust-field,’ which facilitates *ad hoc* partnership amongst diverse movement members without requiring prior formal introductions.

In practice, significant social shaping phenomena generally involve a mix of conscious direction, performed by an identifiable social network, and subconscious emergence, acted out in a field of social affinity for a cause.\(^ {33}\) Movements generate networks, and networks stabilize

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\(^{31}\) Eric Bonabeau, Marco Dorigo, and Guy Theraulaz, *Swarm Intelligence from Natural to Artificial Isystems* (New York: Oxford University Press, 1999).

\(^{32}\) Or perhaps even as a unitary actor with as-if rationality and exogenous preferences.

movements. External formal structures and interests may attempt to harness a movement; if successful, both become entangled in often-unpredictable ways. Without delving too far into the agent-structure debate, the causal arrow seems to run both ways through resonant self-reinforcing loops, so it is more useful to think of normative change in ecological terms than as linear causal links.

The role of norms in suppression followed these contours. The suppression campaign was a product of and a contributor to the larger abolitionist project. The British-led movement shaped and was shaped by the suppression campaign and the larger anti-slavery foreign policy complex. The normative entrepreneurship which underwrote the movement was emergent to its very core, even as the movement’s leaders attempted to direct it toward strategic action. What this movement lacked in precision, it made up in social evangelistic zeal; the movement could generally recruit and embed institutional allies to compensate for this shortcoming. The case as a whole played against the backdrop of this massive and multi-faceted project in norm entrepreneurship.

The normative change pattern played out through two broad mechanisms. First, the

Normative. (All dates should be considered timeframes, as these are all emergent processes.)
abolitionist movement that set all of these events into motion remained active through the entire period of the case. This movement generally provided the domestic political force behind the suppression campaign. While the campaign was largely a consumer of this political capital, it reinvigorated political capital through its public successes and its indirect shaping effects. The global movement altered demand through transnational activist networks, which linked and empowered abolitionist advocates abroad. It also created a ‘trust-field,’ which allowed *ad hoc* relational partnerships that created strategic effects.

Second, starting around the 1840s, an adjunct effort of this movement held the most effective path for eradicating the trade along the African coast was a double-conversion to ‘legitimate’ commerce and Protestant Christianity. This was essentially the same equation that the abolitionist ‘merchant philosophers’ had applied to their native Britain since Wilberforce; African missionary efforts sought to export this social creed abroad. Both the global effort and the coastal effort altered their respective moral ecologies, and both in complex, entangling and problematic ways. For all the contradictions of the world that emerged, overt chattel slavery no longer had a place in it.

These pathways are intertwined through this larger movement. Therefore, rather than treating these as independent mechanisms, we will tell the story of the movement and treat these mechanisms as branches of that story. Three primary themes emerge: 1) an international ‘network-of-networks’ provides boundary-spanning access across political boundaries, 2) an international ‘trust-field’ facilitates *ad hoc* cooperation between movement members, and 3) the coastal norm entrepreneurship enterprise begins to displace previous meanings and cultural forms.

*The Abolitionist Movement: the Network-of-Networks and the ‘Trust-Field.’*
The abolitionist movement created a ‘ratification’ feedback loop between the enforcers and the larger social movement – this can be seen in Denman’s aggressive actions of 1940, which were interpreted to the abolitionist movement through his father, which then emboldened political leaders to support these actions, which resulted in further actions. The abolitionist movement had even exerted some shaping power on the Admiralty’s senior appointments to the West Africa Squadron\textsuperscript{34} – this relationship was mutually beneficial.

As a secondary effect, this ‘network-of-networks’ mitigated the strategic problems with the United States. Anglo-American cooperation was most significant in synchronizing the domestic American abolitionist movement with its British counterparts, but it yielded benefits in naval coordination as well. The unpopularity of the slave trade amongst American publics likely emboldened cruiser captains to continue the faux-unilateral tacit boarding arrangement on American flagged slavers. Most significantly, the ultimate political victory of American abolitionists put an administration in Washington willing to sign a boarding treaty and enforce domestic laws against shipbuilders.

It is difficult to imagine a counterfactual world without these networks, as changing this variable changes so much of the trajectory of this period. Assuming a less-aggressive counterfactual of a movement-breakdown in the 1830s, the suppression regime likely does not endure through the difficult times of the 1840s.\textsuperscript{35} I make no attempt to assess the follow-ons from this movement; abolition was implicated in so many trends during this time that the period would be difficult to recognize without it.

\textsuperscript{34} Mary Wills, “The Royal Navy and the Suppression of the Atlantic Slave Trade c. 1807-1867: Anti-slavery, Empire and Identity” (University of Hull, 2012), http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.572212. 121.
The abolitionist enterprise sought converts along the African coast, hoping that moral suasion would work there as well. It generally was not a major cause of change in the short-term through the posited rapid conversion pathway. However, the ex-captive Sierra Leone Creoles served as a bridging network in this norm entrepreneurship endeavor and the larger British project along the coast. Over the long run, these norms gained ground throughout the region, though generally only after a British aegis of colonial political protection was established. The missionary effort more deeply entangled the British in coastal politics, due to the expectation of protection for British subjects. In a counterfactual world without such entanglement, the British might been more aloof from conflicts such as the Defense of Abouketa, though the coastal treaty-making enterprise would likely have propelled them in this direction nonetheless.

The long-term effects of this endeavor are much more dramatic, as early religious legacies come to bear greatly on later futures. While sketching the path between the Niger Expedition and the present is beyond our scope, but the work of scholars David Laitin and Robert Woodberry provide a sense of the magnitude of these effects. Laitin explores the role of religion and the role of regional identities amongst the Yoruba, finding that the divisions politicized in the course of colonialism remain the divisive ones at present. Woodberry argues that the early presence of Conversionary Protestants (CPs) predicts about 50% of the variation in the later emergence of liberal democracies. Though the pathways posited by Woodberry would not have been active in time to alter the trajectory of the slave trade, they left deep legacies. These legacies reflect back on the international - as of 2008, the Church of Nigeria was the second largest member of the Anglican denomination after the Church of England, and an increasingly

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37 Woodberry, “The Missionary Roots of Liberal Democracy.”
activist voice in global Anglican politics.  

‘Trust-Fields.’ As a result of this norm entrepreneurship of abolitionist Transnational Activist Networks (TANs), abolitionism (or at least opposition to the slave trade) became a facet of the global liberal consensus. Therefore, the movement gained from the advance of these broad trends; movement members were able to work by, with and through international allies without even consciously understanding they were doing so.

Where direct, formal contacts were impossible, the abolitionist norm could operate through a sense of shared purpose between movement members, which facilitated collaboration. In these ‘trust-fields,’ affinity group members could easily build ad hoc partnerships across traditional boundaries without prior formal introductions. Seemingly serendipitous events were in part functions of these ‘trust-fields,’ as they allowed movement members to seize rare events and fleeting relational opportunities which otherwise would have been lost.

Throughout the case, we have seen a number of cases of ‘serendipitous’ cooperation across traditional boundaries. The ad hoc partnership between Royal Navy Captain Fitzgerald and American abolitionist Louis Tappan that allowed James Covey to serve as translator for the Amistad trial was possible because all three individuals recognized each other as abolitionists. It is exceedingly unlikely that a mid-level cruiser captain and an American industrialist would have known each other otherwise.

Similarly, Captain Foote of the United States Navy worked effectively as an advocate for improved American naval suppression because of his experiences with a similar ad hoc

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partnership. The British advocated on behalf of Cuban Captain-General Dulce to the Spanish government in order to gain the resources to suppress the trade. It is remarkable that Dulce would invite the British to do so, given the professional risk likely associated with airing such an issue publically. This partnership was possible due to Dulce’s liberal leanings – while he was more an enemy of the trade than the institution, common ideological affinity provided an initial basis for trust. Because of these ‘trust-fields,’ the British were able to take advantage of these fleeting opportunities and rare events.

_Normative Assessment._ It is difficult to isolate the effect of these ‘trust-fields’ as a whole. Like the effects of logistics, building ‘trust-fields’ results in other things working better. However, we can easily imagine counterfactuals in the previous three cases: Anglo-American vitriol could have easily prevented the Fitzgerald-Tappan partnership, and could have readily clouded Foote’s view of his potential partners. Dulce could have easily done the same and defaulted to a much less controversial, thought much less momentous tour as Captain-General. At least, these ‘trust-fields’ were an anti-fragile feature, which allowed the enemies of slavery to benefit from a disproportionate number of seemingly lucky breaks.

**CONCLUSION: SKIING THE AVALANCHE.**

*Slavery they can have everywhere. It is a weed that grows in every soil.*

- Edmund Burke, 1775.^[40]

We began this section with a discussion of deliberate cost imposition strategies. As described in the previous two sections, these efforts denied the grey market and partially disrupted the black market for the slave trade. Doing so left a vacuum in the economic ecology

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of the Atlantic. Following the Aristotelian dictum about nature and vacuums, emergence grew to fill the void. So long as suppression forces remained active, the primary British challenge was managing this emergence.

While the deliberate efforts were costly and grating, in a way they were simpler – if one wishes to recall the cruisers, provided they overcome bureaucratic inertia, they can do so. If one wishes to recall the political entanglements with coastal leaders or European powers, they might do so at some reputational cost. An attempt to undo economic emergence requires replacement with an alternate emergent path, which is essentially a new suppression campaign. And an attempt to undo normative emergence is well-nigh impossible. This is the classic promise and peril of higher-order effects – second- and third-order effects are highly leveraged, but very difficult to control.

The campaign aggressively attempted to seed emergence along the African coast after 1840. Altogether, the coastal treaty network, missionary activity, and subsidies for ‘legitimate’ commerce together created a mutually reinforcing complex of causes and effects. Intertwined political, economic, social, and normative causes created new viable systems, which grew and altered the coastal social ecology. Here, the British attempted to control emergence by ‘seeding’ new precursors and ‘weeding’ out competitors. They got much of they wanted, but at a higher price in terms of involvement than they might have been willing to pay at the outset of their entanglement with the region.

They also got a lot more than they initially wanted – while their heavily subsidized efforts for ‘Christianity and commerce’ were viable, they were never truly stable during this period. Since this complex could not stand on its own footing during this time period, the British elected to colonize much of the region. This, in turn, accelerated the chain of events that led to the
Scramble for Africa.

In the Americas, the initial immigration patterns that attempted to fill the void left by the slave trade looked remarkably similar to the slave trade, even if in smaller numbers. It is difficult to discern if any replacement sources of labor were ‘seeded’ by the suppression regime – presumably, abolitionists hoped free labor immigration would fill the gap, which would imply deep changes to the social forms of plantation agriculture. Instead, opportunism took its course and produced labor flows from Asia that presaged modern trafficking-in-persons. These were eventually suppressed as well. Eventually, the increasing role of industry and general changes in production yielded a space less hospitable to the early-1800s strain of slavery. The suppression regime played a role in soaking up the slave trade’s adaptive energies, precluding it from making a leap into this new space.

On both sides of the Atlantic, the suppression regime writ large supported emergent processes that altered the social habitat of the slave trade. However, not all emergence is good, or more precisely emergence does not have a valence in and of itself. In both Africa and the Americas, we see ‘dark emergence,’ or unintended and problematic patterns that result from an interjection into a complex system. The deepening imperial relationship with West Africa and the trafficking-like labor flows from Asia were results that were not anticipated or desired at the outset of the campaign. Concerning West Africa, Palmerston was adamant that “all we want is trade and land is not necessary for trade; we can carry on commerce very well on ground belonging to other people.” Nonetheless, the British took ground when they decided that carrying on commerce on ground belonging to other people had become too difficult.

Unexpected consequences are the collateral damage of using emergence.

Since suppression is an iterative process, the regime may elect to suppress this dark emergence in turn. In this case, the suppression regime included *engagés* and eventually the ‘Coolie Trade’ in its intended targets. It was generally successful in suppressing these trades as well – as opposed to the deeply socially and historically embedded slave trade, these emergent trades were relatively more vulnerable. It is easier to alter these collateral effects *in situ*, especially after the balance shifts in the suppressor’s favor.

In a successful case, the suppressor is able to complete follow-through and cleanup efforts. This prevents the hardened remnants of the suppressed market from metastasizing, and removes some of these nascent dark emergent effects in their infancy. In this case, the increasingly dark forms of the slave trade were each put down; the remaining personalities and infrastructure associated with the trade were seized, retired or co-opted. Therefore, I expect less ‘dark emergence’ from attempts that reach clear favorable conclusions.

Conversely, if a suppression attempt is terminated during an unstable phase of the campaign, or if the attempt is defined too narrowly and misses major sanctuary areas, the darkened and hardened illicit market structures are likely to endure. As we will see in the Prohibition case, enduring criminal organizations emerged in the course of the attempt to suppress ‘John Barleycorn.’ These collateral effects may yield a world that is worse than before; while this moral calculus is beyond our skills here, it is important to count the cost before setting out on one of these campaigns.

A key part of this cost is the cleanup. A lack of follow-through after a successful campaign can yield the same sort of dark emergent problems as outright failure. Heeding Charlie Wilson’s advice, it is eminently possible to change the world and then screw up the endgame. Whether the British did so or not is up to the reader’s interpretation. Either way, after 1867, the
transatlantic traffic in chattel slaves was no more.

**Hypothesis Testing.** As in the previous sections, efficiency and support were the critical factors in managing these patterns. ‘Market-like’ structures and robust conversation supported innovation and adaptation in each of these fields. Few of the plans that were fielded to reshape demand ended in the ways they were intended to at the start. But through lateral partnerships and tacit social sense-making, the larger suppression movement was able to make something useful out of the pieces on the board. This set the stage for emergence, which the suppressors were able to ‘feed and weed’ in order to reshape demand.

Sense-making means little without the support to endure long enough for emergence to take hold. Depth of support mattered in all four of our patterns. Politically, support sustained the will to remain entangled in West Africa and to create international frameworks. Economically, deep support provided the dogged determination to make the ‘legitimate’ industry of palm oil production work. While palm oil had ambiguous effects on slavery itself, it provided a source of revenue for non-slaving African principalities. The depth of the abolitionist norm in British society, and increasingly in global society, supported and was the engine that allowed connectivity for everything else. With robust network structures and continuing social salience, this norm was self-reinforcing; this provided the movement its robustness.

Conversely, support without sense-making is dangerous. A stubborn but poorly understood intervention is likely to spawn large amounts of dark emergence. Both efficiency and support are jointly required to harness emergence and thereby achieve meaningful and durable change.

Our alternate hypotheses cannot account for the changes in the Atlantic social ecology that resulted from intervention, nor for the British ability to exert some degree of control over these forces. Power alone certainly can generate system shocks and therefore emergence, but the bulk
of demand restructuring work is done through second- and third-order effects rather than direct
force. Formal regime design accounts for the African coastal restructuring complex, which was
increasing constructed by British fiat as the case went on. However, it cannot fully account for
emergent processes in the global commons or the strategic effects of ‘serendipitous’ cooperation
with the larger abolitionist movement. Norms provide the engine, but not the transmission, of
the demand-restructuring phase (and the regime as a whole.) The null hypothesis of exogenous
demand changes can be outright rejected; the suppression regime unmistakably altered demand
in the Atlantic market.

**Policy Takeaway: Ratify-Squelch Hard Choices.** We can draw two main policy takeaways
from the British struggle to shape the emergent forces they unleashed in the course of campaign.
First, the suppressors face difficult strategic and ethical choices in deciding whether to ratify or
squelch a process. The best substitutes for the slave trade looked much like the slave trade itself
and were similarly objectionable. Conversely, an ideal system of free labor flows would require
more restructuring time and energy that the regime could likely muster.

This presents a difficult choice for the political coalition behind the suppression regime:
accept too little change and the effort is in vain, try for too much and the effort may fail. If
politics is the art of the possible, the challenge for the suppression backer is to advance their
cause by locking in the ‘best substitute possible.’ A ratchet strategy may not be optimal – a
populist social movement may not be able to keep up with rapidly changing groupings of friend
and foe. It is useful to set out with a ‘best substitute possible’ in mind; but since that target will
likely require some updating through the course of the case, it is even more useful to have a clear
sense of the acceptable and watch for emergent patterns.

Ontological commitments of the suppressing coalition may skew these choices. During the
next case, Prohibition, milder forms of drinking reduced overall consumption. As opposed to their 18th century forerunners, the political coalition behind the Volstead Act could not countenance beer and wine, and could therefore not ratify this process that advanced their ends. Conversely, in In the Image of God, David Brion Davis describes how the abolitionists were generally estranged from labor rights movements and therefore had difficulty recognizing the fraudulent contract labor of the ‘Coolie Trade.’\textsuperscript{42} Introspection is a virtue when searching out emergent processes.

\textit{Policy Takeaway: No Last-Step-Metrics.} Second, ‘last-step-metrics’ are generally unhelpful in making sense of complex emergent processes. Given the clandestine nature of the trade, Hutt’s committee was remarkably close in estimating the percentage of captives released by the Squadron compared to the overall slave traffic – they estimated 4\%, while the Voyages database returns 5.4\% for 1820-1840, and 6.8\% for 1820-1850.\textsuperscript{43} While they were accurate in this metric, the metric itself was poorly suited to their question.

The number of recaptives did little to capture the effects of the British suppression, as cruisers were capturing large numbers of slave ships prior to onloading captives. ‘Number of rescues’ is a useful number if the captive population is fixed and finite, but it is not a helpful measure for an attack-the-network strategy. Non-loadings are generally preferable to re-captures, but we need a model of negative causality to reflect these effects.

Dealing with negative causality is a classic intelligence problem – as the joke goes, there are operational successes and intelligence failures. An intelligence success generally results in a

\textsuperscript{42} David Brion Davis Sterling Professor of History Yale University (Emeritus), \textit{Inhuman Bondage : The Rise and Fall of Slavery in the New World: The Rise and Fall of Slavery in the New World} (Oxford University Press, 2006).221.

\textsuperscript{43} William Ernest F. Ward, \textit{The Royal Navy and the Slavers} (Allen & Unwin, 1969). 196. Voyages Database and Website. The Instantaneous Rate of captures from 1849 to 1850 was significantly higher, around 9\%.
non-event: an attack thwarted or a threat avoided.\textsuperscript{44} An operational success results in a positive good event such as a capture. An intelligence failure results in a positive bad event, perhaps a successful enemy attack. If we lack a model that accounts for beneficial and intentional non-events, then we will be unable to optimize these non-events. Operations research methods are helpful toward this end, as described in our earlier discussion about measures of effectiveness.

Increasingly abstract models capture deeper effects, but become more sensitive to modeling assumptions. Economist E. Phillip LeVeen modeled the effects of increased prices due to suppression on the volume of captive traffic through the slave trade. He estimated that the price effects of suppression prevented another 850,000 captives from making the Middle Passage.\textsuperscript{45} This is a straightforward analysis using standard economic models, but even so it is sensitive to assumptions about elasticity.

Adding this sum to our previous total and assuming independence of mechanisms, in total the campaign might have suppressed the transport of 1.4 million would-be captives through deterrence, pre-emption and re-capture. This is 35\% of a hypothetical unsuppressed total of 3.9 million. Further, Drescher’s \textit{Econocide} thesis argues that the trade was put down in its prime, and without suppression, perhaps would have survived for several more decades. Projecting out an average of about 75,000 captives per year for the unmolested trade in the early 1800s adds perhaps another three million people would-be captives to the sum of the counterfactual legal trade, though by that point the hypothetical becomes hazy. However the counterfactual cashes

\textsuperscript{44} As a contemporary example, during the counter-IED campaign in Iraq, coalition forces initially relied on relatively concrete metrics – number of IEDs defused, number of attacks, number of IED emplacers neutralized. Since it is more efficient to defeat an IED ‘left of boom,’ the campaign began attacking the IED supply chain. This required more abstract measures – network throughput, residual connectivity, and attacks prevented. These all had higher measures of uncertainty, but they better reflected the more expansive effects of the attack-the-network strategy. Rick Atkinson, \textit{Left of Boom: The Struggle to Defeat Roadside Bombs} (Washington Post, 2007).

out, in a spectrum of direct and indirect ways, for better or worse, the handful of sailors of the Royal Navy’s West Africa Squadron changed the world.
SECTION 2 CONCLUSION: SKIING THE AVALANCHE.

ASSESSING ILLICIT MARKET SUPPRESSION: THE DIFFICULTIES AND COMPLEXITIES OF CHANGE.

“I have no stories to tell of Hair-breadth ‘scapes, or dangers in the deadly imminent breach. Ill-used, time-worn veterans! I cannot share your hardly-earned honours and although I do not feel with you your heart-burnings, nor the despair of hopes blighted and withered, yet, believe me, I feel for you. Don’t pretend to despise us. Don’t say that we have degenerated from the gallant tars of old: for know you don’t mean it. … These newfangled ways of ours have meaning after all - you confess as much.”

- “From the Note-book of an Officer employed against the Slave Trade,” The Naval Journal, 1842.¹

The British naval suppression of the slave trade is a story about connections across boundaries. The slave trade itself bridged the worlds of West Africa and the Americas in a horrific way to terrible ends. In the course of suppression, Britain and West Africa became deeply intertwined, for good and ill. During the campaign, people and groups who could sit astride two worlds at once played a disproportionate role in shaping the outcomes. Suppression is a story of two fundamentally incompatible networks fighting to control the Atlantic market space.

Recalling a few of the slavers’ world-linkers: Da Souza and the slave brokers held social capital on both sides of the Atlantic, and used that capital to facilitate human trafficking. Multinational magnates like Zulueta & Co. allowed slavers to pool risk and endure the pressure

of suppression. The international shipyards of Baltimore and New York, laundering vessels
tthrough ‘consular sea-letters,’ replenished the stock of fast slaver vessels. These players gave
the trade its the resilience – when the British would find, fix and finish one mode of slave traffic,
they would find a new way to connect supply to demand.

Arrayed against these players were the world-spanners of anti-slave-trade network: The
triumvirate of activist cruiser captains occupied the uncomfortable space between the zeal of the
abolitionist movement and the recalcitrance of the eminently conventional Admiralty. Doing so,
they made choices that neither group would have made in isolation, linking these two worlds in
an armed advance of “British conceptions of freedom”\(^2\) abroad. Crowther, James Covey and the
Sierra Leone Creoles held cultural cachet in both West Africa and Great Britain, much like the
slave brokers. Where the latter used that social capital to bridge the captives of African civil
wars with the fields of Cuba and Brazil, the former used theirs to culturally and later politically
link West Africa to Britain.\(^3\) Even the ships themselves bridged worlds - a mix of Britons,
Creoles, and seafaring African tribes (‘Krumen’) manned the British cruisers.\(^4\)

Any campaign in which different social worlds collide is by its very nature complex. A
conventional campaign is governed by ‘convention’ – both sides agree, at least to some degree,
on the fundamental assumptions that govern the nature of conflict. This provides a degree of
stability, as doing so makes the world predictable. Status quo powers are likely to agree to these
sorts of conventions, as wars with predictable outcomes are more likely to be solved through

\(^2\) David Eltis, “The U.S. Transatlantic Slave Trade, 1644–1867: An Assessment,” *Civil War History* 54, no. 4
\(^3\) Interestingly, they would later use that capital to do the opposite – during his lifetime, Crowther came to blows
with some of the more aggressive proponents of British imperialism, and Crowther’s grandson Herbert Macaulay
was a central figure in the later Nigerian decolonization movement.
\(^4\) Christopher Lloyd, *The Navy and the Slave Trade: The Suppression of the African Slave Trade in the Nineteenth
Century*, First Edition (Longmans, Green, 1949). Slavers also hosted increasingly international crews as
suppression went on as well.
diplomacy before fighting begins. Through convention, these powers inhabit one shared world, eschewing the unpredictable possibilities of world-bridging. Ideally, this diminishes the possibility of armed conflict. Perhaps for this reason, wars without shared conventions comprise the majority of 19th-to-21st century conflict. While conventions reduce degrees-of-freedom, the art of unconventional warfare is in expanding the conflict’s degrees-of-freedom to a point where your adversary cannot analytically keep up. This was the nature of the slave trade suppression campaign.

Unfortunately, the complexity inherent in these world-bridging campaigns makes their retelling challenging, and this makes their public recollection difficult. As opposed to battles that convert well into short books or films, these campaigns turn on long periods of dull actions, the pivotal moments can rarely be recognized as valorous, and the players involved can rarely be both effective and entirely innocent. These ‘savage wars of peace’ leave the more pacific factions of society shocked by the savagery, and the more bellicose factions bored by the peace.

This was a problem for the leaders of the West Africa Squadron during the case. On one hand, an increasingly pietistic humanitarian movement underwrote their campaign. A Quaker, for instance, would have difficulty understanding the why a captain would maroon slavers rather than send them back to governments who would never put them on trial. On the other hand, Nelson’s Navy service had difficult seeing the martial virtue in this posting. With the exception of a few pitched single-ship actions, most of the work through negotiations with tribal leaders (‘Key Leader Engagements,’ in Afghan counterinsurgency parlance), routine intelligence

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collection (‘Human Terrain Analysis’ and ‘Atmospherics’), and legal-bureaucratic paperwork. The quote at the beginning of this section describes one such officer’s soul-wringing search for meaning at a post where victory looked frustratingly distant; one where death was common, and in unpredictable, ugly and seemingly meaningless ways; one where there was no hope of glory in how you fought, but perhaps there was some such hope in what you were fighting for. These sorts of things matter, as they are the social foundations of support.

Between the desire for simplicity and the reality of complexity, we find the process of ‘contested sense-making’ that shapes the actions of all parties in the case. The world-bridgers do this remarkably well, because they can draw from several repertoires at once. Doing so, they create heuristics that link, simplify, and synchronize these worlds. The resulting ‘plausible actions’ work simultaneously and adequately in all of these worlds. This returns us to our original Boxer hypothesis – the side that structures itself to most effectively observe and orient themselves to the situation, and the side whose structure runs deep enough to take, maintain and update persistent action, is the side that is most likely to prevail in complex adaptive conflict.

**HYPOTHESIS TESTS, HISTORIOGRAPHICAL VALUE AND POLICY FRAMEWORKS.**

**Hypothesis Tests.** We began this section with three purposes: first, to test the Boxer hypothesis against power, regimes, norms, and exogenous demand shifts as an explanation for this case. As a quick reminder, the power hypothesis looks to the application of state power through direct force or intelligence to explain success. The regime hypothesis sees the core challenge as the collective action problem between states, and norms holds that changing meanings and identities over time can change behaviors. This case itself includes a number of sub-cases, along with a few changes in direction over the course of events; altogether, these

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provide a number of degrees of freedom within the case. Since these sub-cases are interrelated, we cannot treat them as independent instances, but a similar *gestalt* between these cases lends credibility to the core hypothesis.

First, we posited that the illicit market suppression attempt should follow the Operational Progress script. Beginning with a grey market, which uses public ‘focal points’ to conduct business, the illicit market should re-organize as a black market when the suppressors inject adequate risk into those focal points. The black market uses internal coordination to continue operations, which provides defensive hardening, but at reduced efficiency. If the suppressor can disrupt this black market, they can drive up the price of the illicit good, and thereby subsidize shifts in demand preferences.

The case as a whole generally follows this script, as do the sub-cases. The first major struggle for the suppression regime was the construction of the boarding treaty network. In the grey market form of the trade, slavers would travel under the flag of a nation where either the trade was legal or the British had no right of search. While the Anglo-American Lyons-Seward Treaty of 1862 finally completed the regime, the bulk of treaty-building was complete by the mid-1840s.

Palmerston believed that enforcement was basically possible even without patching the American hole; the slavers seemed to agree in part, as they increasingly began running the blockade with unregistered vessels. With increasing internal coordination between slave factories, slave ship captains, slave purchasers and financiers, the slave trade became a black market. The battle against the black market shifted focus away from the Foreign Office and toward the West Africa Squadron. While the British engaged in naval suppression since 1808, armed actions afloat and ashore took center stage in the campaign from 1840 until the
conclusion. These actions raised the cost of captives, all else being equal, which helped to reshape labor flows in the Americas over time. These pathways were borne out of complexity, and created complex problems in the aftermath.

The chart below summarizes the Operational Progress script across the main case and the sub-cases. Only the sub-case of the United States flag deviates from the script, as there is no grey market phase for US-flagged slavers. This can be explained by the availability of low-to-no-risk alternate flags during the grey market phase of the overall campaign. In each other case, when the risk increases past a certain threshold, the slavers begin to harden their business model by exporting risk to sanctuaries through formal coordination. In all other cases, the effective prosecution of black market traffic set conditions that supported demand shifts; in all cases, domestic enforcement proved key in defeating demand. Therefore, the Operational Progress script proves an effective heuristic for the timeline of this illicit market suppression case.

**Ops Script Testing.** We proposed at the beginning of this section that the ‘Boxer’ dueling networks model should best explain progress through these phases. We have positive and negative variation in support and efficiency within and between cases. In all cases, progress through the operational script is effectively predicted by these two variables. In two sub-cases, the power or regimes alternate hypothesis adequately explains this variation as well. The best explanation for the case as a whole is the Boxer hypothesis.

**Main Case.** During the grey market phase of the main case, the suppression regime increased its efficiency by building transnational networks that covered most relevant legal terrain for Atlantic shipping. Three factors worked toward this end – on the international stage, the boarding treaty network created an institution to stabilize and institutionalize relationships in this space. On the domestic level, the intelligence networks run by the Foreign Office reduced
the cost of information to the British, who were able to use that information to support both diplomacy and enforcement. The Slave Trade Department of the Foreign Office became a ‘fusion cell’ of sorts – despite only a handful of members, those individuals bridged the British policymaking process.

They did so using the ‘ratchet’ strategy, where they would wait for moments of leverage in bilateral relationships to extract the best treaty possible. The Foreign Office would also update the treaty network whenever they devised a legal countermeasure to a slaver tactic. Backed by the continuing strength of the abolitionist movement, these approaches kept the support cost low for these efficiency improvements; there was not a major support check during the bulk of grey market suppression. The ‘Boxer’ network’s hypothesis best accounts for this progress; the regimes hypothesis is a contender, but has a difficult time accounting for the rapid treaty network updating process.

The black market phase relied more on direct measures. While British forces dramatically degraded the slaver networks through interventions in West Africa and Brazil, they did so at a high cost in support and thereby triggered a support check. The cruiser captains’ culture of initiative captured the essence of ‘market-like’ efficiency; as veterans of the squadron rose to higher positions, they were better able to decentralize control of the squadron and diffuse tactical innovation. When Commodore Hotham attempted to reverse these trends, efficiency and performance suffered. We will further explore initiative as a flat-network solution at the end of this section.

The unilateral interventions against Portugal and Brazil spent fiscal and political resources quickly. This was not a mistake, *per se*, as frustration and a lack of progress would have eventually eroded support as well; it was more a ‘gamble for resurrection:’ aggressive measures
made in the hope of breaking the logjam and demonstrating the viability of suppression. This triggered the support check of Mr. Hutt’s Committee and their defunding attempt, which the regime survived through its radically-cross-sector network of supporters. Ultimately, the gamble worked – by 1850, Brazil was out of the trade, and the end of the Cuban trade was now a matter of time. Power accounts for progress during this phase, but given the thin margins by which suppression survived the 1850s, the networks hypothesis better explains the mechanisms that provided precise application of that power.

Demand shifts are more abstract, but they also demonstrate the inter-relationship between efficiency and support. Through effective civil-military integration, the British were able to make some degree of sense out of the African coast, the politics of the Americas, and the changing global economy. This allowed them to capture and attempt to harness emergent processes that ultimately displaced the trade.

However, the complexity of some of these processes overwhelmed their sense-making capacity – by going ashore in West Africa, the British stepped into a civil war. They templated their own analytical lens on those wars, which opened them to rhetorical traps from the various factions of that war – by way of British missionaries, the Abouketians prevailed upon the British to intervene in their behalf by arguing that they were the local abolitionist power, at war with slaving powers.\footnote{Wills, “The Royal Navy and the Suppression of the Atlantic Slave Trade c. 1807-1867.” 69-71.} When one becomes tied to a system, those ties run in both directions; the deepening ties between Britain and West Africa undermined the walls between the worlds and forced some sort of new synthesis. The eventual British imposition of colonialism was one self-serving solution to this tension, resolving the complexity of these relationships to which they were increasingly bound in their own favor. Sense-making efficiency strongly predicted
progress in this phase – the British were able to harness systems that they could make sense of, and were themselves caught up in systems that spiraled beyond these faculties.

The support for these demand-restructuring projects ran deep, in the form of the remarkably resilient abolitionist movement. During the mid-century, this support was challenged by the radical free traders, who saw their objectives in opposition to the slave-trade-suppressors. The continuing strength of the abolitionists proved the decisive factor, not just in demand restructuring, but also in the case as a whole. Accordingly, the norms hypothesis competes well in explaining this phase. Still, those norms served best in catalyzing power and regimes across multi-mode networks, rather than as a force on their own. Since it accounts for the spectrum of these mechanisms, the networks hypothesis is superior.

A summary of the transition points along the operational script for the main case and the various regional sub-cases is included below:
**Org Script Testing.** We have already discussed the interplay between efficiency and support in the main case. The sub-cases generally support the Boxer networks model as well.

**Cuban Sub-Case.** The Cuban Slave Trade sub-case focused on the long, slow process of wrestling with clandestine corruption amidst nominal cooperation. Improvements in the British cruisers and intelligence networks eventually matched the networks of Spanish corruption. When the British found allies in the Cuban governor’s office toward the end of the case, they linked into domestic enforcement and prevailed. All of this was supported by an increasingly global movement against an increasingly isolated Caribbean slave trade. The networks hypothesis explains this well.

**Brazilian Sub-Case.** The Brazilian Slave Trade sub-case turned largely on the British willingness to use power in the face of Portuguese and Brazilian opposition. As in the Spanish case, abolitionist intelligence networks battled pro-slave-trade intelligence networks. As for support, the British used the Brazilian desire for diplomatic recognition as a wedge to gain at least nominal laws against the slave trade; these domestic laws were used as a basis for armed unilateral intervention. The interventions of 1840-1850 can explain the outcome adequately.

<table>
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<td>Port. Slave Trade</td>
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<td>US Slave Trade</td>
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</tr>
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through power alone, though the networks hypothesis better explains how the British reduced the
diplomatic cost of using that power through regimes, and how they gained domestic enforcement
through links between Brazilian and British abolitionists.

*Spanish Sub-Case.* The national sub-case of the Spanish flag, much like the Cuban trade, is
explained by the struggle between corruption and the British progress through the ‘ratchet’
strategy. Similarly, the Portuguese flag’s sub-case follows the same trajectory as the Brazilian
slave trade. Both of these support the networks, power, and regimes hypotheses.

*United States Sub-Case.* The United States sub-case tells a unique network story. Where the
two governments could not formally co-operate, their low-level operators off the African coast
worked together with great effect from time to time. When this cooperation was squelched,
these gains were lost. Similarly, the Americans and the British worked out tacit cooperation
deals at high levels – the United States did not protest when the British unilaterally boarded US-
flagged slavers. When these tacit bargains were undone, the slavers attempted to return to the
US flag. The support story in the United States pitted anti-slave-trade sentiment against
Anglophobia; when the former took precedence over the latter under Lincoln, US
accommodation for the trade came to an end.

*French Sub-Case.* The French flag sub-case is an exception, in that the French eradicated
their flag’s use in the slave trade through the blunt use of power with relatively little
coordination. Since they had a large navy and a relatively small slaving fleet, they could stop
their own participation through brute force; this strategy would not have favored the British
against the larger slaving fleet.

In summary, below is a summation of the two organizational script variables across the main
case and all regional and political sub-cases:
Altogether, this case and all of its subcases strongly support the ‘Boxer’ network hypothesis. When either efficiency or support increases, the suppression regime makes progress; when they decrease, they lose ground. The main exception to this pattern is the support cost from the unilateral interventions of the 1850s. This can be explained in efficiency terms - by breaking the logjam of Portuguese and Brazilian non-cooperation, they put the campaign back on a plausible track to victory, and thereby recover support in the long run. While power, norms and regimes explain sub-cases, or provide alternate explanations to parts of this case, only the network hypothesis explains it as a whole.

A few scope conditions apply to this illicit market suppression finding. First, this campaign was conducted over a commons; the mechanics of illicit market suppression in an area of consolidated governance may differ greatly. Second, this campaign remained very high on the British agenda for the duration – while this is a function of strong support, niche campaigns such as modern endangered species protection may follow different dynamics. Finally, the slave trade
is a remarkably resilient organism – against a simpler trade with more obvious vulnerabilities, a simpler explanation might be sufficient.

*Counter-network Strategy: Cultures of Innovation and Initiative.* From these findings, we find that networks are central to success in certain types of global counter-illicit-market campaigns. This finding can be potentially be applied to larger command and control questions. We have seen that decentralized command structures and a culture of initiative go hand-in-hand.

Cultures of initiative and innovation are more useful than cultures of control in seizing crucially important rare events. In this case, the most successful Royal Navy captains followed the dictates of venture capital firms – fail early, small, and often, but win big. This is a ‘market-like’ culture, which makes use of pragmatic association rather than formal structures. By doing so, the campaign accelerates its response speed. As Admiral McRaven describes in his book *Spec Ops*, this competition is about ‘small margins in brief windows,’

9 and finding the perfect answer is less important than getting to a good answer first.

The British, in general, fostered this initiative amongst their captains. They also made good use of the results – they would capitalize on actions that advanced the suppression regime, and they would manage the consequences of those that did not. This created an ‘anti-fragile’ system which stood to gain from random rare events. When commanders attempt to bring their captains ‘back on the reservation,’ they lost the vitality required to innovate against a highly innovative adversary. However, there are dark sides to this diffuse control: corruption is a valence of innovation. Selection, training, and trust networks are crucially important in ensuring that the people who are given the latitude to innovate will do so for the mission rather than for

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themselves.

Leadership-by-intent ‘mission command’ models make good use of these cultures; industrial approaches that seek to direct actions generally negate their benefits. When dealing with a complex problem, it is critically important to ‘know what good looks like.’ In a planning approach, one does well to work backwards from a fixed solution, and thereby build a precise map of the way forward. For a complex problem, broad, chaos-tolerant direction is more useful than precise plans. When the ground is hopelessly complex, a compass is better than a roadmap. A good picture of ‘what good looks like’ allows network members to capture passing opportunities, while a deterministic plan with fixed measures of effectiveness may readily blind them to opportunities that do not fit the plan. A complexity-based strategy moves forward through many plausible steps toward that picture of the good, rather than through executing an ironclad theoretically optimal plan.

**Historiographical Value.** Our second objective was to add to the historiography of this case. The primary empirical contribution of this work toward this end is the analysis of the Voyages database from the perspective of naval suppression and slaver risk, included as Appendix B. These findings reframe the effects of suppression – like building a dam, flow continues at a high level as long as there are a few holes remaining in the regime. When these holes are blocked, the water pressure may carve a new channel, though initially with a reduced flow. Eventually, if all of these holes are filled in with concrete, the dam will hold and the river can be diverted. Additionally, channelizing the flow solves the legibility problem for strategists, who can then bring force to bear.

The application of operations research methods to a historical case also yields novel results. We saw that if we measure re-capture rate only against illegal slavers, we double the
effectiveness of the squadron. If we include a hypothetical total of captives pre-empted by
capturing empty vessels, the rate more than doubles again. This finding alone should
demonstrate the value of this method.

**Policy Value.** In our third objective, we sought to frame this case as a text for policymakers.
We’ve uncovered a number of useful refrains in the course of our recounting. Two of these
findings of these describe technical monitoring, evaluation and acquisitions questions – first,
overly concrete ‘last-step-metrics’ are misleading when fighting a leveraged, networked
adversary. As opposed to a conventional fight, where one can count tanks or planes, most of the
forces in these sorts of fights are in an ‘abstract reserve.’ The asymmetric player can regenerate
losses from deep pools of social capital or, in this case, forces of demand. Therefore, just as
body counts were an unhelpful measure of progress in Vietnam, and immediate number of IED
attacks were also misleading in Iraq, the amount of re-captives misses the deeper and weightier
network dynamics. More abstract metrics, such as counting ships, brokers, or financiers, would
have been more helpful. The best measures use the ‘sense-making’ logics of the illicit market
itself – the going price for bribes or insurance rates, for instance. However, abstract measures
become more sensitive to modeling assumptions, and so the art of monitoring and evaluation is
to calibrate the measures to the operative model for the illicit market.

Second, it is difficult to determine what sorts of platforms are required to defeat an adaptive
adversary, and even more difficult to coordinate these platforms through unwilling
bureaucracies. Therefore, the operational leaders of the suppression campaign do well to use
unconventional acquisitions strategies. By using adversary platforms against them, and by
searching for apt platforms lacking gainful employment inside their own institution, these leaders
gain the knowledge and experience to formalize later purpose-built designs.
The last four policy takeaways have a common theme: the messiness of intervention. First, the United States effectively invited British ‘unilateralism-by-request’ through tacit understandings. All the way up to the point of de-conflicting language in British boarding manuals, the Americans were aware and even actively encouraging the British to solve their flag-control problem. This allowed cooperation that would not have been possible though overt treaties, given the fractiousness of American politics. However, the covert nature of these relationships proved brittle when the slave trade attempted full-scale adoption of the American flag. These tacit arrangements may allow for workarounds, but clandestine arrangements allow for free-rider problems and are difficult to re-negotiate. The morality governing tacit arrangements was unclear in this case, and is unclear today - do nothing, and the primary harm continues; make a tacit arrangement, and you stand to make unpredictable spin-off risks.

Second, the operators themselves are often implicated in these paradoxes. We discussed a number of ‘peacekeeping noir’ episodes and trends. British cruisers made a semi-overt policy of marooning slavers post-capture. If slavers were just marginal ‘legitimate merchants,’ as they had been a few years prior to the bans, or if they were romantic smugglers, as arch-slaver Theodore Canot clearly saw himself, these actions would amount to murder. However, in almost all cases, these slavers would never face trial. If slave trading was itself tantamount to murder, due to the casualties on board, then letting a slave trader return home was also a bloody choice.

In this, the operators have no clean option; by virtue of their participation, the captains will be implicated one way or another. There is a temptation to let that implication end with the operators in these sorts of situations, but this pusillanimous move erodes the relationship between these operators and the larger movement. These ‘Kobayashi Maru’ no-win scenarios have a corrosive effect on the soul over time. The society owes a duty to the operators that it
places in these situations to come alongside them in the wake of these dirty choices, provided operators act within orders and the dictates of conscience.

Third, since the illicit network will attempt to transfer risk wherever possible, it is likely that intervention will make conditions worse for victims still in the trade. This is counterbalanced by the fact that suppression is preventing some number of would-be victims from entering the trade, and rescuing some who are currently in the trade.\(^\text{10}\) In this, intervention introduces a number of principal-agent problems. Since the British are doing this moral math on behalf of others, we find another difficult moral dilemma about the conduct and consequences of intervention.

Finally, through intervention, the suppression campaign sets into motion emergent and often unpredictable processes to fill the void left by the illicit market. Some of these are deeply problematic, as the easiest replacement for an illicit market is a slightly less objectionable similar market. The suppressors must decide whether they will ratify emergence that helps eradicate the original evil, but implicates them in a new evil, or if they should hold out for a cleaner solution. The latter choice may cause the failure of the campaign, so there is a fourth dilemma here.

Between these four dilemmas, the leaders, operators, victims, and adjuncts of these sorts of campaigns become ensnared in difficult choices. This may deter an intervention, but even in this there is a dilemma – doing nothing is its own choice with non-neutral consequences. Complexity cannot be avoided, so it must be confronted.

\(^{10}\) This logic applies to onboard resistance, as well. This is one more case of ghastly arithmetic – consider the case of slave resistance on board slavers during the legal trade. While the role of resistance in retaining human agency cannot be overstated, the prospects of resistance for the resistors were appalling; even in the best case, if the captives managed to overtake the vessel, they were far more likely to die at sea than find shore. Very few Amistad-like cases dot the historical record. However, the prospect of resistance forced slavers to carry additional crew and incorporate additional costly defensive measures; in the aggregate, the captives who died in the course of resistance probably most likely saved more people than were lost through resistance. The dilemma is that those saved are generally not those who resisted. Eric Robert Taylor, *If We Must Die: Shipboard Insurrections in the Era of the Atlantic Slave Trade* (LSU Press, 2006).
Policy Takeaway: Entanglement and ‘Crossing the Bar.’ The intervener is inevitably changed in the course of an intervention. In the course of the British engagement with West Africa, the British initially attempted to sequester themselves on islands and wholly-controlled enclaves. If the campaign could be conducted through offshore influence, it might avoid becoming part of the political dynamics of the coast. However, the coastal treaty network and missionary activity made this increasingly untenable.

Entanglements run both ways, and African leaders became attuned to British politics just as British leaders attempted to come to grips with African politics. The provided both groups avenues to pursue their goals by using the rhetoric and interests of the other. In “The Ontology of Political Violence,” Stathis Kalyvas argues that civil wars involve both a ‘master’ cleavage and local tangentially related conflicts. Local political entrepreneurs pursue private, local goals by claiming allegiance to a larger faction in the conflict. A number of African political leaders seem to have mastered this art, pulling the British into Yoruba civil wars.

Conclusion. Drescher recounts the contingency of the campaign’s outcome:

“The presence of British anti-slave trade policy meant that sooner or later the vital African source of New World expansion could be cut off, one sector at a time. It is easier to dismiss the impact of British persistence against the grain of economic interest than to imagine the relation of coercion to freedom without it. A nation with a less engrained commitment to antislavery as a matter of national honor might well have cut its losses in the midcentury crisis. It might well have called home its fleet in

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1850, allowed the expanded flow of Africans to the Americas, and recognized the South in 1861 on impeccable grounds of political and economic self-interest.”¹⁴

The depth of British support was one of the two pillars of the trade’s extinction.

The other pillar was an increasingly adaptive and flexible regime, supported by the initiative of cruiser captains, the Foreign Office’s ‘ratchet’ strategy, and a willingness to take decisive, complex and often controversial actions. In Drescher’s words, “the great experiment was in fact a great improvisation.”¹⁵ These frameworks grew more efficient in time, as the slavers became increasingly beholden to cartels and other inefficient structures. Supported lasted long enough for regime network efficiency to rival that of the slaver’s market. Accordingly, the British were increasingly in a position to bring power to bear.

The vacuum created by suppression sparked and shaped emergent processes, which supported changes that displaced the slave trade in the Atlantic market ecosystem. A combination of economic growth, political changes, and normative evolution salted the soil for the Atlantic trade. New social realities sprung up in its place, some of which were deeply problematic: “A century after its political emergence, abolitionism was routinely invoked by European powers as a major justification for imperial expansion and political domination.”¹⁶

The seeds of these paradoxes might be found in the risks taken and compromises made in the course of the campaign; this is the collateral damage of a complexity-based strategy. Drescher argues the collateral damage of inaction might have been far higher:

“Abolition did not halt imperialism, but it shaped even that procession of pride and
power more profoundly than we realize. By the end of the 19th century antislavery had become the gold standard of ‘civilization.’ Without abolitionism late-19th-century imperial expansion would have incorporated both slavery and the slave trade into the toolbox of European and Muslim imperialisms. Not just millions, but tens of millions of Africans might have continued to be captured and deported. Millions more would have died *en route* from the African interior, in transcontinental journeys and in ‘seasonings.’ … All around us remains overwhelming evidence that abolition eliminated only one major network of human brutality and death. Yet it is hard to imagine a world that would have been far worse off without its elimination.”

The British paid a high price over the course of this campaign. They made others pay a price as well, often against their will. But they accomplished their purpose.

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17 Drescher in Ibid. 236.
September 1934, Off the Northeastern Seaboard. Two years after the repeal of Prohibition, liquor smuggling was back in force.\textsuperscript{1} Repeal nearly doubled the pre-Prohibition taxes on liquor, and there was plenty of margin to keep smugglers in business.\textsuperscript{2} The schooners of Bill McCoy’s ‘Rum Row’ were long gone by this point, chased away by the Coast Guard’s patrol boats more than seven years ago. Syndicates replaced these independent smugglers with a fleet of swift, low-profile vessels built specifically for the trade and equipped with radio sets for arranging clandestine rendezvous. The Coast Guard responded with a crash course in signals intelligence, and the battle between the rum-runners and the blockading cutters moved from the waves to the airwaves.

And so, at the pre-coordinated time a rum-runner captain keys his high-frequency radio, contacting his syndicate’s shore-based pirate radio station. Transmitting in code, he sets up a rendezvous with his high-speed contact boat, who will ‘run the rum in’ from international waters to American shores.

Miles away, the radio intercept kit aboard Coast Guard Intelligence patrol boat CG-210 springs to life. Crewed by an officer, a cryptologist, three radio technicians, and three traditional Coastguardsmen, the ship verifies the identity of the rum-runner’s radio callsign and determines a bearing to the offending vessel. The spy trawler passes the bearing along to a Grumman floatplane, who then runs the down bearing line at 120

\textsuperscript{1} Daniel Okrent, \textit{Last Call: The Rise and Fall of Prohibition} (New York: Scribner, 2010); Malcolm F. Willoughby, \textit{Rum War at Sea} (Fredonia Books (NL), 2001).
\textsuperscript{2} Projection of post-repeal liquor smuggling, Intel Reports, US Coast Guard, 1931-1937. NARA RG 26.
knots. Within a few minutes, the aircraft spots the rum-runner, and establishes a lazy left-hand orbit over the offending vessel. The pilot uses his ship-to-shore radio to contact New York Division headquarters, who vectors a 165’ swift trailer to intercept and board.

By this point, the rum-runner has abandoned hope of making his rendezvous. He makes best speed toward his homeport in Nova Scotia. The circling Grumman pilot realizes the ‘rummie’ will make Canadian territorial waters before the patrol boat will catch it. Swapping frequencies to the Royal Canadian Mounted Police marine common channel, he coordinates a hand-off with a Canadian revenue cutter. This rum-runner is well known to Canadian authorities, a recurring line on a common suspect list shared between the two nations monthly. Familiar with its homeport and its owners, the revenuer trails the ship back to its Lunenburg dock. There is no charge on which the rum-runner can be arrested, so the pursuit ends there. Still, any day where a rum-runner returns home fully loaded is a good day for the revenuers and a bad one for the syndicates.³

This vignette, based on a US Coast Guard after action report from 1934, reads more like a snippet from Zero Dark Thirty than from a Prohibition-era gangster film. The Janus-like Prohibition enforcement contest had two faces – the Prohibition Bureau’s high-profile campaign against saloons and speakeasies on land, and the Coast Guard’s tactical and technical

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³ The introductory vignette above is hypothetical, but directly reflects from capabilities and tactics of the time. By September 1934, the Coast Guard could direction-find (DF) rum-runner radio transmission, vector aircraft using these bearings, and hand off targets to cutters for boarding. Relations with the Nova Scotian ‘H’ Division of the Royal Canadian Mounted Police were friendly to the point of sharing direction-finding technology and monitoring common radio frequencies for positive hand-offs during pursuit. The rum-running syndicates were similarly well organized, and employed ships purpose-built for defeating the Coast Guard’s patrol vessels. Memo traffic between RCMP & USCG, Intelligence Reports, Engineering Reports, US Coast Guard, 1927-1934. NARA RG 26.
competition with rumrunners on sea and across the airwaves. These two organizations were
clashingly different, and the two campaigns yielded dramatically different results, but neither
particularly resembles the popular retelling of the period.

The pop-culture presentation of the Prohibition era sets wild-eyed moralists against fedora-
wearign gangsters amidst a sea of corruption and booze. By these accounts, the 18th Amendment
was doomed to failure from its outset. Mercifully, the 21st Amendment put this ‘dry bender’ out
of its misery and consigned it to history, restoring the *ante bellum status quo*.

I demur. The 18th Amendment carried within itself the seeds of its own destruction, but the
outworking of that destruction was more complex than a morality play about the folly of
legislating morality. Prohibition self-immolated, but it burned down the saloon in the process;
even the ‘wets’ did not seek the return of the saloon as it had once been – straight-whiskey-
drinking, deeply political, and exclusively male.4 Repeal did not itself bring an end to illicit
liquor traffic; for a time, it made that traffic worse.5 Bootlegging is as old as the Whiskey
Rebellion, and large-scale rum-running did not end because conscientiously objecting smugglers
made peace with the law upon repeal (after all, bootlegging is as old as the Whiskey Rebellion)
but rather was extinguished by coordinated and aggressive state action culminating in the mid-
1930s.6

As with all history-turned-parable, there is truth to the popular retelling. The Prohibition
Bureau was, in large part, a patronage trough rather than a law enforcement agency.7 The
Volstead Act, which enacted national Prohibition, testified to the art of the politically possible
but utterly misapprehended what was possible in the world. The national mood, while generally

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4 Okrent, *Last Call*. Clipping, RG 26, NARA.
6 Ibid.
7 Okrent, *Last Call*. 
against the saloon, did not support restrictions of the sort proposed by the Wayne B. Wheeler and his Anti-Saloon League. The same institutions that the Anti-Saloon League pressured, twisted, and turned in order to extract ‘dry’ legislation would have to work properly in order to enforce that legislation.

The strange combination of unprecedented political success by a pressure group and catastrophic implementation yielded a world where, in the words of Vaudeville performer Will Rogers, “the drys had their law and the wets had their liquor.” By the mid-1930s, the speakeasy killed the saloon, and the laws and the liquor reconciled themselves to each other through a severe excise tax. Per capita drinking decreased, organized crime grew, the Anti-Saloon league failed (though its suffragette allies prospered); high liquor taxes remain, and co-ed speakeasies resemble modern happy hours more than the pre-Prohibition saloon. Prohibition altered drinking in lasting ways, though not in the ways desired by the Anti-Saloon League.

**The ‘Rum War.’** Of the stories that played out upon this backdrop, the contest between the US Coast Guard and maritime smugglers was the most incongruent with our pop-culture trope of this case. In contrast to the newly enacted Prohibition Bureau, the Coast Guard of this era recently returned from combat in World War One, and found a *raison d’etre* in the campaign against maritime smuggling. While they generally did not agree with the contents of the law, the

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9 Okrent, *Last Call.* 114.
10 Ibid. & NARA RG 26 Clippings.
14 Okrent, *Last Call.*
Coast Guard nonetheless proved more successful than the Bureau of Prohibition in enforcing the laws against illegal liquor.16

The ‘Rum War’ for the marginal waters surrounding the United States remains less well known than the exploits of Ness and Capone,17 yet rivaled the campaign on land in terms of budget and scope.18 While the Prohibition Bureau shuttered saloons and smashed stills on the public retail end of the Prohibition campaign, the Rum blockade cut supply between the wholesale warehouses in Canada and the Caribbean.

From 1920 until 1924, a force of six aging sub-chasers under the auspices of the Prohibition Bureau attempted to keep the nation’s shores dry. They failed.19 During this period, the rum fleet grew to three hundred vessels, with fifty hovering off the East and West coasts at any given time.20 This task was given to the Coast Guard in 1924, in exchange for an appropriation of twenty surplus Navy destroyers and more than two hundred patrol craft. That force shuttered ‘Rum Row,’ the fleet of liquor ships anchored outside the three-nautical-mile territorial water limit off New York, by 1927.

Rum-runners countered by moving to purpose-built smuggling ships and radio-equipped syndicates, resulting in a spike in liquor traffic from 1930 until the stock market crash of 1932. During this period, the Coast Guard focused on exploiting rum-runner communications as an affordable counter, as the national mood had turned away from new major capital investments in

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16 Willoughby, Rum War at Sea; Eric S. Ensign, Intelligence in the Rum War at Sea, 1920-1933, January 2001.
17 The questionably retold exploits, according to Okrent.
19 Memo traffic, Congressional Testimony (1923-1924), Newspaper Clippings, NARA RG 26.
20 Weekly Intelligence Summaries, CAPT Root to RADM Billard, Initial Conditions, 1924. NARA RG 26.
liquor-fighting.\textsuperscript{21} Repeal in late 1933 brought a brief lull, followed by resumed smuggling at pre-Prohibition levels by late 1934 due to production problems and heavy excise taxes on liquor importation. Renewed funding, full-scale implementation of signals intelligence and aircraft, deepening international partnerships, and legal provisions for seizures up to fifty miles out to sea put an end to this reinvigorated illicit trade. Large-scale liquor smuggling off the American coast ended in late 1936, with a few of the hardest-core rumrunners turning to narcotics smuggling.

This relative success was not due to lack of trying on the part of the rumrunners. In the course of the ‘Rum War,’ Coast Guard measures met rapidly fielded rumrunner countermeasures, which were countered in turn by new Coast Guard measures. Liberty Engines and V-hulls gave the rumrunners forty-knot ships, but the Coast Guard turned captured Cigarette boats back on their former owners and were soon enough building their own versions of the design.\textsuperscript{22} Rumrunners took to airwaves with codebooks, and the Coast Guard hired Elisebeth Friedman of later NSA fame to break them. In her words, the rum-runners employed cypher systems “of a complexity never even attempted by any government for its most secret communications.”\textsuperscript{23} The rumrunners moved operations to bases as far-flung as Tahiti, and the Coast Guard chased them there with human intelligence assets and consular agents. The speed of innovation for both sides during this contest was remarkable, as was the sophistication of their solutions.

\textsuperscript{21} Okrent, \textit{Last Call}.
\textsuperscript{22} Seized Ships Archive, Seized Commissioning Procedures, 1924-1933. NARA RG 26.
\textsuperscript{23} Ensign, \textit{Intelligence in the Rum War at Sea, 1920-1933}. Friedman personal correspondence, Court Testimony. NARA RG 26.
In the course of this geographic, technological, intelligence, and legal cat-and-mouse game, the Coast Guard developed efficient organizational structures for dealing with a complex adaptive adversary. The diagram above, which describes Coast Guard signals interception capabilities by 1935, illustrates how quickly these capabilities advanced. To put this in context, the technologies fielded by the Coast Guard parallel those developed during the counter-IED campaign in Iraq – fusion cells, precision geolocation, persistent surveillance aircraft, signals intelligence – and in many cases, the Coast Guard developed and fielded these capabilities faster..
than their modern counterparts.\textsuperscript{24} The introductory vignette, drawn from tactics and capabilities
of the late phases of the campaign, bears a strong resemblance to modern ‘attack-the-network’
models.

Similarities between the Coast Guard’s interagency network and the Special Operations
liaison officer network built by General McChrystal\textsuperscript{25} and Admiral McRaven are no less striking.
The Coast Guard’s approximately 300 commissioned officers built habitual relationships with
the State Department, Customs Bureau, British port officials, Army Signal Corps, Royal
Canadian Mounted Police, and the Prohibition Bureau; Commander Root, the chief (and for a
time, the only) intelligence officer of the Coast Guard made appearances before Congress and
the Supreme Court from time to time. The rum trade could easily jump from one place to
another, but by the end of the case, it could no longer find places of profit where the Coast Guard
did not already have friends. Like platelets fusing to cover a wound, the aggravation caused by
the rum-runners catalyzed conversations amongst like-minded people in the interagency and the
international. The fact they were able to do so much in so short a time bears explaining,
especially when the thousand-some officers of the Prohibition Bureau did so little.\textsuperscript{26}

First, this case provides profitable policy parallels. The Coast Guard arrived at many of the
same strategies and structures as modern counter-network players, and therefore has something
to teach modern policy-makers. These similarities allow us to generalize, and to critique,
contemporary approaches to network suppression. Most significantly, their experience

\textsuperscript{24} Rick Atkinson, \textit{Left of Boom: The Struggle to Defeat Roadside Bombs} (Washington Post, 2007).
Moreover, capabilities developed in the quotidian sparring of this asymmetric campaign would play important roles
in the Second World War, especially cryptography, small boat design, and air-to-sea radio.
\textsuperscript{25} Stanley a McChrystal, “It Takes a Network,” \textit{Foreign Policy}, April 2011,
http://www.foreignpolicy.com/articles/2011/02/22/it_takes_a_network.
\textsuperscript{26} Schmeckebier, \textit{The Bureau of Prohibition}; George (Chairman) Wickersham Commission Wickersham, \textit{National
of the Prohibition Laws of the United States: Message from the President of the United States Transmitting a Report
of the National ... the Prohibition Laws, Both before And...} (University of Michigan Library, 1931).
demonstrates that disruption alone is an insufficient answer for a complex threat – the Coast Guard’s ability to collaborate with interagency and international allies proved a more lasting asset in the long run than their ability to incapacitate a given model of rum-running.

Second, the Rum War’s history casts a long shadow on present policies. A sampling of the cast of characters named in the case’s archival records: William and Elizebeth Friedman, later co-founders of the NSA, who advanced the craft of code-breaking while hacking rum-runner codes;27 “Wild Bill” Donovan, founder of the Office of Strategic Services and progenitor of the CIA and SOCOM, who aggressively enforced Prohibition as US Attorney for Western New York;28 Harry Anslinger, America’s first ‘Drug Czar,’ who rose to prominence running Prohibition’s offshore human intelligence network;29 and J. Edgar Hoover,30 who needs no introduction. Modern institutions as diverse as codebreaking, asset forfeiture law, the twelve-mile territorial sea, intelligence fusion cells and fast attack craft all share origins in this case.

Finally, this presents an excellent case for the ‘network duel’ hypothesis. The Coast Guard takes ground, experiences reversals, and ultimately succeeded in a large-scale illicit market suppression campaign. The variations in support through the case, and the variations in efficiency and structure between these agencies, provide an opportunity to test the organizational and operational scripts.

This stands in stark contrast to the calamitous performance of the Prohibition Bureau. In juxtaposition, the different stories of these different agencies provide a matched control group.

In the viral spread of both corruption and incompetence within the new bureau, we see some of

27 Ensign, *Intelligence in the Rum War at Sea, 1920-1933*.
30 All in NARA RG 26 Correspondence with Intelligence Office.
the perils of flattening an organization. Both corruption and innovation involve deviation from established processes; we might call corruption an extractive valence of innovation. This is the central danger of flattening an organization – informal decision-making can damn an institution as readily as it can redeem it. In its own way, the Prohibition Bureau was a flat organization – resources and information moved very quickly between agents and criminals. The organizational challenge of this case is steering between the paralysis of bureaucracy and the catastrophe of corruption; to become flat enough to compete with an adaptive organization without losing accountability in the process.

This case compliments the Slave Trade case, as both are conducted on a commons during a time of technological change. The Coast Guard flattened itself very quickly relative to the Royal Navy, as advances in communications and transportation provided for the requisite conversations much more rapidly. These came at a price, however – the high modern bureaucracy of the 1920s had a lower tolerance for tacit traits like initiative and judgment, along with a much greater hunger for metrics and committees. Conversely, Prohibition’s support lasted only briefly, while the Abolitionists persuaded their nation to fund suppression for much longer – the anti-saloon lobby expended most of their political capital on 18th Amendment, and left little for the enforcement effort.

Accordingly, between the span of the Slave Trade case and the Rum War, we see contrasting initial conditions for an illicit market suppression campaign. The West Africa Squadron had the benefit of deep support for an extended period, but lacked an efficient organization at the outset. In contrast, the Rum War began with a combat-hardened Coast Guard and a huge influx of resources, but support decayed very quickly in the course of the campaign. In both cases, a parallel organization failed to perform due to shortcomings in organizational adaptation – the US
Navy’s Africa Squadron failed to de-bureaucratize itself and was therefore largely ineffective, while the Prohibition Bureau failed to ward off corruption, and was therefore effective in achieving goals that were at odds with its mission. Since these two cases speak to each other, we will briefly trace the distance between them.

**HISTORICAL CONTEXT: THE RISE AND FALL OF THE REFORM MOVEMENT.**

If the suppression of the Slave Trade was the zenith of state power against illicit markets, American Prohibition era has a strong claim to being its nadir. The forces motivating this campaign must be understood in the context of the time. Drink had long played a major role in early American life. In the highly cohesive social context of the early eighteenth century, the externalities associated by drink, (even a lot of drink,) could generally be held in check by social accountability. However, a complex system, if disturbed, will seek a new natural equilibrium, and the late nineteenth century was not lacking in disturbances. Three major system shocks – a whiskey glut, large-scale immigration, and the processes of urbanization and industrialization resulted in an unfathomable amount of drinking - in Okrent’s phrase, America was “awash in alcohol.”

This led to a countervailing response that culminated in Wayne B. Wheeler and the Anti-Saloon League. Wayne Wheeler is a strong contender for the most effective lobbyist in American history. As General Counsel of the Anti-Saloon League (ASL), he was certainly the most effective lobbyist of his day. His innovation of ‘pressure group’ politics, now a staple of lobbying, was everything the WCTU was not – the ASL was focused on the single issue of banning the saloon, targeted swing districts, and delivered votes on the margin to whichever

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31 Okrent, *Last Call.*
32 Ibid.
33 Ibid.
34 Ibid.
candidate would support Wheeler’s policies. Wheeler didn’t require actual agreement from his elected patrons, only compliance in their voting.35

While this tack granted him tremendous legislative leverage, it shifted the movement toward outsized wins at the ballot box at the expense of education and persuasion. Largely as a result of Wheeler’s actions, Prohibition came to dominate the American political scene of the early twentieth century.36 Upon this riven foundation, Wheeler orchestrating the passing and ratification of the 18th Amendment. However, these tactics came at a cost in legitimacy and social ire. He would soon find citizens more difficult to compel than their elected representatives. Since Wheeler had barely considered enforcement, these ‘original sins’ would plague the campaign for the duration.

This was not solely a case of reach exceeding grasp. Wheeler had borrowed against the future to get his law – graft from the newly formed Prohibition Bureau had been promised away before the bureau came into existence.37 In effect, Wheeler bought the 18th Amendment on credit, without budgeting for a mortgage. There was a certain political logic to this approach: since amendments were heretofore indelible, enforcement would eventually catch up if given enough time. If the bank couldn’t foreclose, then one would have forever to pay their debts.

However, one cannot push a political machine into ‘tilt’ in order to achieve extreme ends, and then expect the system to work efficiently once those ends are achieved. The ‘original sin’ of Prohibition was a confusion between the world of the politically possible and the world of the practically possible, accompanied by an assumption that political power could endure in the face of failing enforcement. Ironically, had Wheeler been a less masterful lobbyist, he would never

35 Okrent, Last Call.
36 Ibid.
37 Ibid.
been able to realize a law whose aspirations so outstripped reality.

The Prohibition Bureau, which most directly bore Wheeler’s mark, suffered greatly from corruption throughout the campaign. This was a direct result of Wheeler engineering graft into their institutional fabric – if the bureau could be parceled out for sale by the ASL, then it could be parceled and sold just as easily by ‘wet’ politicians and criminals. Several attempts at reform and professionalization over the course of the case could not exorcise the problem. Fortunately for the Coast Guard and the Customs Bureau, Wheeler spent his time and influence in other places; while the enforcement mission grew to occupy their time, the ‘dry empire’ left their institutional architecture largely unmolested.  

This difference in initial conditions yielded great divergence in results.

Interpreting Prohibition. We will cover the distance between this inauspicious beginning and the inconclusive conclusion to the Prohibition campaign in the next few chapters. In order to bookend the case, however, I present my interpretation of that conclusion up front. Lest I be accused of calling Prohibition a success (which I do not) I argue that the valence of the outcome depends on which group you ask. The 18th Amendment set into motion a complex chain of events that were not restored to the status quo ante bellum with the 21st Amendment and repeal. I parse this outcome into three different perspectives: that of the Anti-Saloon League, for whom it was a failure; the reformer allies of the movement and the average American, who saw a democratization and civilization of drinking at the cost of increased organized crime; and the Coast Guard, who eventually succeeded in putting down large-scale maritime smuggling of liquor and advanced the position of their organization.

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38 Harold Waters, *Smugglers of Spirits: Prohibition and the Coast Guard Patrol* (Flat Hammock Pr, 2007); Willoughby, *Rum War at Sea.*
I see this case on a backdrop of a middling reading for the overall Prohibition campaign – a complex, costly marginal achievement of stated goals. Though, that achievement may have been outweighed by those costs, and the same ends could have been purchased at a much lower cost with more reasonable expectations and better enforcement. For the Coast Guard, I take their objectives and their success in achieving them as *prima facie* valid – despite setbacks due to choices within and outside of their organization, the Coast Guard defeated major rum-running. A comparable form of large-scale smuggling did not reappear until the relatively recent battles with drug cartels.39

**A Note on Sources.** In exploring this case, we encounter a fundamental problem: it is difficult to judge a contest held in shadows. Beyond scarcity of information and standard historiographical problems, a certain slipperiness is inherent in any covert conflict. Both sides are struggling to make sense of the other while preventing the other from doing the same. When one side finds an effective measurement approach, they employ it in order to undo their opponent’s strategy, which causes their opponent to shift strategies.

This resembles the problem of metric-gaming in government regulation. Charles Goodhart, Professor Emeritus at the London School of Economics, asserts that when we tie incentives to metrics, people learn to game the system and the metric’s usefulness begins to decay.40 In other words, “when a measure becomes a target, it ceases to be a good measure.”41 Similarly, psychologist Donald Campbell argues, “the more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it

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will be to distort and corrupt the social processes it is intended to monitor. These are two sides of the same coin – as soon one finds an instrument to lock down their adversary, the adversary will try to break the lock.

The classic ‘collect or strike’ argument between operations and intelligence follows the same lines. If a source is unaware of a collections effort against it, then it will continue to produce information. If too much of this information is used operationally, then the source may realize that it has been compromised and alter its approach.

Therefore, no measurement strategy against a covert adaptive opponent can be both stable and operationally useful. Though the researcher might prefer the former, the actors in the case choose the latter, finding and burning metrics in order to gain advantage. Therefore, we follow in the steps of an intelligence officer – tapping analytical instruments until they are spent and then using them to find the next instrument.

Fortunately, we are following in the steps of an excellent intelligence officer - Captain Charles S. Root, founder of Coast Guard Intelligence. In his attempts to make sense of the ‘Rum Fleet,’ Root used a mix of quantitative and qualitative analysis. When these fell out of alignment, he would recalibrate his analytical strategy and was thereby able to keep pace with the evolving illicit trade. This case draws heavily on archival records of his work, and that of his successor, Lieutenant Commander Frank J. Gorman. The Intelligence Office offers unique

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43 Though, the use of the terms ‘enemy’ and ‘Rum Fleet’ indicates a theoretical commitment to seeing the Rum Runners as a coherent, agentic force. This is problematic, but understandable given the USCG’s recent experience in the First World War.
44 NARA, Washington DC, Records Group 26. Entry P66, Box 1-29; Entry 82(A), Boxes 767-767, 1097, 1100-1106, 1747-1751, 1769, 1795-1800; Entry 97, Boxes 4-5 and 9-12, Entry 106(B), Box 1; Entry 134, Boxes 1-8, 11, 14-15, 17-18, 22-28, 31-34, 37, 40-49, 52-55, 77, 106, 121, 148, 154-173, 189-198, 204; Entry 178 (1920-1933), Boxes 1-96; Entry 178 (1933-1941), Boxes 1-21, 41-46, 75-97, 103-109, 125-130, 135-139, 148, 154, 157-170; Entry 179, Boxes 1-8; Entry 249, Boxes 1-26.
insight into this case, as they served as the Coast Guard Commandant’s primary faculty for making sense of the complex Rum War. Through weekly status updates, these records narrate the evolution of the conflict with special attention paid to emerging technologies and tactics. These records were strictly confidential at the time\(^{45}\) and are remarkably candid in their assessment of the progress of the Coast Guard and other agencies.

Because of the unique nature of Prohibition-era rum-running, these records also provide a deep window into the nature of the illicit smuggling networks of the time. Liquor cargoes would depart for American shores from nearby ports – mostly Canadian or from Newfoundland, but some number from French holdings, Cuba, Mexico and Honduras. These vessels would either transfer the liquor at sea to short-range ‘contact boats’ off the American coast, or they would sneak the rum into American waters themselves. Either way, the vast majority of rum-runners cleared out of port with legal, or at least marginally legal, papers. The Coast Guard had access to these clearances through the State Department and the British Consul, and cryptanalytic and human intelligence efforts reinforced their access to up-to-date information on the rum fleet. While the Intelligence Office did not have the ability to resolve the exact location of ships until late in the campaign, they had high fidelity on what major ships were in the trade and in what general area at any given point in time.

A comprehensive history of Coast Guard captures from 1923 through 1935 provides a second quantitative data source. As a note of caution, interpreting trends from capture data is problematic – a spike or a drop may be due to changes in either enforcement or illicit volume. Nonetheless, this source is useful for confirming findings from Intelligence Reports. Used in concert, the two datasets indicate the effectiveness of enforcement. Additionally, since the

\(^{45}\) And remained so until their declassification in the 1970s and 1980s.
dataset includes the names of vessels, their nationality, their place of capture, and their captors, it provides a measure of the demographics of the trade and its suppression. The Intelligence dataset focuses almost entirely on larger ‘motherships,’ while the Captures dataset is largely composed of the smaller speedboats and motorboats. The pair complements each other well.

The archives also contain a great deal of qualitative data: correspondence, period newspaper clippings, tactics manuals, and personal notes. The Coast Guard corresponded extensively with the Prohibition Bureau, the Customs Bureau, the State Department, and the Royal Canadian Mounted Police. The Intelligence Office was the clearinghouse for all secret information in the service, as well as the authorized liaison with outside agencies. Since much of the Prohibition Bureau’s records were destroyed in 1955, this correspondence provides one of the best remaining sources for the internal dynamics of that bureau’s attempt to fight liquor.

Three major secondary sources inform this research. First is CDR Eric Ensign’s *Intelligence in the Rum War At Sea,* which draws from the same bank of archival records. Second, CDR Malcolm Willoughby’s *Rum War at Sea,* which is the primary published work on this campaign; written in the 1960s, this work includes information from interviews of veterans on all sides of the conflict. Finally, Daniel Okrent’s *Last Call: The Rise and Fall of Prohibition,* serves as my primary reference for the general context of the Prohibition era.

**HYPOTHESIS TESTING: INNOVATION, BUREAUCRACY & THE MODERN STATE.**

Having bookended the history surrounding the case, we return to our original theory. Testing the ‘Boxer’ dueling networks hypothesis is our primary objective in exploring the Rum War. As with the slave trade case, we do so by identifying signatures of the processes of contested sense-

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47 Ensign, *Intelligence in the Rum War at Sea, 1920-1933.*
making and the competitive adaptation.\footnote{This method is in direct contrast to reductionist approaches, which work well for well-behaved problems, but do not capture the complexity of wicked problems. In ‘War Is In The Error Term,’ Gartzke presents what is essentially a model of boundedness – by specifying a regression, we bound the area in which war is probable, and therefore can say where it is unlikely, but war itself remains a stochastic event inside the bounded container of the error term. This is helpful, provided an equation converges to a stable error term (or in the case of a game theoretic model, converges to a fully specified result.) However, certain complex systems have unstable error terms, and certain problems are fully within this stochastic space and therefore cannot be solved by these reductionist approaches. The closest parallel is to the world of physics – Newtonian classical dynamics specified macro level behavior well, with a well-behaved (but always extant) error term. However, inside of that error term, these dynamics had relatively far less predictive value. On the sub-atomic level, particles behave stochastically rather than deterministically, as described by quantum physics. Therefore, approaches that considered fractals and interpretations, which incorporated optionality and ambiguity, proved better suited to making sense of these spaces. My overall approach to this problem could be considered more akin to this latter camp. In effect, we are finding fractals – self-similar patterns within and between things – that speak to the characteristic dynamics of these systems, rather than attempting to establish a mechanistic linkage between two variables. The latter approach fails due to the meta-endogeneity of agency and innovation within this case – if I can figure out an effective instrument, the actors in the case could likely have figured it out as well, and would have employed it against their adversary, and hence it would have deteriorated as an instrument as their adversaries adapted. Therefore, the most profitable approach is to determine fundamental functions within the case that capture the shock-response behavior of this reciprocal adaptation. While I doubt I can make sense of a given deployment better than the members of the case, historical perspective and the ability to read both sides’ mail allows me to identify factors that accelerate or decelerate that contested sense-making process. Erik Gartzke, “War Is in the Error Term,” \textit{International Organization} 53, no. 03 (1999): 567–87, doi:10.1162/002081899550995.} Relative efficiency determines the ‘frame rate’ between initial action, competitive adaptation and subsequent action. Relative support determines the ‘endurance’ for iterating through this cycle. In combination, these create the organizational script, where the suppressor flattens themselves as much as possible given the resources available through support.

The slave trade case juxtaposes well with the Rum War in this organizational script. The Africa Squadron began the case with a small and ill-equipped force that became increasingly efficient over time. The abolitionist coalition endured throughout the case, their political force translated into increasing material support through the case, reaching a crescendo in Palmerston’s aggressive use of the British battle fleet against the Brazilians and Portuguese in the 1840s. The Rum War followed a reversed timeline – a massive injection of resources in 1924 provided the Coast Guard an overwhelming superiority in materiel for a window of a few years, but the decaying power of the prohibitionist coalition precluded any major recapitalization.
until 1934. In both cases, the suppressors attempted to flatten themselves in response to an adaptive adversary, though in the Slave Trade the battle was more to wrest the initiative from the illicit market, and in the Rum War, the fight was to hold onto that initiative as long as possible.

We posited in the operational script that a successful market suppression attempt follows three stages – disrupting the focal points of the grey market through effective patrolling, interdicting black market networks, and ultimately reshaping demand by shifting path dependencies. This sequence is common between the two cases, though due to the large amounts of resources available at the outset in this case, the grey market phase is concluded very quickly, while the rest of the case reaches a stalemate between fighting black markets and re-shaping demand. The combination of repeal and the long-awaited recapitalization concludes the case.

In testing our core theory, we will find the fractal ‘sawtooth’ shape of the measure-countermeasure cycle present at multiple levels in the Rum War, as we saw it in the Slave Trade. Whether by regions, by technologies, or by tactics, the illicit network innovates, the suppressor identifies and fields a counter to that innovation, and the illicit network innovates again to escape that counter. We saw in the British case that the illicit network is quicker on its feet, but the state is far more powerful when it can land a blow. This becomes all the more true in the age of bureaucracy – red tape slows innovation, but mass production and communication ‘locks out’ a threat technology or tactic once a counter is devised. The ‘ratchet’ strategy, innovation followed by institutionalization, remains an effective approach.

The increasingly bureaucratic context of this case allows us to explore strategies for achieving innovation despite these administrative hurdles. The Slave Trade case happened amidst the Industrial Revolution, but the triumph of that revolution had not yet been consolidated
throughout the Royal Navy. Since shipbuilding still retained artisanal elements, non-standard ships and organic modifications were not yet abnormal. Similarly, since officers were developed through mentorship and for judgment rather than through administrative processes for compliance, there remained a strong tradition of loose ‘mission command’ orders and low-level initiative.\footnote{U. S. Army, “FM 6-0 Mission Command: Command and Control of Army Forces,” 2003, http://devlibrary.outdoorhistory.com:8080/xmlui/handle/123456789/5972.}

Conversely, the Rum War is situated deep in the ascendance of high modern bureaucracy.\footnote{Somewhere between Weber’s enthusiastic assessment of the idea and our contemporary sour view of the term. Gordon Tullock and Charles Kershaw Rowley, \textit{Bureaucracy}, vol. 6 (Liberty Fund Inc., 2005); James Q Wilson, \textit{Bureaucracy: What Government Agencies Do and Why They Do It} (New York: Basic Books, 1989).} The First World War saw the mass accession and classification of large number of soldiers.\footnote{John Carson, “Army Alpha, Army Brass, and the Search for Army Intelligence,” \textit{Isis}, 1993, 278–309.} Similarly, mass production armed these soldiers and simplified logistics chains with interchangeable parts.\footnote{Ironically, the greatest mass production success of the US Military during this period was the Liberty Engine, which the rum-runners made excellent use as war surplus engines in their speed boats. “WWI Production,” \textit{National Museum of the Air Force} Website, accessed 29 May 2014.} The ability to achieve economies of scale through formalization proved crucial to success in the great wars of the industrial age.\footnote{Grinberg, Mikhail. “Defense Industrial Base: A Person Theory of Power: A Path to Achieving Political Objectives Independently,” May 27, 2014, https://medium.com/the-bridge/defense-industrial-base-a-personal-theory-of-power-5ff4f4c1f86d. Placing WWI as the frontier of industrial war is debatable – mass production of firearms and artillery in the 19th Century, industrial ship production in the same period, analog fire control on ships in the early 20th Century, machine guns and tanks in the First World War, or the overwhelming role of production in the Second World War are all contenders for this claim. It certainly is well in the heart of that revolution. For a history of cybernetic and industrial approaches to war, see David A. Mindell, \textit{Between Human and Machine: Feedback, Control, and Computing before Cybernetics} (The Johns Hopkins University Press, 2002); David A. Mindell, \textit{Iron Coffin: War, Technology, and Experience Aboard the USS Monitor} (JHU Press, 2012).} However, these capabilities came at a cost – they dealt well with commonality and complicated-but-reducible problems, but not as well with diversity and true complexity.\footnote{John H. Miller and Scott E. Page, \textit{Complex Adaptive Systems: An Introduction to Computational Models of Social Life} (Princeton University Press, 2007); Scott E Page, \textit{Diversity and Complexity} (Princeton, N.J.: Princeton University Press, 2011), http://site.ebrary.com/id/10481994.} As remains the case, these high modern systems find themselves thwarted by problems upon which they cannot impose commonality. The Rum War,
on many levels, was one of these.

The Coast Guard of the 1920s managed to keep up with an adaptive adversary while simultaneously holding the forces of bureaucracy at bay. Since this two-front fight may be familiar to the contemporary policy-maker, we will use this case to explore strategies for effectuating efficiency and support inside modern bureaucratic institutions. The demands of these institutions intervene between the Boxer model’s variables and their effects. Efficiency is shaped by human resources policies – the kinds of people who do well in unconventional conflict generally do not do well in formal one-size-fits-all force management systems.55 Similarly, the state’s need to name, formalize, and standardize platforms makes early-phase technology innovation difficult. Therefore, one must carve out space within the institution for these non-standard humans and hardware without neutering them through the tyranny of standardization. Therefore, we will use this case to further empirically support the core model, while understanding how bureaucracy affects efficiency and support through with a series of corollaries throughout the case.

We proceed in three chapters, covering the three phases of the organization script. Since the interpretation of Prohibition is ambiguous and hotly contested, we begin at the end of the operational script in the ‘demand restructuring’ phase. Building a general framework for the Coast Guard’s role in the general Prohibition campaign, we then complete the operation script with the ‘grey market’ and ‘black market’ phases.

In the first chapter, we consider the Rum War in the larger context of the Prohibition movement. Building three nested ‘black boxes,’ I argue that Prohibition changed the course of

American drinking in lasting ways, that supply suppression alone accounts for this change, and that the maritime Rum War was the sole bright spot of the suppression campaign. I make no assessment as to the value, wisdom, or efficiency of Prohibition as a whole – only that the Coast Guard was effective in reducing maritime smuggling, and therefore played a weighty role in changing American drinking patterns during the period.

Second, we explore the grey market phase of Coast Guard suppression. This begins with a statistical overview of the case and presents primary source research about the nature and the disposition of the Rum War. This section will trace the historical swath of the case – from initial success, through stalling reversals, and ultimately to the suppression of mass maritime smuggling. We will also trace diplomatic efforts, which intriguingly parallel patterns from the British Foreign Office from the previous case.

Third, we will examine organizational innovation and performance during the black market suppression phase from 1926 until 1935. In the course of competition over performance at sea, we find the service creating creative ways to accelerate the acquisitions system – we will explore this with network analysis of the Coast Guard’s organizational structure. Retuning back to the historical trajectory of the case, we see the service bringing force to bear against rumrunner networks in Florida and the Great Lakes from 1925 until 1930. From 1928 until around 1932, the rumrunners organized and gained the upper hand through clandestine coordination; from 1932 until 1936, the Coast Guard decisively ended the post-repeal trade by institutionalizing and reproducing effective technology and tactics. We conclude by evaluating the Boxer model against competing explanations in light of this case’s trajectory.
CHAPTER 8, DEMAND SHIFT: THE THREE BLACK BOXES.
PLACING THE RUM WAR IN THE CONTEXT OF PROHIBITION AND SUPPLY SUPPRESSION.

WORKING BIG-TO-SMALL: BLACK BOXING THE ‘NOBLE EXPERIMENT.’

Prohibition dominated American politics for more than a decade. During the same period, the United States experienced the Stock Market Crash and Women’s Suffrage. Presidents of very different stripes, from the arch-*laissez-faire* Coolidge to the ‘New Deal’ Roosevelt, changed the country in profound and conflicting ways. Simultaneously, the British Dominion of Canada charted an increasingly independent course under Prime Minister Mackenzie King. Relations between Cuba and Washington were volatile, and Mexico emerged from a tripartite civil war only to spiral into another war with itself, the La Cristiada. This was a complex time, to say the least.

In order to extract lessons from the Prohibition experiment, we need to deal with the complexity of this context. I propose a big-to-small approach: we begin with known long-term trends, and then progressively drill down to the role of maritime smuggling suppression in shaping those trends. As with any illicit, covert enterprise, there is much we do not know – and much that no player at the time on either side could have formally known.¹

As long as we can build ‘black boxes’ around Prohibition that adequately explain relevant inputs and outputs, we can control for these gaps. This working theory will serve a foundation for a summary statistical analysis of maritime smuggling suppression. In the first half of this chapter, we assess Prohibition’s impact on alcohol consumption and its immediate costs in blood and treasure. We then investigate the relationship between supply and demand over the course

¹ Judging from periodical accounts, Rum-runner intercepts, and Coast Guard records, the Bronfman’s syndicate likely had the best picture of rum-running by the end of the case, after it consolidated control of the market around 1930. Still, the interests of rum-runners were more in making money than in assessing the total quantity of rum flow. Clippings and intercepts from National Archives, Records Group 26.
of the campaign. Finally, we evaluate the disparate sources of illicit alcohol during the campaign in order to isolate the effect of the Coast Guard’s suppression campaign within supply-suppression efforts.

**The First Black Box: Prohibition-to-Alcohol.** We begin by positioning the Prohibition campaign within the arc of American drinking. Rather than attempting to explain Prohibition, our goal is a functional working theory – did it accomplish its posited ends and at what cost? Toward that theory, three key variables account for the broad relevant effects of the policy: *alcohol consumption, cost, and violence.*

**Alcohol Consumption.** Drinking decreased sharply at the outset of Prohibition, and stabilized at a level between that low and the pre-Prohibition level for the remainder of Prohibition. This diminished level of drinking remained stable after Repeal. On this, researchers agree. There is less agreement as to why.

For obvious reasons, there is no direct record of drinking levels during Prohibition. Fortunately, we benefit from an econometrics duel between two outstanding economists over the course of this case. Yale Professor Irving Fisher argued for the effectiveness of these policies using price effects and proxies. Dr. Clark Warburton, future chief economist of the FDIC, argued against them using the same means from the then-new Brookings Institution.² Both did their best to estimate these shadow levels of drinking.

Warburton used cirrhosis and known sources of supply as proxies for drinking levels.³ Revisiting this approach, a 1991 *American Economic Review* paper by Miron and Zweibel

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extended the dataset to additional variables through the 1900-1950 timeframe. In their words:

*Alcohol consumption fell sharply at the beginning of Prohibition, to approximately 30 percent of its pre-Prohibition level. During the next several years, however, alcohol consumption increased sharply, to about 60-70 percent of its pre-Prohibition level. The level of consumption remained virtually the same immediately after Prohibition as during the latter part of Prohibition, although consumption increased to approximately its pre-Prohibition level during the subsequent decade.*

According to a 1992 National Institute of Health survey of American drinking habits, a major spike in drinking between 1910 and 1915 preceded Prohibition. Drinking did not return to that level until the 1980s, and returned to post-World-War-I, pre-Prohibition levels by the 1990s.

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4 Alcohol-Related Arrests, pre-and post-case Alcohol Consumption, Alcoholic Psychosis. Miron and Zwiebel, *Alcohol Consumption During Prohibition.*

5 Ibid. 242.


7 Ibid.
The above graph depicts these consumption estimates. Restrictions on liquor during the First World War, spiked with anti-German (and hence anti-beer) sentiment, sparked an initial decline in drinking. The Prohibitionist movement carried this momentum forward with 600% increases in alcohol excise taxes and an increasing number of state bans. The Volstead Act

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8 This graph is a synthesis of Miron and Zweibel 1991 and Warburton 1930. I use these numbers, because they are conservative – Fisher 1928 estimates a steeper drop with no recovery into the mid-1920s, but this does not comport with qualitative sources. The truth is probably somewhere in between – in estimating Prohibition drinking, Burnham 1968 cites a conversation with alcohol scholar Jellinek, who held that the number was “substantively lower” than Warburton’s estimates. John C. Burnham, “New Perspectives on the Prohibition ‘Experiment’ of the 1920’s,” *Journal of Social History* 2, no. 1 (1968): 51–68.

9 Nadelmann (1990) argues that the First World War explains the drop in consumption, rather than increasing prohibitionary measures. Using British alcohol consumption as a very conservative control (the UK bore more of the weight of the First World War), we find an initial drop that very quickly returns to equilibrium levels. This is the red line on the graph below. [Continued]
enacted the 18th Amendment, placing a ban on all beverages more than 0.5% alcohol by volume and thereby beginning national Prohibition. Repeal is self-explanatory.

Putting these in present-day context, the pre-Prohibition spike compares to per capita drinking in the United Kingdom – though male binge drinking was far higher.10 The ‘dry’ high-water-mark approximates current drinking in Iran or Jordan, and is higher than estimates of drinking in Saudi Arabia, Yemen or Pakistan.11 The stable repeal level of drinking is similar to

While the Prohibitionary movement certainly latched onto the First World War, dismissing the decline as an effect of the war does not comport with the British control – immediately after the war, British drinking levels returned to their previous trends (Red line in above graph, British Beer and Wine Industry Statistics, echoed in NHS reports); United States levels did not. The above graph also includes Fisher’s estimates, which show a further decline, but I view these estimates as suspect and do not include them in the main paper. Ethan A. Nadelmann, “Nadelmann’s Response,” *Notre Dame J L Ethics & Pub. Pol’y* 5 (1990): 817.


present levels of drinking in India, and is slightly more than half of present-day United States levels.\textsuperscript{12}

Prices during this timeframe also tell the story of a social institution under stress, as seen in the graph below. Using Fisher and Warburton’s estimates, the price of rye whiskey increased between two-fold and five-fold.\textsuperscript{13} This roughly agrees with Miron and Zweibel’s finding of a three-fold increase in price.\textsuperscript{14} A survey of periodicals from the period also tracks with this interpretation. Liquor prices were never particularly clandestine during prohibition; in New

\textsuperscript{12}Ibid.

\textsuperscript{13}Warburton’s estimate is the lower of the two. Irving Fisher, \textit{Prohibition at Its Worst.}, Second Printing edition (Alcohol information committee, n.d.); Warburton, \textit{The Economic Results of Prohibition.}

\textsuperscript{14}Miron resiles from this finding in later works, which increasingly tend more libertarian over time. In a 1999 paper, he offers alternative explanations for the cirrhosis trend. In later works on drug policy, he argues that prohibition may have increased consumption and certainly increased overall levels of harm. I do not find the 1999 paper compelling, as he uses the pre-Prohibition drop to discount the causal effect of national Prohibition without adequately explaining the causal mechanisms behind that drop. I argue these mechanisms are endogenous to the political processes that produced Prohibition – the devastating ‘sin tax’ in the run-up to National Prohibition constituted a 581\% increase in tax levels, effectively one-half of the previous price of liquor. While presumably producers and consumers would share this tax burden, this dramatically increased taxation constituted a form of ‘soft prohibition.’ Additionally, the Reed Amendment of 1917 and the less-effective Webb-Kenyon Act of 1913 strengthened state Prohibition measures. Therefore, a regression discontinuity design should consider a date of 1917 rather than 1920 as an onset of National Prohibition measures.

Following Repeal, the government still wanted to constrain the liquor market, but also wanted to undercut bootleggers, so they set a $2/gal tax. This would seem to indicate that retaining the pre-Prohibition draconian rates would keep bootlegging strong, which would imply that such levels are effectively prohibitionary, as the illicit market becomes the primary provided. Additionally, since a bootleg network effect response to the initial Prohibition shock took time to materialize – showing up most notably by way of Bill McCoy around 1922 – this ‘soft prohibition’ should be considered the vanguard of legislative national prohibitionary action. Second, since Miron focuses strongly on the cirrhosis link, he neglects Warburton’s work on modeling liquor sources. From British and United States archival sources, we can piece together very broad strokes of liquor smuggling into the United States, as well as semi-licit sacramental wine and a sense of increases in industrial alcohol. While all of these are sensitive to modeling assumptions, they broadly correlate with the curve provided by the orthodox account. Moreover, period qualitative sources seem to fit far better to the orthodox Warburton/Fisher account. (The idea that these two combatants could agree on a topic concerning liquor is remarkable in and of itself.) Bootleggers, enforcers and newspapers from the period act as if the level of alcohol smuggling stabilized ‘somewhere in between’ the pre-Prohibition high and the initial shock low.


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York, prices by brand were published openly in newspapers. Still, all of these estimates remain very rough - even in a licit market, the prices for liquor tend to be ‘chunky,’ varying greatly by brand and region. Given the volatility induced by suppression, a proper index composed of a ‘basket’ of liquors over time was prohibitively difficult, but what reflections we do have support the account of shock, decline and gradual partial recovery.

![Price for Gallon of Liquor](image)

For the same reasons, an adequate elasticity estimate would be difficult to obtain.

However, Warburton notes that the average household’s budget for alcohol remains relatively constant through this period, even as price shifted. This is roughly consistent with periodical prices during the period, both before and after the case. Intriguingly, the latter period

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15 Compilation in Record Group 26, NARA, Washington DC.
incorporates higher excise taxes, which raises the price and reduces quantity, while keeping cost of consumption relatively static. Additionally, the price elasticity of demand for alcohol of the suppression period falls roughly in the same range as that of contemporary liquor.\(^\text{19}\) I claim only plausibility for these findings, as additional research would be required to build an alcohol index for the period before and after Prohibition.

These aggregate numbers should also be interpreted in their social context – pre-Prohibition drinking was highly gendered, as were the saloons where that drinking took place. During this period, males accounted for 80% of alcoholics.\(^\text{20}\) Multiplying the pre-prohibition spike in drinking with a multiplier to correct for this imbalance, we find a drinking rate amongst males in the modern Russian range.\(^\text{21}\) Excesses drove social objections to drinking, so this concentration amplified these objections. Over the course of Prohibition, drinking was democratized by way of the speakeasy and the popularization of social drinking at home.\(^\text{22}\) A co-ed culture of jazz and dancing competed with sodden drinking songs in the public imagination during the period; the general recollection of the speakeasy rather than the saloon as the archetype of Prohibition-era drinking speaks to that point.

We also find concentration effects in the forms of drinking. Binge beer drinking in saloons provided the primary source of alcohol consumption during the decade prior to Prohibition.\(^\text{23}\)


\(^{20}\) Murdock, *Domesticating Drink*.

\(^{21}\) 2.6 gallons per person per year, multiplied by 1.8 to reflect disproportionately male drinking. Russian Level ~12 liter per person per year. Russian drinking not corrected for male concentration effects, so this may understate the level of Russian problem drinking. Organization and others, *Global Status Report on Alcohol and Health-2014*.


\(^{23}\) Okrent, *Last Call*. 
The second major source was whiskey, generally taken straight. A wine and high-end cocktail culture existed for the elite, but this ‘good’ drinking was strongly stratified along class divisions. The drinking culture of the speakeasies democratized cocktails; while over-strong flavors masked bad booze and lowered the quality of these drinks, the cocktail went viral and competed with the straight-up shot across class lines.

Wine drinking achieved a similar end through a very different path – a loophole in the Volstead Act allowed home-brewing of fruit juices. Accordingly, America developed a taste for wine, namely the hardy and sugary Alicante Bouschet varietal. This proto-Franzia was received similarly to the democratized cocktail; the previous claret drinkers looking down their noses at the decline in quality in the industry, and the new wine constituencies enjoying the novelty, the taste, and mostly the ethanol of the drink.

In a perfected version of this enterprise, grape growers sold bricks of grape must and concentrated juice with the instructions, “Warning: do not store a full bottle of this product in a cool, dark place for 60 to 80 days or it will ferment and become alcohol.” A federal judge took objection to the practice in 1931, but California Fruit Industries had the excellent sense to retain

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25 Murdock, *Domesticating Drink*; Okrent, *Last Call*.
26 Murdock, *Domesticating Drink*; Okrent, *Last Call*.
27 This was intended as a concession for the hard-cider-drinking agricultural constituency in the Prohibition movement. It also was applied to grapes, and wine concentrate, and marginally to malt syrup (which became beer.) Okrent, *Last Call*.
28 Homemade wine also led to an interesting conversation between Italian-Americans and ‘white’ Americans (using a working definition at the time of the majority group, which marginally included Irish Americans, probably excluded Jewish Americans, and definitely did not include Southern Italian Americans.) Since Southern Italy had a long tradition of homemade wine making, Americans of Italian origin made some of the best wine of Prohibition. Just as liquor was not ‘sold’ in a ‘Blind Pig’ speakeasy – nominally people were paying to see the ‘Blind Pig,’ and liquor was served freely out of courtesy while they were there – one might be ‘invited’ to dinner with an Italian friend, ‘cover’ the cost of the meal, and enjoy some red in the process. This was, for most intents and purposes, legal. There is an argument that the American taste for spaghetti, and the classic red-and-white-striped tablecloth of Italian restaurants came from this interaction, rather than from the Second World War. Ibid.
29 Okrent, *Last Call*. Various.
an excellent lawyer in their defense – Mabel Walker Willebrandt, former Assistant Attorney
General for Prohibition.\textsuperscript{30} Ironically, she may have done more to tame American drinking in her
defense of wine than in her attacks on liquor. Wine greatly increased market share during this
period, and has been growing ever since.\textsuperscript{31}

According to Dartmouth Professor Herman Feldman’s 1930 work, \textit{Prohibition: Its Economic
and Industrial Effects}:

\textit{It will be stated that many people do not buy from bootleggers, but make liquor for
themselves. This is true... facts of grape production that would strongly indicate a
widespread making of wine at home... The circumstances under which alcoholic
beverages are consumed today are vastly different from an economic standpoint than
those of the days of the open saloon. Were we, in this series of articles, dealing with the
moral effects, we might stop to share in some of the concern which is felt in some
quarters as to the prevalence of drinking in the home. But looking at this from a coldly
economic standpoint, one cannot avoid the conclusion that this is the cheapest way!}\textsuperscript{32}

The adoption of home refrigeration in the 1930s moved beer from the binges of the saloons
into the relative relaxation of homes, which further disrupted these concentration effects.
Contrary to the concerns of Professor Feldman, home drinking tended to be more benign than
saloon drinking. In both gender and form, drinking was “domesticated” and democratized over
the course of Prohibition.\textsuperscript{33} Drink was a social institution under stress during this period, and it
found ways to relieve some of that stress by re-inventing itself into less objectionable forms.

http://content.time.com/time/magazine/article/0,9171,742596,00.html.
\textsuperscript{31} LaVallee and Yi, “Surveillance Report# 95.”
\textsuperscript{32} Feldman, \textit{Prohibition}. 128. Emphasis in original.
\textsuperscript{33} Murdock, \textit{Domesticating Drink}.
Contemporary American drinking practices owe their origins more to Prohibition-era social and culinary innovations than to the traditional saloons.

**Costs.** The primary financial cost of Prohibition was lost taxation. The United States government forewent the long-standing federal excise taxes on alcohol during national Prohibition. Comparing the residual liquor taxes collected during this period with the average collections for two years before and two years after Prohibition, this amounts to roughly $425 million dollars lost per year.\(^4\) These costs were dampened by a shift in Federal funding streams away from alcohol and toward an income tax immediately prior to Prohibition, as depicted in the graphs below.\(^5\)


\(^5\) As late as 1915, one third of federal revenue came from the alcohol excise tax. Okrent, *Last Call*; Statistics et al., *Statistical Abstract of the United States*. 

![Graph of US Federal Revenue, Total (Constant 1939 Dollars)](image-url)
These costs are amplified, however, by the fact that these otherwise-taxed alcohol rents were going into the coffers of alternate providers of security and contract enforcement. In other words, would-be tax money went to organized crime during Prohibition. This created negative externalities: violence by way of wars between these shadow-states and general law-breaking increased enforcement costs, which we will address shortly.

Liquor taxes during this period are a story in and of themselves. Prior to this period, the Federal tax rate on liquor had long been stable at $1.10 per gallon of liquor. Immediately prior to Prohibition, the rate increased to a punitive $3.20/gal in 1917 and then to a draconian $6.40/gal in 1919. For context, liquor prices hovered in the twelve-dollar price range per gallon prior to these ‘sin taxes.’ These tax rates equate to $87.70 per gallon at 2014 prices, or about

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$14 federal tax per bottle – 550% higher than present day tax rates. Following Prohibition, the rate was set at $2.00/gal, which remained stable until the Second World War. Adjusting for inflation, excise tax rates remained at these levels or higher until around 1980. Despite declining consumption, the Federal government made more in alcohol excise taxes after Prohibition than before.

Quite intentionally, Prohibition created major capital losses in the liquor industry. In 1914, 1.8 billion dollars of American private capital was tied up in liquor. By 1929, this number was reduced to 747 million dollars. By 1937, the industry partially recovered to $1.56 billion in capital holdings. Finally, the reduction in alcohol consumption cost some amount of utility in foregone drinking while reducing some other amount of negative externalities from the same. Any assessment of the balance between the negative externalities of excessive drink and the lost utility of drinking begs the question, as the ‘drys’ and the ‘wets’ would weight each very differently.

A common aphorism about warfare asserts that ‘amateurs think tactics, but professionals think logistics.’ I offer a corollary for illicit market suppression: ‘emotion is tinder and ideology is kindling, but budgets are fuel.’ Most recollections of the Prohibition saga understandably focus on the social meanings surrounding drink, but the entire story played out on a financial backdrop which dramatically influenced its players, its beginning, and its end. The Income Tax inaugurated the era, and the Great Depression brought it to an end.

38 This equates $35/gallon tax at current rates. This measure spiked in 1951 at $90/Gallon equivalent. Ripy, “Federal Excise Taxes on Alcoholic Beverages”; Index, “US Department of Labor.”
Enforcement Costs. The direct costs for enforcement were quite low - probably far too low, in terms of practical policy terms, as the price for poorly funded enforcement was paid in negative externalities. At the peak of the Prohibition bureau, there were barely over 2,000 officers in its employ. Costs for the bureau grew from $2M per year at the beginning of Prohibition until $15M per year at the end of the case. According to Warburton’s numbers, the Coast Guard spent no money on enforcement until 1925, and averaged around $14M per year thereafter. The Coast Guard of this period had upwards of 300 commissioned officers, twice-and-a-half that number of warrant officers, and around seven thousand enlisted men. The Customs Bureau was responsible for land borders and ports, and similarly entered the campaign in earnest around 1925. Their budget increased from approximately $10 to $22 million a year, and their manning increased approximately 45% from a baseline of around seven thousand officers.

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Nearly 90% of the cost from Prohibition was foregone revenue, but as previously noted, this cost drawn out of the vast increase in revenue from the income tax \(^{45}\) – this may be better understood as a shift from a regressive to a progressive income tax structure. In order to assess enforcement costs, I sum the total of Prohibition Bureau costs, along with the post-1924 increases in the Customs Bureau and the Coast Guard. These direct enforcement costs constituted a small fraction of the overall costs of Prohibition, a tiny fraction of the overall federal budget, and an infinitesimal fraction of American gross domestic product of the period.

### Prohibition Enforcement Cost (Warburton, Statistical Abstract of US)

<table>
<thead>
<tr>
<th></th>
<th>Nominal Cost, 1920-1933(^{44})</th>
<th>Inflation Adjusted Cost (2014)</th>
<th>Percent of Total Cost</th>
<th>Percent of Budget</th>
<th>Percent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost Estimate</td>
<td>$6,775,135,675</td>
<td>$89,068,665,479</td>
<td>100.0%</td>
<td>13.1%</td>
<td>0.61%</td>
</tr>
<tr>
<td>- Lost Tax Revenue</td>
<td>$5,950,129,500</td>
<td>$78,303,704,220</td>
<td>87.9%</td>
<td>11.5%</td>
<td>0.54%</td>
</tr>
<tr>
<td>- Enforcement Cost</td>
<td>$818,006,175</td>
<td>$10,764,961,259</td>
<td>12.1%</td>
<td>1.6%</td>
<td>0.07%</td>
</tr>
<tr>
<td>-- Direct Enforcement</td>
<td>$391,489,802</td>
<td>$5,152,005,794</td>
<td>5.8%</td>
<td>0.8%</td>
<td>0.04%</td>
</tr>
<tr>
<td>-- Indirect Loss, Seize</td>
<td>$426,516,373</td>
<td>$5,612,955,465</td>
<td>6.3%</td>
<td>0.8%</td>
<td>0.04%</td>
</tr>
</tbody>
</table>


\(^{45}\) Ibid.
Including Warburton’s indirect costs, seizures and fines, the 14-year total cost of Prohibition enforcement amounted to 2.6% of the American bill for World War One.\textsuperscript{46}

The greatest cost of Prohibition was the diversion of alcohol rents and revenue into illicit networks, which could have been reduced with proper enforcement expenditures. In effect, Wheeler bought Prohibition on a political interest-only Adjustable Rate Mortgage – the monthly payments were low, but it turned into a messy foreclosure when it became apparent that the social capital wasn’t there to pay for law enforcement.

\textbf{Death and Violence.} As previously noted, that mess arrived in the form of general law-breaking and violence. As to the first count, the cost of minor law-breaking depends greatly on one’s vision of law and order. According to Wilson’s “Broken Windows” theory, routine law-breaking invites greater crimes, and Prohibition made a huge fraction of the country into law-breakers; conversely, overall reduction of socially objectionable forms of drinking would presumably have a countervailing effect. I make no attempt to assess which of these corrosive forces created more harms; this was a fierce debate between the denizens of that time, and they understood their own context better than we could.

Homicide is painted in starker and more objective terms, and hence serves as a better proxy for us to understand the social cost of these policies. Scholars agree that murders increased during Prohibition. They do not agree as to why. Three views predominate: first, the conventional wisdom, Harvard’s Miron and Princeton’s Nadelmann\textsuperscript{47} assign the increase in violence to state action. On the opposite side of the spectrum, law enforcement scholars Philip

\textsuperscript{46} These expenditures, as percentages of the national budget, roughly equate to the British spending levels during the peak of their suppression of the slave trade. However, the total British cost was ultimately proportionally higher due to the sixty-year span of the campaign.

Cook and Mark Moore argue that increasing violence during this period can be attributed to urbanization, immigration and sundry secular process. This debate follows classic econometric lines – one side arguing for an experimental effect, the other side arguing for the null, and both flinging controls at each other in order to move the other’s model in or out of significance.

Splitting this debate, professors Emily Owens and Brendan Livingston propose that Prohibition generated two countervailing forces – since binge alcohol consumption is linked to unstructured violence, Prohibition reduced this form of crime. However, since Prohibition also diverted massive amounts of funds into organized crime, it generated structured violence in the form of gang wars. Owens demonstrates this tension with a demographic shift in homicides toward young adults and away from children and older adults, accompanied by a shift in homicides away from majority groups and toward ethnic minorities. Livingston uses a cross-sectional study of American cities to explore these conflicting forces, finding murders decrease only if there was a 33% or more decrease in intoxication arrests in a given area. I use this view as a working theory, but if the more optimistic or pessimistic extremes were true, it would not dramatically alter our findings.

The most significant avenue for public physical harm was far less direct – alcohol poisoning. Without regulation of alcohol production, consistent branding, or long-term reputational costs for producing bad product, drinking involved far more risk during Prohibition than before or after.

48 Professors at Duke and Harvard Kennedy respectively.
49 This parallels the Boxer model’s sense of the nature of the grey-to-black market shift.
52 Thornton and Bandow, The Economics of Prohibition; Fisher, Prohibition at Its Worst; Warburton, The Economic Results of Prohibition.
Re-natured industrial alcohol was liable to contain toxic residual denaturants, moonshine could contain blinding methanol, and even ‘imported’ liquor might be cut with creosote or worse. Prohibition Commissioner Roy A. Haynes and his patron Wheeler considered these risks a consequence of law-breaking and did little to remedy them. This approach hit a sour note over the issue of toxic denaturants, and cost the pro-prohibition forces public support. While the harms due to this form of self-violence (or state-negligent violence, if you prefer) are difficult to account for, they seem likely to exceed those inflicted by the illegal violence of criminals or the legal violence of the courts.

**Summary of the Prohibition Black Box.** Prohibition both reduced alcohol consumption and “domesticated” drinking. While there was an obvious loss in aggregate enjoyment from reduced drinking, the experiment democratized ‘good’ forms of drinking through unintended emergent processes. While Wheeler’s Anti-Saloon League would not have considered this a victory, it met the social demand for change. The financial price for this change was the income tax and nearly a billion dollars in enforcement. The social price was higher – certainly an increase in general contempt for the law and self-inflicted poisonings from bad booze, almost certainly an increase in organized crime, and possibly a general increase in homicides.

I do not attempt to weigh these benefits or harms. This normative space is well staked out by Mark Thornton’s (Cato Institute) well-named essay, “Alcohol Prohibition was a Failure,” and Mark Moore’s (Harvard Kennedy School) opposing and equally pithy op-ed, “Actually, Prohibition was a Success.” To my thinking, these questions involve the fundamental

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54 Murdock, *Domesticating Drink*.
analytical problems of incommensurability and time inconsistency. Who America was and what drinking was changed over the course of the Prohibition experiment, and repeal was not a time machine that returned the United States to 1920. Judging Prohibition by the unrealistic goals held by the Anti-Saloon League at its outset is rather like judging one’s success in life by what they wanted to do as a twelve-year-old. Rather than coding Prohibition as a success or a failure, I consider it a costly reduction in alcohol consumption with underfunded enforcement.

The Second Black Box: Alcohol-to-Supply. Having established that Prohibition reduced American alcohol consumption, we now need to connect that reduction to the Rum War by way of supply-suppression efforts. Accordingly, we a second nested black box around supply. As in the previous case, there are four major pathways by which a suppression effort can alter demand for an illicit good: normative change, economic shifts, indirect physical deterrence, and direct physical attack. As opposed to the previous case, the coalition behind Prohibition focused near-exclusively on the bludgeon of force. While anti-liquor activism in the larger populace generated support for the larger Prohibition campaign, these shifts had little to no persuasive effect across the liquor aisle, as it were. Therefore, demand shifts resulting from Prohibition must be ascribed to enforcement, such as it was.

Normative change. The temperance movement, like their abolitionist forebears, pursued education and moral suasion throughout the 19th century. The rise of Wheeler’s Anti-Saloon League was more change than continuity – frustration with a perceived lack of progress led the

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56 Perhaps the same ends could have been achieved at less cost by a ‘sin tax’ regime, as was the case in some Canadian provinces during this period, but this too would have required an involved enforcement regime. Perhaps Americans prefer doing things to extremes. In our previous case, the British and American approaches to extricating their nation from an addiction to slavery seem to support this idea.

57 The tension between moral suasion and legislation also exists in the modern alcohol control movement – Alcoholics Anonymous stressing personal conversion, and Mothers Against Drunk Driving looking more to legal remedies.
anti-alcohol movement in a more radical and more litigious direction.\textsuperscript{58} Wheeler’s main rival, Ernest Cherrington, was of the education and persuasion camp. After Wheeler’s passing, Cherrington’s defeat by the even more militant Bishop cemented the campaign’s choice of fist over head or heart.\textsuperscript{59}

The one caveat to this neglect of normative approaches was the use of the law. The norm of law-abiding had some effect – Willebrandt and a few other drinkers went dry when they were given enforcement duties in order to set a good example.\textsuperscript{60} In general, the law proved a weak reed, and using it as a bludgeon damaged the law far more than it did John Barleycorn.\textsuperscript{61} This was especially true given the political wrangling and open hypocrisy involved in getting the liquor laws in the first place. In Willebrandt’s words, “people will not convict if the punishment does not fits the crime,”\textsuperscript{62} and effective nullification through non-enforcement became common.

If there was a normative effect, it was one not intended by the Prohibitionists. The norms surrounding the practice of drinking changed as the stress of Prohibition generated innovation in alcohol. As previously noted, the new forms that grew out of the speakeasy and the cocktail party out-competed the old forms of the saloon. These endured, and I ascribe long-term changes in drinking patterns to these shifts in preferences and expectations.\textsuperscript{63} As to the durability of these forms, one might imagine a counter-factual version of the Great Depression where the saloon rather than the cinema provided the primary escape from unpleasant realities. Remarkably, drinking rates stayed stable during this demanding period, 40% below pre-World-War-One

\begin{itemize}
  \item \textsuperscript{58} Okrent, \textit{Last Call}.
  \item \textsuperscript{59} Ibid. For a biography of Wheeler which was intended to favor a Cherrington succession, see Justin Steuart, \textit{Wayne Wheeler, Dry Boss: An Uncensored Biography of Wayne B. Wheeler} (Westport, Conn: Greenwood Press Reprint, 1971).
  \item \textsuperscript{60} Okrent, \textit{Last Call}.
  \item \textsuperscript{61} John Barleycorn was populist Prohibitionist preacher Billy Sunday’s preferred name for liquor.
  \item \textsuperscript{62} Okrent, \textit{Last Call}. 265.
  \item \textsuperscript{63} Murdock, \textit{Domesticating Drink}.
\end{itemize}
Economic. There was little serious vision of a replacement good proposed by the Prohibitionists to fill the entertainment vacuum left by alcohol during the ban.\(^{65}\) While Prohibitionists generally hoped that people would fill their time with church and labor, an understanding of the tastes of the average citizen evaded a group suited to winning by leveraging the extremes. However, the experiment did build constituencies tangentially and unintentionally.

The most toxic of these constituencies was organized crime. Near the end of Prohibition, bootleggers helped to keep dry laws on the books, as those laws maintained their corner on the liquor market. Notable as it was, this strange alliance of “Bootleggers and Baptists”\(^ {66}\) was inadequate to maintain the laws, and was certainly ineffectual in changing the market for liquor. Some of these groups re-invented themselves after repeal as licit providers of liquor;\(^ {67}\) some shifted to other illicit enterprises such as narcotics or people smuggling.\(^ {68}\)

Enforcement services grew during this period, which allowed enforcement of later high liquor taxes. If government bureaucracy is a constituency, then it is one that prospered through Prohibition. These reduced later alcohol consumption through enforcement of the excise laws.

The non-alcoholic beverage industry gained ground by way of Prohibition, as caffeine grew at the expense of ethanol in drinking tastes. The plethora of soft drinks and fruit juices and available at any gas station would be surprising to early 20\(^{th}\) century Americans, for whom non-alcoholic beverages other than water, tea or milk were something a novelty. A 1926 survey of

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\(^{65}\) Okrent, *Last Call*. Particularly telling is ‘dry’ confusion about the un-popularity of ‘near beer,’ since it had the same taste as beer.


\(^{67}\) Okrent, *Last Call*. “Spirit of Responsibility,” *Seagrams* pamphlet with period advertising, no date noted.

\(^{68}\) Memos concerning disposition of remaining rum-runners, esp circa 1935, RG 26, NARA.
the dairy industry ascribes ‘a 27% increase in milk consumption between 1918 and 1924’ to prohibition, and factory owners reported workers substituting milk for beer in their daily workplace drinking.\(^6^9\) The fruit juice, soft drink and confectionary industries enjoyed similar effects.

Not all substitute substances are so benign, and a common argument made against prohibition in the early 1920s was that the ban might push people toward harder drugs. While an effective rhetorical strategy, it lacks empirical support.\(^7^0\) Opiate consumption dropped by more than 50% between 1910-1919 and 1920-1923.\(^7^1\) From period sources, narcotics enforcement garnered the public support that was lacking from the alcohol ban, and drugs became relatively much harder to acquire during this period – according to a 1924 account from an official of the Public Health Service, “addicts now often go from opiates to drink.” Since this occurred during the nadir of alcohol consumption, it seems safe to assume that prohibition did not increase drug consumption.

The most significant new constituency was one that Wheeler would have found profoundly objectionable. The flavor of the alcohol industry changed over the course of the campaign, in the form of different marketing strategies and shifting industry structure. The American wine industry grew in market share over the course of Prohibition; social sipping needed little rebranding to fit into the new model of ‘domesticated’ drinking. Beer downplayed its German-

\(^6^9\) Feldman, *Prohibition*. 77

\(^7^0\) Given the high-fidelity of Coast Guard reporting on smuggling during this time period, this sort of volume would almost certainly have registered in their reporting. Even increasing the amount of narcotic smuggling they identified during this timeframe by an order of magnitude yields an insignificant volume – under ten thousand pounds. Captures Database, RG 26.

\(^7^1\) Fisher, *Prohibition at Its Worst*, 106. Opiates never had the public sympathies that liquor aroused, and even amongst early rum-runners, narcotics were seen as far worse than alcohol.
ness and Prohibition-proofed itself as “America’s beverage of moderation” a decade later.\textsuperscript{72}

Liquor experienced the most dramatic reinvention of the repeal settlement.\textsuperscript{73} Canadian liquor grew at the expense of American liquor\textsuperscript{74} – most notably Seagram’s, owned by the Bronfman rum-running kingpins, whose products led the post-repeal American whiskey market.\textsuperscript{75} Since Seagram’s held large stocks of higher quality, aged scotch, ads that presented whiskey as an expensive, luxury good clearly served their interests – the fine print of the ad campaign was “drink moderately…drink better whiskey.”\textsuperscript{76} Presenting cheap whiskey, the kind that resurgent domestic American producers might have produced, as socially and even morally lamentable served these ends well.\textsuperscript{77}

Whiskey producers acting in their economic self-interest is not surprising. It is fascinating, nonetheless, that the most successful rum-running magnate successfully co-opted talking points from the Women’s Christian Temperance Union to crowd cheaper competitors out of the liquor market. In concert with excise taxes that were levied by gallon rather than by cost, the market skewed toward smaller quantities of higher quality liquor. Shifting preferences toward quality, reinforced by advertising campaigns and the cooptation of the ‘moderation’ narrative by the surviving liquor powers, explain the reduction in post-Prohibition drinking levels. These complex results emerged from the Prohibition suppression campaign in unexpected ways.

\textit{Direct and Indirect Suppression.} Despite deplorable execution, the near-sole focus of the


\textsuperscript{73} The increasing role of tequila in American drinking, and especially the taste for the Cuban mojito, might also be ascribed to drinking innovations during the period. The Mexican border was a source for mezcal, and Havana served as a drinking resort during the period. Okrent, \textit{Last Call}. Weekly Reports, CS Root, RG 26, NARA.

\textsuperscript{74} “Spirit of Responsibility,” Seagrams.


\textsuperscript{76} Ibid.

\textsuperscript{77} Ibid.
Prohibitionists was the application of legal and physical force against the suppliers of alcohol. This took the form of increasingly draconian measures. Amongst these were padlock and seizure laws, which shuttered establishments found selling liquor for up to one year,78 and local ordinances that mandated life imprisonment for repeat offenders.79 The unflinching infliction of pain, coupled with ham-fisted implementation and extreme corruption, cost the Prohibitionist coalition public support.

Still, despite all of these problems, this was the only approach that was seriously attempted by the Prohibitionists, and therefore where we must look in order to explain the changes that resulted from the campaign. Norms provided support for the regime, but they were not a mechanism employed by the regime in a realistic way to change the illicit market. Wheeler’s tack was force alone. Nonetheless, emergent normative and economic shifts grew out of the pressure that was brought to bear through the use of force. While costly, clumsy and often counter-productive, this pressure was also causal. Therefore, as a working theory for this consumption-to-supply black box, we find that supply-side force was the primary independent mechanism that shifted alcohol demand during Prohibition.

The Third Black Box: Supply-to-Rum-War. Lastly, we must connect this supply-side pressure to the role of the Coast Guard during the campaign. We do so by tracing drink along the various known pathways between production and consumption. Unsurprisingly, records describing these diverse sources of drink are fragmentary at best. As before, we will do the best with what we have, approach the problem from a number of different angles, and see what hypotheses best explain what we know.

We are ultimately evaluating how the efforts of the Coast Guard in stymieing maritime smuggling compare to efforts in attacking other sources of liquor flow. The Wickersham Commission, appointed by Herbert Hoover in 1929 to study Prohibition, identified five major sources of liquor. These are 1) illicit importation by land and sea, 2) industrial alcohol, 3) illicit distilling (moonshining), 4) production of beer and wine in the home (which was at least marginally legal), and 5) diversion of medical and sacramental alcohol (which was also marginally legal).80

I judge the Coast Guard intervention a success if importation by sea decreased in lasting ways following their effective entry into the struggle, in absolute terms and relative to these other sources of alcohol. This approach involves a negative counter-factual problem, as it is difficult to assess how much liquor would have been imported by sea in the absence of Coast Guard action. The specific historical context makes this approach viable, though – Bill McCoy’s Rum Row demonstrates a strong preference for liquor shipped from abroad. This is due to an expectation of higher quality liquor, with access to aged stocks in Scotland and Canada.81

Sea also provides the advantage of direct access to profitable East Coast ports, as well as the ability to move mass quantities relatively cheaply. The extensive coordination and bribery costs involved in shipping liquor from Detroit speak to the advantages of international waters in the absence of harassment. Therefore, this relative assessment is conservative - given a demonstrated preference for seaborne liquor, if bootleggers are forced to rely on alcohol arriving via other means, then something is going right for the Coast Guard.

81 Willoughby, Rum War at Sea; Okrent, Last Call.
Smuggling. For background, the above chart surveys pathways of alcohol flow during Prohibition. The most obvious and familiar liquor flow is smuggling. Prior to 1924, the Prohibition Bureau was responsible for suppressing all liquor smuggling flows; after their failure, the Coast Guard took responsibility for the majority of sea smuggling and the Customs did likewise for most land border routes. Once ashore, the Prohibition Bureau was once again responsible. By mid-campaign, the Coast Guard was assisted by the diminutive Division of Foreign Control, who liaised with British consuls, conducted open consular collections, and occasionally ran human intelligence assets in liquor ports. While nominally owned by the Prohibition Bureau, it is unclear who had functional operational control of the division – the State Department provided access and infrastructure for the division’s operations, the Coast Guard provided it tasking, and the division had relatively few equities with its domestically-focused parent bureau.

Liquor would then be moved from the point of illicit entry to the point of consumption through domestic illicit transport, which typically involved extensive networks of bribes with local law enforcement. This illicit liquor would then be served in nightclubs, cabarets, and speakeasies. It would also be sold ad hoc by “cigar stores, barbers, tailors… grocers” and others. Once liquor was well inside the borders, it became the responsibility of the Prohibition

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83 Division of responsibility, discussions in 1924, 1927 (Lincoln Andrews), 1934 (Morgenthau.) Memos, RG 26, NARA.
84 Memos, esp Root to Anslinger, RG 26, NARA.
85 Discussions between Prohibition, DoS, USCG, Treasury, Memos, RG 26, NARA.
86 Okrent, Last Call; Petkus Jr and others, “Value-Chain Analysis Of Prohibition In The United States, 1920-1933.”
Bureau, who focused their efforts on the retail end of the enterprise.\textsuperscript{88}

The vast majority of smuggled liquor came from the British Commonwealth. Canada was first amongst these, dramatically increasing domestic production during this period as well as re-exporting whiskey from the United Kingdom.\textsuperscript{89} This liquor might be trafficked directly, or laundered through the Caribbean, the French islands of St. Pierre and Miquelon or Tahiti, or through Central America.\textsuperscript{90} Some amount of liquor flowed from the United Kingdom directly to the Caribbean, but it is difficult to differentiate between direct routings and trans-Canadian routings.\textsuperscript{91}

Seagram’s Sam Bronfman and Harry Hatch of Hiram Walker and Sons (producers of Canadian Club) came to dominate rum running over the course of the campaign. Both were based in Canada and supervised operations that stretched from Detroit, west to Vancouver, south to Mexico, east through Central America, and back north to Newfoundland and Nova Scotia by the 1930s.\textsuperscript{92} Some smaller volume of rum flowed from Cuba into the Gulf States, and a small but indeterminate volume of mescal\textsuperscript{93} crossed from Mexico into the Southwest.\textsuperscript{94}

\textit{Moonshining.} Illicit small-scale distilling, or moonshining, easily pre-dated the Prohibition campaign. Due to the cost and relative danger of aging product, moonshine might be made with hasty infusions of fruit for local consumption, but was far more likely to make its way into the larger illicit alcohol flow as neutral spirits. Domestic illicit production fell squarely within the

\begin{footnotesize}
\begin{enumerate}
\item Division of responsibility memos, RG 26.
\item Okrent, \textit{Last Call}; Willoughby, \textit{Rum War at Sea}. Memos, RG 26; Canadian Historical Statistics, online.
\item Memos, RG 26.
\item Modern holdings of whatever records may have existed in the Caribbean at the time are difficult to locate, and may not exist at all. I have had no luck finding them after personal communications with the Bahamian national archives.
\item Tequila is a regional denomination of mescal; mescal is the name for liquors from cactus sugars.
\end{enumerate}
\end{footnotesize}
wheelhouse of the Prohibition Bureau.

Corn syrup provided the favored base sugar source for small-scale moonshining, as it was easily transported, required little processing, and produced little smoke during the distilling process.95 The volume of corn sugar consumed by Americans grew dramatically during Prohibition; later, I use this as a proxy to estimate the amount of moonshining during this period. In rural states with pre-existing Prohibition laws, moonshiners were already competent at these processes.

Since small-scale moonshining is essentially self-contained, and therefore does not require much of a distribution network, it further suited the needs of rural communities. Therefore, the Fortune piece from the period places major moonshining regions in the American South and the Midwest.96 Moonshining is risky – methanol (wood alcohol) and other impurities may become concentrated through the distillation processes. While stills in local communities involve some sort of social accountability, out-of-region moonshine transfers introduced these hazards into the flow of illicit alcohol. Because of this, small-scale moonshiners were not a decisive force in meeting the demand of major Eastern cities.97

Large-scale illicit distilleries contributed more to the overall alcohol flow than these small producers. According to Phillip J. Cook:

*By 1930, illegal distilleries were the main source of liquor, generally a high-quality product. The bulk of this was not the Appalachian moonshine that had been produced since 1791. Some of the Prohibition-era distilleries were comparable in scale to the legal distilleries of the pre-Volstead era, and were located in or near*
My estimates place illegal distilling and industrial diversion on roughly equal footing around 1930, but all of these assessments involve extrapolations and weak instruments. Cook’s finding and mine are substantively compatible within a broad understanding of the Prohibition story.

**Diverted Industrial Alcohol.** Industrial alcohol arrived at the same end of neutral spirits through different means. Ethanol is used in the production of cleaners, pharmaceuticals, solvents, perfumes, and many other non-beverage applications. In the era of the World Wars, industrial capacity was king, and chemistry was a fundamental building block of that capacity. Following the first war, increasing taxation on beverage alcohol created a price discrimination problem between recreational consumers and industrial consumers.

Denaturants, toxic or noxious chemicals designed to render industrial alcohol un-drinkable, provided a solution. Under Prohibition, the Bureau of Industrial Alcohol took over the legal processes for denaturing alcohol. Due to the demand pressure for alcohol during Prohibition, a market sprung up for re-naturing alcohol. Denaturants were added to alcohol through chemical processes, and could be removed through similar processes. Fly-by-night chemical companies purchased massive amounts of industrial alcohol, removed the denaturants, and illicitly sold it as beverage alcohol.

This led to a cat-and-mouse game between the Bureau of Industrial Alcohol and illicit

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99 Doran would later serve as chief of the Prohibition Bureau in 1927. Like President Hoover, was a technocrat. He grasped the problems of alcohol control better than the ideologue Haynes, and was generally considered competent-to-effective.
101 Doran, “Alcohol and the Chemical Industries.”
102 Statistics et al., *Statistical Abstract of the United States*.
103 Schmeckebier, *The Bureau of Prohibition*.

423
chemists around the vapor point of alcohol. Since a perfect denaturant did not exist, the 
regulators and the chemists battled over precision and tolerances. This was a risky game, 
especially because there was little product accountability for the re-distillers, and imperfections 
in these processes led to poisonings. The Prohibitionists, for their part, were generally 
apologetic for the use of toxic denaturants, placing the blame for these injuries on 
consumers. Along with similarly-risky moonshine, industrial alcohol provided volume for the 
domestic distilled liquor market. These neutral spirits were used to cut smuggled whiskey, or 
more unpleasantly, were colored and flavored with creosote or worse to simulate whiskey.

Diverted industrial alcohol unsurprisingly predominantly reached industrial, urban areas; 
rural areas tended toward moonshine, as described in the graphic below:

![Figure 36: Regional Sources of Alcohol, "US Liquor Industry," Fortune 1931.](image)

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105 Okrent, Last Call.
106 Roy Haynes seems far too ready to deploy the toxicity of Prohibition-era alcohol as a deterrent, given the 
casualties caused by toxic denaturants; smugness about poisonings ultimately cost the Prohibitionists some amount 
107 Creosote is distilled tar. For more information, see CDC factsheet: http://www.atsdr.cdc.gov/ftfacts85.pdf
108 Okrent, Last Call.
Diverted Sacramental Wine & Medicinal Liquor. Every law has loopholes. In a popular law, the government and the public will recognize and attempt to close these loopholes. For an unpopular law, these loopholes can be pried wide open as a form of nullification.

The Volstead Act exempted sacramental wine for use by clergy in religious services. In a predictably comedic turn of events, increasingly implausible claimants to the positions of priest and rabbi purchased ‘sacramental’ wines whose labels were clearly oriented toward secular palates. For example, Prohibition Agent Isadore Einstein discovered an “Assembly of Hebrew Orthodox Rabbis of America,” whose sole member was an individual named Sullivan.¹⁰⁹

Similarly, the Volstead Act allowed for medicinal liquor, authorized by physicians to be dispensed by drugstores. The fictional Jay Gatsby and the non-fictional Walgreens chain of stores built their fortune by supplying prescription liquor.¹¹⁰ As with sacramental wine, most ‘medicinal’ liquors carried decidedly non-pharmaceutical labeling.¹¹¹ These two loopholes represent a very small portion of Prohibition-era drinking, accounting for only 0.6% of total drinking overall.¹¹²

Homebrewing and Home-vintning. By far, the most important loophole in the Volstead Act was the fruit juice exception. As previously discussed, this was a concession intended for Midwestern farmers, but one that benefitted California grape growers far more. While it is difficult to directly assess actual homemade wine production, accounts of a homemade wine boom are ubiquitous in period primary sources.¹¹³

Using USDA and Census sources, California grape production increased from 2.5 million

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¹¹⁰ Okrent, Last Call.
¹¹¹ Ibid.
¹¹² Analyses from Statistical Abstract, USDA data, more. Spreadsheet with annotated sources available.
¹¹³ Feldman, Prohibition; Warburton, The Economic Results of Prohibition; Okrent, Last Call.
pounds in 1920 to 3.9 million pounds in 1930.\textsuperscript{114} In the two decades prior to Prohibition, 53% of grape production became wine. Using this percentage, homemade wine accounts for 14% of Prohibition-era drinking, peaking at 26% in 1920. Since Alicante wine grapes account for the bulk of new planting during Prohibition, extending the historic ratio of grapes-to-wine provides a conservative estimate – if we assume all new planting during Prohibition is for wine grapes, home-vintning accounts for 17.5% of period drinking. Gains made by wine during this period largely held after repeal, though shifting back from Alicante to more traditional wine grapes was a decade-long ordeal.\textsuperscript{115}

Malt does not qualify as a fruit, but for Prohibition-era drinking purposes, it might as well have been.\textsuperscript{116} Malt syrup revolutionized homebrewing and constituted the bulk of the semi-legal beer market. Just as grape bricks were wine that lacked only yeast and time, malt syrup quickly becomes beer with the addition of water and yeast. Production of this syrup exploded during Prohibition, providing an outlet for beer giants such as Anheuser and Pabst. While the syrup had baking and confectionary uses, its primary application during this was home beer production.\textsuperscript{117}

Just as moonshining ranged from backwoods stills to industrial-grade distilleries, homebrewing had both commercial and personal faces. While homebrewing was theoretically illegal, the nation generally viewed searches and seizures of beer inside the home as beyond the

\textsuperscript{114} USDA, Census Bureau. “Census of Agriculture,” 1920-1940.
\textsuperscript{116} They were legally prohibited from referring to these as ‘near beer,’ but names like ‘Bevo’ conveyed the same message. Okrent, \textit{Last Call}.
pale.\textsuperscript{118} Commercial brewers were forced to make greater allowances for security, but stood to make far more profit. From Fortune, 1931:

\textit{There are four kinds of beer: alley beer, the great bulk of commercial beer, so called because its brewery is on an alley where trucks are less noticed; home-brew, made everywhere, especially where cellars are handy; needle-beer, near-beer into which alcohol or drugs have been injected (if a drug, like ether, is used, the beer is non-alcoholic and therefore legal); and diverted beer, near-beer which has not (as all near-beer should be) been dealcoholized. (Near-beer is always first brewed full strength.) Alley beer and home-brew are by far the most important.}\textsuperscript{119}

Assuming a large majority of American malt syrup production and near-beer became traditional beer, home brewing accounts for about 20\% of American drinking during the Prohibition period. As opposed to the vineyards, this was a winnowing time for the large beer industry as producers scraped by making syrup and ice cream.\textsuperscript{120} American beer consumption remained fairly stable in the range of 15-25\% of total alcohol consumption. Altogether, semi-legal beer and wine provided approximately 37.5\% of American alcohol consumption during Prohibition.

\textbf{Weighting Sources.} I hold that suppression’s most positive effect was the diversion of drinking away from the saloon and toward social drinking. This effect is manifest in the strong


\textsuperscript{119} “U.S. Liquor Industry (Fortune 1931).”

\textsuperscript{120} In a particular irony, this set the conditions for the later cartel of beer producers that emerged after Prohibition. Okrent, \textit{Last Call}. This cartel opposed home brewing, and managed to ban the practice until the 1970s.
role of semi-licit homebrewing and homevintning during the period. Preferences for taste make these effects more pronounced. Whiskey that was both safely produced and aged for taste came from primarily foreign sources. Domestic alcohol generally came from either moonshine or diverted industrial sources, which had neither quality guarantees nor taste. Therefore, homebrewing and homevintning provided an option with passable taste and acceptable quality control in the absence of foreign whiskey. While all estimates from this period are necessarily rough and suspect, we have at least a working theory that maritime suppression cut off the main source of quality liquor, which reduced overall alcohol consumption and directed consumption toward semi-licit beer and wine.

In order to evaluate this working theory, accounting for as much domestic production as possible using proxies and precursors for moonshine, homebrewing, and industrial diversion provides a maximum estimate for maritime smuggling. Using Miron and Zweibel’s estimates of per capita alcohol consumption, we can multiply by population to determine the approximate amount of aggregate alcohol consumption.121 US census data records alcohol production during the periods prior to and after Prohibition, which I subtract from the Miron and Zweibel extrapolated estimates.122 This yields a residual total of unexplained alcohol consumption.

121 Statistics et al., Statistical Abstract of the United States; Miron and Zwiebel, Alcohol Consumption During Prohibition.
122 Census and Statistical Abstract data. I also include a correction for pre-Prohibition wine consumption using Blocker’s data, as the Statistical Abstract does not effectively track American wine production prior to Prohibition. Blocker, “Consumption and Availability of Alcoholic Beverages in the United States, 1863-1920.” Excel worksheet available on request.
In the period prior to Prohibition, official production numbers and imputed consumption numbers roughly equal each other – the difference between the two averages around 12 million gallons of alcohol unaccounted for per year. This may be due to missing production sources or errors in imputed consumption. This is an error of about 10% compared to national consumption over the period.  

For obvious reasons, a large residual of unexplained liquor consumption accompanies the years of Prohibition. We will attempt to account for this gap in our rough assessment. A spike of unconsumed beverage liquor production follows this period – since competitive whiskey takes a few years to age, this is likely a supply shock following repeal in order to replenish these stocks.

Since diverted industrial alcohol began as denatured alcohol, unexplained variations in denatured alcohol production hint at the quantity of industrial alcohol. Similarly, since corn sugar is the primary driver for moonshine production, unexplained variations in production serve

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123 Calculation in excel worksheet.
124 I do this in two ways. First, I take a measure of denatured alcohol production from before and after the Prohibition period, and straight-line growth in industrial uses between them in order to create a counterfactual consumption estimate. I then compare actual denaturating during this period. The problem with this method is that economic growth was not linear during this period, and the stock market crash biases results. Second, I compare denatured alcohol production to GNP as a means of controlling for economic growth, and then I straight-line this measure through the Prohibition period as a means of detecting the role of alcohol production in the overall economy. GNP is a very rough measure, but arrives at generally comparable results. Using Fisher 1928’s analysis of seized alcohol from the Prohibition Bureau, I add a correction for non-beverage alcohol from medicinal preparations, which was a major source early in the case which is not captured by denaturing estimates. This is all very tentative, and I make no claims to a proper econometric estimate. Feldman cites a period law enforcement officer estimating about 60M wine gallons – in the case of industrial alcohol, this translates almost directly to 60M gallons of alcohol, as industrial ethanol generally was distilled to 180 proof or higher. This is about 150% of my estimate, but Feldman finds his estimate high and ascribes it to a desire for greater funding. (Feldman 1930, 51.) Doran of the Prohibition Bureau provides a 10M to 15M gallon range for 1925, which is about one-third of my estimate. In Feldman’s words, “there are no authoritative figures, however, which would make our assertion more than a guess, and the reader may, therefore, incline to an opposite opinion without much danger of being disproved.” (54.) I echo his sentiments, but we need to start somewhere. Fisher, *Prohibition at Its Worst*; Feldman, *Prohibition; Warburton, The Economic Results of Prohibition.*
as a proxy for illicit distilling. Malt syrup is a direct precursor to beer, and wine grape yields produce wine, so agricultural production provides an estimate of homebrewing and homevintning. Federal records provide relatively accurate numbers for medicinal liquors, sacramental wines, and ‘near beer’ production. This leaves approximately 20% of Prohibition drinking unexplained. This twenty percent includes both the error term and the volume of illicit smuggling.

Estimating Smuggling. Smuggling is even more difficult to estimate due to the lack of a consistent precursor and a large number of moving parts. At the outset, Prohibition sent a starburst of four million gallons of American liquor abroad in 1920 – Bermuda, the Bahamas, Canada, Mexico, the British Isles, and a hard-to-find destination named “Foreign, port not stated” were all major beneficiaries of this fire sale. These were all major smuggling sources, and this liquor was in a position for immediate re-import on rumrunners. Nassau was the focal point of early ‘Rum Row’ smuggling, and this liquor is almost entirely unaccounted for in Caribbean archival sources. I assume most of this liquor re-entered the United States in the 1920-1924 timeframe.

Liquor was commonly re-exported and laundered, and hence smuggling sources remain difficult to isolate. Despite the name ‘Rum Row,’ whiskey comprised the overwhelming majority of smuggled hard liquor. Gin was generally unprofitable – Americans could add juniper berries to neutral spirits as well as anyone. Whiskey required legal sanctuary in order to properly age, and therefore cross-border demand focused on this unobtainable good.

125 I do this using a similar method – straightline production through the period to create a counterfactual, and then compare to actual production. Estimates of corn sugar are only provided by the decade, as opposed to denatured alcohol, which are yearly. Therefore, use of GDP as a control is not possible. USDA Agricultural Census Data, various years.
127 Personal Correspondence with Statistics Bureau, Nassau, Bahamas. 2014.
128 Willoughby, Rum War at Sea; Okrent, Last Call.
Prior to Prohibition, domestic sources supplied over 95% of the nation’s hard liquor consumption. After the destruction of the American whiskey industry, the British Isles and Canada were the two major remaining sources of whiskey – three-quarters and one-quarter of holdings respectively, though the Canadian portion increased over the course of the case as their industry grew to meet cross-border demand. Various government and private sources place production from Scotland and Ireland around ten to twenty-five million gallons per year. This production was backed by 150 million gallons or more held in reserve, and linked to the American market by way of Bronfman’s partnership between Seagram’s and Scotland’s Distillers Company Limited. With a shock absorber of this magnitude, time-series data is essentially meaningless as an indicator of flow or suppression effectiveness.

Some portion of this liquor made its way to Canada, where it was added to domestic production. Canadian production increased from around three million gallons per year to fifteen million gallons; period sources estimate 80% of this liquor headed south. These flows sought the least defended routings, which were often the least tracked or known routings. This is another inherent analytical problem – rumrunners might clear port with a cargo of liquor theoretically intended for Mexico, offload at sea, and return to port in ballast. Or liquor might be trans-shipped to Saint Pierre and Miquelon, and from there shipped to the East Coast. Or to Tahiti, or Belize, or Nassau, and so on. Total Canadian liquor exports, which spiked during this period, provide an indicator of flows during this period. However, since flows across the Great Lakes generally did not file port clearances, this too is a weak instrument.

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131 Canadian Production Numbers. Willoughby, Rum War at Sea; Okrent, Last Call.
Spikes in Canadian beer production can be attributed to smuggling, as refrigeration and transportation security requirements effectively resulted in a Canadian monopoly on American illicit beer imports. In pure alcohol terms, smuggled beer provided only a small fraction of cross-border drinking. A smattering of other alcohol sources are effectively untraceable – Mexico was in civil war during this period, so records of cross-border tequila are likely non-existent; some portion of French sparkling wines made their way to the American markets, but this small fraction cannot be isolated in the flood of French production.\textsuperscript{132}

Given these problems, any estimates of the quantity of smuggled liquor are necessarily rough and tentative. President Hoover’s Wickersham Commission attempted to answer that question during Prohibition, and with access to some of the best minds of the country and real-time data, they still concluded that “so many purely speculative elements are involved in the making of any figures as to consumption today that in the present conditions it is not worth while to make an elaborate review of the statistical material.”\textsuperscript{133} I have no reason to believe that I am in a position to do better than they did. Still, a figure in the right order of magnitude and a general sense of the direction over time would be helpful in understanding the impact of the Coast Guard on rum-running.

Toward that end, we will assemble the various sources of fragmentary data into a meta-analysis and compare them to qualitative accounts from the period. I assume that there is some signal behind these noisy sources if they converge on general trends. We know that something happened – there was certainly some smuggling during Prohibition - so there is no true null. Using the same principle of maximum likelihood estimation, if we approach the problem from a

\textsuperscript{132} French Wine Production Numbers available in Statistical Abstract, USDA Agricultural Census.
number of different angles, one story will hold up better than all competitors.

The main threat to inference in this low-signal-to-noise, many-disparate-sources approach is ‘circular reporting’ – since we are looking for convergence, we need to ensure that our sources are essentially independent draws. Otherwise, we may be hearing the same rumor from a lot of people.\footnote{To extend this approach to formal network methods, interconnected analytical streams should be treated as one source; this is the core insight from Clustered Standard Errors in traditional statistics.} Provided these glimpses and scraps are independent, we can assemble them into a rough but effective working picture. Once again, this is the sort of approach suited to pressing policy questions that demand an answer despite inadequate and contradictory data, and these findings should not be considered conclusive. In the absence of a better theory, the one that best accounts for what we know is the one that we must use.\footnote{Whether research questions should be selected based on their ability to be cleanly solved rather than their importance is another question entirely. One advantage of this approach is that it provides a working foundation to move forward, which will generate new data and expose errors in the model, which will then allow the model to be refined. Such an approach is best suited for questions which require and generate action. \textit{Karl Popper, The Logic of Scientific Discovery,} 2nd ed. (Routledge, 2002); John Boyd, “Destruction and Creation,” September 1976, http://www.goalsys.com/books/documents/DESTRUCTION_AND_CREATION.pdf.}

The graph above collects these various estimates. As a backdrop, the remainder from the
previous graph of alcohol sources provides a general sense of the scope of smuggling. During the 1922-1924 timeframe, a spike of unexplained liquor consumption correlates with the height of Rum Row. This recedes during the middle period of Prohibition, coinciding with the low-water-mark of the rum trade. The remainder returns to a level somewhere in between these two during the latter part of this case. While the myriad estimates vary greatly, most follow this ‘high-low-medium’ pattern in the range of five to twenty million gallons per year.

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136 On this graph, this line is corrected for an average 8M error underestimation bias in the residuals, and bounded with 16M error bars to approximate a t-statistic of 1.96 with a standard deviation of 8M. This should not be understood as a true 95% confidence interval, as this remainder involves estimates on top of estimates, and I do not account for these compounding errors. Accordingly, this provides a ballpark sense to support and contextualize period sources as opposed to formal statistical inference. Calculations on excel.

137 The first estimate is derived from US Coast Guard Intelligence Office records of vessels hovering off of American coasts. The shape of this graph most clearly follows the overall ‘high-low-medium’ pattern – though the range quantities in this estimate are less reliable than their shape, due to using a rough 20k gallon, once a month estimate for smuggling, which might vary from a thousand gallons to fifty thousand gallons depending on the type of boat; the frequency of trips depends greatly on the mode of smuggling. The primary value of this measure is the pattern, which correlates with the remainder graph (P<0.05, but these are still very weak instruments.)

The second is derived from known and extrapolated anomalous imports and exports into and out of major rum-running ports. Canada and Great Britain tracked these data; Canada even cleared vessels into American ports in contravention of American law for a time, but cracked down on smuggling through bonded warehouses in 1930. St. Pierre and Miquelon served almost entirely as a rum-running base, and Nassau’s imports of liquor jumped from a trace amount to hundreds of thousands of gallons. These known measures, along with the Canadian four-fold increase in liquor production, hint at the magnitude of rum-running, but they follow the opposite pattern. This is because the Canadian increase in liquor production, conducted largely over the Great Lakes, did not fully register until the 1928 timeframe, and because records of whiskey importation from Scotland are fragmentary and likely off by a factor of three to four, given the focus of the Bronfmans on trans-shipments and the prominence of smuggling well before the Canadian market expanded. Still, the second measure is in roughly comparable range to the other measures.

The third measure is a 1931 estimate from Fortune magazine of rum-running, which found that only 3% of American alcohol was smuggled, and that smuggling was vastly over-reported in the news compared to the large amount of diverted industrial alcohol consumed. This seems to corroborate Fisher’s argument using Prohibition Bureau chemical analysis of seized samples, finding less than one percent whiskey (hence less than one percent coming from rum-runners), but that estimate is skewed downwards given the failure of the Prohibition Bureau to arrest maritime smuggling during the years in question. All estimates with the exception of the consumption remainder and the max production bound are within about one million gallons of this benchmark in 1931. This convergence increases confidence in these measures overall.

The fourth measure is an estimate of all seized liquor, multiplied by a correction factor to account for vessels not captured. This, too, is in the ten-to-twenty million gallon range, but since the range is driven by the multiplier, I do not rely on this as an accurate gauge. The shape broadly follows and initial spike and then decrease pattern, but it does not register the medium level of rum-running toward the end of the case. Nor would I expect it to, given that resurgence was driven by hard-to-catch stealthy and speedy vessels.

The final estimate gives an upward bound on smuggling – the sum total of Scotland, Ireland and Canadian whiskey production. The US was an enormous market, and had the capacity to absorb all production from these markets. However, sources available for these production numbers are contradictory, and the long aging process in Scotland provided a ready reserve of whiskey of many years worth of production. Additionally, these whiskeys can be blended with neutral spirits quickly in order to extend them; Cutty Sark was blended and marketed deliberately as a
In concert, these indicators support the general story told by both the Coast Guard and rumrunner primary accounts during this period. Rum Row greatly expands until about 1925, when a massive appropriation for the Coast Guard turns the tide. This displaces smuggling, first to Florida and then to the Great Lakes, but both of these locations are brought under control within about three years, and smuggling decreases overall. However, an aging Coast Guard fleet yields the initiative to the rumrunners, who field new ships and new tactics and manage to partially reconstitute their enterprise. After repeal, the Coast Guard would respond in 1935 with their own recapitalization, and put an end to major maritime liquor smuggling by 1937 at the latest.

All else equal, smuggled whiskey was the drink of choice during Prohibition. Demand built Rum Row – both in terms of taste and quality, imported whiskey was far superior to ‘bathtub gin’ made from industrial alcohol or moonshine. Imported whiskey commanded twice the price of domestic spirits during this period. Unfortunately, the likelihood of actually drinking imported whiskey in an unadulterated form was fairly low – in his price estimates, Warburton tellingly puts “imported” alcohol in quotes. One whisky-cutting plant went so far as to dip their re-formulated ‘imported’ whiskey bottles in salt water, to give their product an ‘off the boat’ appearance. The Prohibition market for liquor clearly had a strong demand for imported whiskey.

That demand was just as clearly stymied, at least in part. Smuggling constituted a relatively...

rum-running whiskey by DCL in order to make use of this opportunity. Altogether, these estimates provide a general range for possible smuggling, and support a general high-low-medium shape of smuggling during the case. Since they are all quite sensitive to modeling assumptions, I do not place stock in any specific number, but their convergence on these ranges and trends provides a working model.

138 Warburton, *The Economic Results of Prohibition*. 158
139 Ibid.
small portion of Prohibition drinking, and that portion declined dramatically after major increases in the Coast Guard and the Customs Bureau in 1924. These suppression efforts pushed the price point of smuggled liquor high enough that Americans preferred to drink lower quality alcohol and less of it.

This closes our third black box - what Prohibition accomplished, it did through supply suppression. Good idea or no, little else was attempted, so whatever changes Prohibition wrought must be assigned to these approaches. Of these supply-side approaches, the Prohibition Bureau was generally ineffective at reducing moonshining. The Bureau of Industrial Alcohol did little better at reducing the diversion of industrial alcohol, which was likely the major source of American illicit alcohol consumption during the period.\textsuperscript{140} The market share of semi-licit beer and wine production consistently grew during the case, which is more a sign of success than of failure. Therefore, something was working, and it wasn’t the Prohibition Bureau.

The most successful suppression effort, by far, was the Coast Guard’s anti-smuggling campaign. The Rum War was the most effective means of suppressing supply; supply suppression was the sole mechanism behind Prohibition, and as poorly executed as it was, Prohibition changed American drinking habits. Given the truly terrible policy planning behind Prohibition, this is remarkable. In the remainder of this section, we will examine the strategies and the structures that allowed the Coast Guard to perform relatively well in this contest.

\textsuperscript{140} Feldman, \textit{Prohibition}.  

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CHAPTER 8, GREY MARKET: EVICTING RUM ROW (1920-1928)
THE ERSATZ ‘DRY NAVY,’ DIPLOMATIC EFFORTS AND THE USCG OPENING OFFENSIVE.

THE RUM WAR AT SEA.

In the last chapter, we began at the end of the operational script, with the demand-restructuring phase. We established that Prohibition and its associated policies altered American demand for alcohol in lasting, structural ways. Since the Coast Guard’s portion of the effort was the most successful aspect of the overall campaign, this demand restructuring is at least in part a function of the Rum War against maritime alcohol smuggling.

In the next two chapters, we return to the beginning of the operational script and explore that Rum War at Sea. In this chapter, we will delve into the grey market contest for public focal points. In this case, the ‘Rum Rows’ provided these focal points. Off the coast of New York, Boston, Miami, New Orleans, San Francisco and Los Angeles, fleets of steamers and schooners in various states of disrepair served as floating liquor warehouses. The failure of the Prohibition Bureau’s dry navy led to the growth of these Rum Rows. The opening volley in the Coast Guard’s campaign put an end to the rows, forcing rumrunners into syndicates and high-performance smuggling vessels. In the next chapter, we will examine the black market intelligence and interdiction game.

Given the number of moving parts to this story, we begin with a statistical and geographical overview of the case. A survey of diplomatic efforts provides a backdrop to enforcement. Next, we will briefly investigate the over-determined failure of the Prohibition Bureau, which will bring us to 1924 and the Coast Guard’s entry in force. We will then spend the balance of the
chapter surveying the first half of the Rum War.¹

**STATISTICAL OVERVIEW.**

*Timeline.* We begin in January 1920 as the Volstead Act came into force. Unfortunately, records from 1920 through 1924 are as lacking as enforcement itself during that time. Periodicals and the rare memo describe maritime enforcement during this period under the Prohibition Bureau, congregating strongly around the general theme of ‘bad.’² We can reasonably assume rum traffic increased from a near-zero level in 1920 to a peak of over three hundred major vessels engaged in the trade in 1924. This growth likely increased exponentially after Bill McCoy founded ‘Rum Row’ in May 1921.³

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¹ Overlapping perspectives help make sense of this multi-faceted story. The operations and intelligence lenses focus on the Coast Guard’s interactions with their adversaries. Personnel and acquisitions explore the force’s interaction with itself, in terms of humans and hardware respectively. Finally, by examining interagency and international coordination, we better understand the service’s interactions with its allies. Each of these lenses identifies unique challenges inherent to fighting and adaptive adversary, and all together they tell a story of the triumph of human initiative amidst bureaucratic constraints. We will swap between these lenses over the course of the case as we progress through the case in rough chronological order. Since bureaucracy is very much a contemporary challenge, we will devote special attention to the Coast Guard’s strategies for safely overcoming structural impediments to innovation.

² “LIQUOR FLEET NEAR; DRY NAVY ON GUARD; All Marine Prohibition Forces Mobilize to Capture Cargoes Valued at $10,000,000. LEFT BAHAMAS ON OCT. 31 Six British Schooners on Way to Test Three-Mile Limit With 100,000 Cases of Rum.,” *The New York Times*, November 4, 1922; “DRY NAVY’S DRAGNET; How Prohibition Flotilla Will Make War on Rum-Runners --Armed With 3-Inch Guns,” *The New York Times*, April 9, 1922; “RUM SKIPPER SHOWS CARGO TO DRY NAVY; Captain of the Tacoma, Anchored Fifteen Miles Out, Greets Agents Cordially.,” *The New York Times*, September 24, 1922; “DRY NAVY LAID UP, LIQUOR RUSHED IN; MURDER FOLLOWS; Dead Soldier, in Army Truck Emptied of Its Whisky Load, Given Up to Police. SHOT IN ROW OVER PAYMENT Three Men With the Truck Say They Surrendered and Told, on Legal Advice. $7,000,000 LIQUOR LANDED Raced to Port From Bootleg Fleet While Anti-Rum Flagship Hansen Is Disabled Here. Guard Disabled--Whisky Rushed In. Awaiting Chance for Weeks. No Other Vessel Available. Hidden in Many Places. Confiscates Seized Liquors.,” *The New York Times*, December 31, 1922. Also clippings in RG 26, NARA.

³ Frederic Franklyn Van De Water, *The Real McCoy* (Flat Hammock Press, 1931); Malcolm F. Willoughby, *Rum War at Sea* (Fredonia Books (NL), 2001). Also RG 26, NARA.
Our statistical account begins in August 1924, when the US Coast Guard Intelligence office begins to catalog and track known major rum-running vessels. Large rumrunners typically held British registry, remaining outside American territorial waters awaiting small ‘contact ships’ that would run rum in to the shore. Since these vessels took refuge in diplomatic immunity, they typically filed paperwork upon their departure from port. The Coast Guard gained access to these clearances through increasing intelligence sharing with the Canadian and British governments. The Intelligence Office also developed a visual identification guide for suspected rum vessels; they distributed this guide to patrol ships, and tracked these rumrunners through reports from these vessels. The Intelligence Office gained fidelity on all unknown contacts by the beginning of 1926.

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5 Coast Guard Intelligence Office Memo Traffic, RG 26, Box 178, National Archives (Washington DC.)
7 Which was basically one person at this point - Commander Charles S. Root.
At the height of Rum Row in 1924, around 325 schooners or steamers acted as ‘motherships’ in the rum trade. By mid-1925, this number dropped to slightly under 250 ships. By this point, around 75 ships that dabbled in rum running had either been deterred or had fully committed to the trade. These deterred ships, along with approximately forty captured major vessels, account for the period’s drop in smuggling.

Continued pressure drove the number of suspected smuggling vessels under one hundred by 1929.\textsuperscript{8} Improvements in smuggling ship design led to a resurgent ‘rum fleet’ in the early 1930s, which stabilized in the 150-200 ship range. The sequential shocks of the stock market crash, repeal, and renewed Coast Guard enforcement attrited the smuggling fleet down to a residual total around one hundred vessels by 1936. The Coast Guard reported an end to major maritime liquor smuggling in 1937, and ceased reporting on these vessels by 1939.\textsuperscript{9} Some fraction of this remnant made its way into other forms of smuggling, primarily trafficking narcotics or people; the rest were sold or re-entered legitimate commerce.\textsuperscript{10}

The graph below describes the operational level of rumrunner activity over the course of the campaign using a rough index of monthly activity off of the Eastern seaboard.

\textsuperscript{8} This decline may overstate the decrease in smuggling, as waves of smuggling in Florida and on the Great Lakes were generally conducted with smaller vessels that were under-reported in these totals. RG 26, NARA, Intel Reports.
\textsuperscript{9} RG 26, NARA.
\textsuperscript{10} RG 26, NARA; also Willoughby, \textit{Rum War at Sea}. 
As with the total rumrunner fleet graph, this index follows the broad high-low-medium-none

\[\text{Figure 38: Index of East Coast Rum Row Activity (NARA RG 26 Records, USCG Intel.)}^{11}\]

\[\text{While this graph represents the number of vessels per month hovering off of the US Eastern Seaboard, the mode of smuggling changed enough during this period to render any one measure inadequate for the whole period. Moreover, enough data is missing that no one metric has full coverage of the period from archival data. This chart represents the best data source and closest equivalent to the hovering measure. For the first period, I match a measure of ‘Rum Row’ to this measure, for the second period, I pull this data directly from USCG sources as-is, and for the third period, I find an equivalency with weekly hovering measures. Accordingly, I consider it more of an index of activity and less a direct measure of ships hovering, as the relationship between hovering and smuggling changed enough to be essentially unhelpful ‘as-is’ over this time period. In the USCG Commandant’s 1938 post-mortem of the Rum Trade, he holds that ‘this is the area which proved so profitable to the smuggling fleet and the one which offered the greatest concern to the Treasury and Coast Guard in the drive against the smugglers.’}\]

In all cases, I have ‘welded’ overlapping periods of full data between one period and the next in order to ensure that there is a strong link between one measure and the next. Above are all three measures and these ‘welds.’ All data from RG 26, NARA.
pattern from the previous chapter alcohol source chart. The 1925 global maximum of activity corresponds with the peak of Rum Row and the height of maritime smuggling. Coast Guard activity led to a decline to the low-water mark around 1930. In the course of this decline, the focus of rum smuggling shifted to Florida in 1927 and then to Detroit and the Great Lakes in 1929 and 1930; in both cases, Coast Guard and Customs enforcement followed these shifts.

After effective offensives on both of these fronts, rum-running returned to the Eastern Seaboard with new high-performance, low-profile ‘banana boats.’\footnote{So named for their low profile in the water, and their relatively high bow and stern. - January 1 1995, \textit{It Came by the Boat Load: Essays on Rum Running} (Tyne Valley, P.E.I.: Geoffrey Robinson & Dorothy Robinson, n.d.).} These abandoned the immunity of ‘rum row’ model, preferring to discretely slide into harbor or park off of secluded beaches for clandestine unloading.\footnote{Ibid.; Willoughby, \textit{Rum War at Sea}.} Encrypted radio communications and coordinated networks ashore supported these operations.\footnote{Ensign, \textit{Intelligence in the Rum War at Sea, 1920-1933}; David Kahn, \textit{The Codebreakers: The Comprehensive History of Secret Communication from Ancient Times to the Internet}, Rev Sub (Scribner, 1996). Also RG 26, NARA.} The Coast Guard and this fleet stalemated for the next three years. Both forces were far from stale during that period – in this timeframe, the Coast Guard made great leaps in signals intelligence, while the ‘rum fleet’ continued to improve enterprise performance and security.\footnote{RG 26, NARA.}

The stock market crash broke this deadlock – declining incomes diminished the demand for drink, but the long-term loss of government income undermined demand for Prohibition. Repeal shocked the rum-running market, but not decisively so. The rum trade made a last push in 1935, which was aggressively answered; the remnants of the trade collapsed soon after.

Supporting the ‘boxer’ model, we find the characteristic ‘sawtooth’ shape throughout, signifying
shock-response network behavior.\textsuperscript{16}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure39.png}
\caption{Captures by Region (NARA RG 26 Records, USCG Intel.)\textsuperscript{17}}
\end{figure}

\textit{Geography.} Breaking out Coast Guard captures by regions reveals another familiar pattern. The initial disruption of the New York Rum Row around 1926 displaced rum traffic to Florida. When the Coast Guard partially interrupted the Florida surge, the flow shifted to the Great Lakes in 1928. When this western approach was disrupted, the trade returned to New York by 1930. The New York, Great Lakes and to a lesser extent, Gulf trades all serviced the demand of the Northeast metropolex. Rum Row directly serviced Boston and New York, while the Lakes and Florida served the same market using road transport once in country, using overlapping

\textsuperscript{16} Notably, the overall ‘sawtooth’ shape visually arcs downwards whenever the Coast Guard enjoyed flush procurement budgets (1924-1930 and 1935.). However, these results are not robust to any conventional statistical level, and given the autocorrelation due to organizational learning, statistical inference would be challenging. The personnel budget, and to a lesser extent, the operations and maintenance budget continued to grow through this period. Darrell Hevenor Smith, The Coast Guard: Its History, Activities, and Organization, (The Brookings Institution, n.d.). Also yearly reports from Dept of the Treasury.

\textsuperscript{17} Records of all vessel captures, aggregated by large regions. No differentiation made for size of vessels or weight of illicit goods captures. All data from RG 26, NARA.
bootlegging criminal networks. The California liquor smuggling front was largely independent from these other three regions, due to the prohibitive costs of cross-country terrestrial illicit traffic.

In Figure 4, below, a time lapse of captures tells a similar story. The Northeast, especially Boston and New York, accounts for the majority of captures and activity in terms of both raw numbers and seized gallons of illicit alcohol.\(^\text{18}\) In the Gulf States, South Florida and New Orleans provided focal points for smuggling. Detroit was the epicenter of Great Lakes smuggling, though Buffalo and Niagara Falls played a major role. Under conditions of increased suppression, rumrunners made use of the entire American shore of Lake Erie. Pacific smuggling migrated from Vancouver and San Francisco down to rum rows in Southern California and Mexico.

\(^{18}\) Illicit alcohol weight imputed based on capture description. Ethanol weight estimated by type of liquor and container capacity, but, as with the rest of these analyses, this is a best guess. RG 26, NARA.
Capture density provides a good measure of small boat actions in United States waters, but misses the effort spent trailing rum-runner ‘motherships’ in international waters. Conversely, intelligence reports overlook these small craft, but describe the deployments of these ‘motherships’ well. The animations in Figure 5, below, present both intelligence and capture reports, aggregated by region and by year. Within a geographic zone, I distinguished these data by the patrol force making the capture. We will explore these divisions more fully later, but in brief overview, there were four main layers of the Coast Guard rum blockade – the distant sweeping Destroyer Force, the cutters of the Offshore Patrol Force, the Section Base patrol boats, and the Lifesaving Station foot patrols and speedboats.

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19 Data from cumulative seizure reports, RG 26, Box 178. Converted into excel, some locations imputed by base location or capturing ship, then converted into time series .kml data for Google Earth. Symbols weighted by estimated ethanol gallons seized, logarithmic scale. Dataset available on request.
In summary, smuggling peaked in 1924, declined until about 1930, partially recovered and stalemated the Coast Guard until the stock market crash and repeal, surged one last time in 1935 and was crushed soon after. The weight of effort shifted from the Northeast, to Florida, to the Great Lakes, and back to the Northeast for the remainder of the campaign. The Pacific campaign bounced from San Francisco to the Pacific Northwest and Southern California over the course of the decade.

These three signatures offer *prima facie* evidence of the ‘Boxer’ model at work. First, the ‘sawtooth’ network shock-response signature appears as a fractal at different levels of analysis and across different regions. Second, we find a ‘whack-a-mole’ pattern between regions, where

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20In sequence, this animation portrays summaries of Intelligence Reports and Capture Reports aggregated by regions. In the first animation, intel and captures are overlaid by large regions, first by total estimated ethanol gallons, then by numbers. In the second, captures, portrayed by capture zone according to capturing vessel type, are similarly presented according to weight and then number. Finally, intelligence reports, including fitting out region, are presented – first globally, and then in focus on East Coast rum row. RG 26, NARA. Dataset available on request.
interdicting the network in one area catalyzes it in another area. We also find a ‘ratchet’ effect – once the Coast Guard resolves a given model of rum running, it locks the model out for the duration.\textsuperscript{21} Finally, in the evacuation of Rum Row and the rise of radio-equipped stealth smuggling ships, we see a shift from grey markets to black markets driven by an increase in patrols.

We proceed by tracing these processes over the course of the case. As in the British case, the Coast Guard finds increasing success as they flatten their organizational structure. As opposed to the British case, the Coast Guard starts with an already strong and efficient organization for the task, but their support is front-loaded and therefore they must achieve their main victories early. As before, the goal is to get as far as you can and hold as long as you can. In the back-loaded British campaign, the calendar favors the suppressor; in this front-loaded campaign, the suppressor must win the first few rounds or accept some sort of compromise to regain public support in an endgame.

Though the Coast Guard did well, considering the circumstances, they did not win in the first few rounds. It didn’t help that Prohibition Bureau fought those first few rounds. Nor did it help that the foreign policy process largely sat out the opening bout, which is where we begin our narrative account of the campaign.

\textbf{LEGAL AND DIPLOMATIC CAMPAIGN, 1920-1935.}

The most effective means of denying sanctuary to an illicit market is to enlist whoever happens to own the sanctuary, if at all possible. Therefore, transnational illicit markets catalyze transnational law enforcement. In the last case, the British campaign to destroy the Atlantic

\textsuperscript{21} The return to New York is a seeming exception to this pattern, but the later smuggling efforts are very different from the first Rum Rows, and I consider these separate models.
slave trade brought them into diplomatic contact with almost every political structure that touched the trade. In this case, the Prohibition campaign placed American diplomats across the table from representatives of neighbors from around the hemisphere, as well as the Japanese and European powers. Since the diplomatic effort serves as a backdrop to the campaign, we will deal with it in one fell swoop presently, and then proceed to the maritime suppression narrative.

Figure 42: Liquor Treaty Problem Sets (Spinelli, Jones)²²

*Topography and Players.* American diplomats faced a daunting game board – in order to control the flow of rum, they needed to control border approaches from all four compass points,

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along with European source states. Canada controlled the northern approaches into the United States and hosted the major rum syndicates; they remained the most important international player throughout the case. Under Prime Minister Mackenzie King, Canada charted an increasingly independent course within the British Commonwealth.

Newfoundland was a separate dominion within the British Empire from 1907 to 1949, adding to the coordination problem. The French possessions of St. Pierre and Miquelon, off the coast of Newfoundland, provided a persistent and never-quite-solved frustration for American anti-smuggling efforts. Both territories sought fishery concessions from the United States, and used rum smuggling as a lever toward that end.23

The epicenter of the rum smuggling trade in the Gulf of Mexico was Nassau in the Bahamas Islands. Bermuda played a very minor role – the military governors of the island were nonplussed by the idea of becoming a smugglers haunt.24 The Bahamas, on the other hand, were deeply in debt and saw rumrunning as a means to replenish their coffers. Churchill briefly served as Colonial Secretary during this period – while his well-known preference for drink explains his antipathy toward Prohibition, his governmental responsibilities likely amplified this preference.25

Mexico, Cuba, and Central America offered southern routes into the lucrative New Orleans and Florida markets. Both Mexico and Cuba suffered civil wars and unrest during this period. This gave the United States diplomatic leverage with these governments, but shortcomings in governance made the resulting treaties less than effective. The crown colony British Honduras,

23 CSR Intelligence Assessment, 1930. RG 26, NARA.
25 This seems all the more probable as his rival, Prime Minister Lloyd George asserted during the Great War that “drink was a greater enemy…than Austria or Germany.” Okrent, *Last Call*. 450
present-day Belize, served as a rum-running base and radio relay late into the case. The United States took a heavy-handed approach toward rum smuggling vessels that flew Central American flags, as it was unlikely that these governments could or would do much to oppose seizures made under United States laws.

The focus of smuggling along the Pacific shifted from Canadian British Columbia to Mexico as Canadian enforcement improved. The United States also successfully engaged Japan in treaty negotiations. Additionally, following the success of St. Pierre, Bronfman’s smugglers led an abortive attempt to use the French Polynesian island of Tahiti as a base. Tahiti is more than four thousand miles from California, while St. Pierre is under a thousand miles from Boston, so the analogy did not hold up to the tyranny of geography in this case. By the 1930s, the United States also engaged Chile.26

Finally, the United Kingdom served as the primary source of European supply. A reservoir of Scotch and Irish whiskey made its way to Nassau and Nova Scotia. Just as importantly from a diplomatic perspective, London provided an effective way to reach Ottawa and the sole means to bargain with the British West Indies. Similarly but less successfully, Paris negotiated on behalf of St. Pierre and Tahiti; even if the French government had actually wanted to curtail smuggling from these ports, it seems unlikely that they would have been successful given the distances involved.

The United States attempted to engage a slew of other European nations once it obtained precedents with the British. These included the Greeks, Italians, Dutch, Danish, Belgians, Germans, Spanish, Swedes, and Norwegians. While most of these nations were very minor players, the Norwegians were wrestling with their own liquor ban and its concomitant surge in

26 Law Enforcement at Sea Relative to Smuggling, USCG Manual (GPO, 1932.)
smuggling, and therefore had themselves produced capable rumrunners. The Norwegian steamer *Sagatind* holds the record for largest volume of liquor aboard a captured vessel; after failing to respond to warning shots, the Coast Guard boarded the ship only to find the entire crew intoxicated.\(^{27}\) Since the capturing vessel never had any record of the ship transferring liquor to contact ships, she was eventually released on appeal. Altogether, each of these approaches had their own flavor, and late colonial politics only complicated the mix further.

<table>
<thead>
<tr>
<th>Faction</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Courts</td>
<td>Aug 1921</td>
<td>Gundul Ruling: Canada has no duty to prevent clearances of US-bound run-runners.</td>
</tr>
<tr>
<td>US Congress</td>
<td>Sep 1922</td>
<td>Tariff Act/Four-League Limit: Ships can be boarded for customs out to 12 NM.</td>
</tr>
<tr>
<td>US-UK</td>
<td>Oct 1922</td>
<td>UK commits to unspecified anti-smuggling coop. opposes 12 NM limit</td>
</tr>
<tr>
<td>US Treasury</td>
<td>Nov 1922</td>
<td>I illicit ships need to communicate with shore in order to seize &gt;3 NM</td>
</tr>
<tr>
<td>US Treasury</td>
<td>May 1923</td>
<td>US liquor smuggling ships be seized &quot;everywhere&quot; – Inf’l Opposition</td>
</tr>
<tr>
<td>US Courts</td>
<td>Jun 1923</td>
<td>Marshall Case: McCoy’s ship 1790s NM statute invoked, seizure upheld, UK demurs</td>
</tr>
<tr>
<td>US-UK</td>
<td>Jun 1923</td>
<td>SecTreas Mellon Relents, Releases ships seized under previous laws</td>
</tr>
<tr>
<td>US-UK, France...</td>
<td>Jun 1923</td>
<td>Treaty Fail: Seeks 12 NM right of search. UK rejects, then all reject. Also ITA, ESP, JPN.</td>
</tr>
<tr>
<td>US-Canada...</td>
<td>1924+</td>
<td>Treaty: 1-hr limit. UK precedent. Also BEL, DNK, DEU, GRC, ITA, NLD, ESP, NOR, SWE, CUB.</td>
</tr>
<tr>
<td>British West Indies</td>
<td>Mar 1926</td>
<td>UK implements conf. rec’s, de-registers US-controlled vessels. Voluntary, non-binding.</td>
</tr>
<tr>
<td>US-UK Canada</td>
<td>Apr 1926</td>
<td>UK intimates that US-Canadian liquor issues should be taken up with Ottawa, not London.</td>
</tr>
<tr>
<td>US-UK</td>
<td>Jul 1926</td>
<td>Conference: Jamaica anti-smuggling measures, more intelligence sharing.</td>
</tr>
<tr>
<td>US-France</td>
<td>Mar 1927</td>
<td>Treaty: 12 NM limit, finally ratified, treaty languished since 1924 in French Legislature.</td>
</tr>
<tr>
<td>US Courts</td>
<td>Apr 1927</td>
<td>Quandray Case: Persons, cargoes liable as well as ships in extra-territorial jurisdiction.</td>
</tr>
<tr>
<td>US Courts</td>
<td>May 1927</td>
<td>Underwriter Case: SCOTUS re-instates reversed libel – US Authority not limited to 12 NM.</td>
</tr>
<tr>
<td>USCG/US Navy</td>
<td>Oct 1927</td>
<td>Unilateral action against Cuba’s Machado, stations sub-chasers off Cuba to intercept smugg.</td>
</tr>
<tr>
<td>US-Bermuda</td>
<td>May 1928</td>
<td>USCN cutters in Bermuda spark diplo response, Billard calls them back.</td>
</tr>
<tr>
<td>US Congress</td>
<td>Aug 1935</td>
<td>Anti-Smuggling Act: Authorizes &gt;80NM 'Customs Enforcement Zone'.</td>
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</tbody>
</table>

**Figure 43: Major Cases, Treaties and Legislation relevant to Liquor Smuggling (Spinelli, Jones)**

(Colors: US Domestic, British Empire, Other International)

**Timeline.** Paralleling the British case, the initial American approach unilaterally sought to extend of American domestic authority into the international arena. A Canadian court ruling by
Judge W.E. Gundy, a minor Canadian magistrate helped steer America on this unilateral course – he held that the United States was “big enough to take care of its own laws,” and Canada was under no obligation to do so.\(^{28}\) Therefore, the government could not deny the outbound port clearances of Canadian ships manifested for the United States with cargoes of liquor. The United States legislature and courts responded aggressively. The Tariff Act of 1922 asserted a willingness to search vessels up to four leagues (12 nautical miles) from the American shore. In the same year, the *Grace and Ruby* case found ‘constructive presence’ a basis for seizure – under this principle a vessel whose associated boats enter the smuggling cordon could be seized on account of the intentional smuggling relationship.

These actions sparked a response from the British Empire who was, as ever, diligent in defending her maritime rights. They vigorously held to the traditional three-mile territorial sea norm and opposed the American attempt to expand their oceanic cordon to 12 nautical miles. The United States responded by citing the British ‘hovering acts’ of the 1700s, which asserted a similar prerogative and which the British had long since disavowed.\(^{29}\)

The early United States’ response to this dispute was convoluted. On one hand, the US Treasury Department insisted that ships must have positive communications with the shore in order to be seized beyond the three-mile limit – hovering with liquor on board was not enough. On the other hand, the courts found that vessels smuggling liquor into the United States could be seized ‘everywhere.’\(^{30}\) In the 1923 *Henry L. Marshall* case, a libel against Bill McCoy’s British-

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\(^{29}\) Spinelli, *Dry Diplomacy*; Jones, *The Eighteenth Amendment and Our Foreign Relations*. Also comments by Root in RG 26, Box 178.

\(^{30}\) Jones, *The Eighteenth Amendment and Our Foreign Relations*. 

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flagged ship, the high court upheld the seizure by finding a 12-mile limit in a 1790s statute.\textsuperscript{31} The British furiously demurred, and in June, Secretary of the Treasury Mellon relented and released a number of seized British-flagged vessels.

Failing to advance the twelve-mile norm, the United States shifted toward positive international law and treaties. Attempting a multilateral treaty with Britain, France, Italy, Spain, and Japan, the United States argued that it was 1) not seeking to extend the territorial seas, 2) seeking a 12-mile right-of-search regime, 3) seeking to seize vessels on reasonable ground of smuggling, and 4) affirming that vessels could not be seized for ‘Sea Stores’ of alcohol not intended for importation. The British rejected this attempt, and the other nations followed their lead.\textsuperscript{32}

The British were in a difficult position. During these latter days of empire, the United Kingdom needed America as a trading partner. However, yielding maritime rights would make the maritime empire look weak. Additionally, their empire in the Americas sought increased autonomy; the stresses of ‘dry diplomacy’\textsuperscript{33} strained these relations.

The dries became increasingly impatient with the British-flagged rum row, and found a regulatory lever in merchant ship licensing. Since the United States was a dry country, and British passenger liners carried liquor, they could ban all liquor-carrying vessels entry into American ports. This would cause catastrophic damage to the British shipping industry, so the Foreign Office came to the table in earnest at the bidding of their shipping board. In exchange


\textsuperscript{32} Jones, \textit{The Eighteenth Amendment and Our Foreign Relations}.

\textsuperscript{33} Spinelli, \textit{Dry Diplomacy}. 
for these port clearances, the British conceded a ‘one-hour limit’ in 1924.34

While one-hour was roughly equivalent to 12 miles in theory – the average speed for a steamer was around 12 knots – it proved frustrating in practice. In order to uphold a libel charge under this limit, the seizing crew would have to establish both the precise position of the seizure and the performance of the seized ship. A captain would have to know the maximum speed of a rum-runner prior to seizing it in order to ensure a legal seizure – this was difficult to do by sight or by reputation, and readily game-able in court. Effectively, the border was different for each vessel, and the border might even have been different for the same vessel on different days.

This was unfortunate for the cutter captains, who now required expertise in maritime law, precision geo-location, and marine engineering as well as their traditional responsibilities of leadership and seamanship. Making this worse, the Belgians, Cubans, Danes, Dutch, Germans, Greeks, Norwegians, Poles, Spanish, and Swedes followed the British precedent and signed ‘one-hour’ treaties with the United States; a treaty with Italy began at six nautical miles, but eventually became ‘one-hour sailing’ as well.35 In a similarly frustrating predicament, the United States extracted comprehensive treaties from Cuba and Mexico, but both governments were either unwilling or unable to carry out their treaty obligations.36

The French bear mentioning. While the British were split as to the merits of Prohibition, the French were of one mind as to its stupidity. The French Ministry of Foreign Affairs gave their assent to a treaty during the ‘one-hour sailing’ wave of 1924, but ratification languished in the

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34 Okrent, Last Call; Jones, The Eighteenth Amendment and Our Foreign Relations; Spinelli, Dry Diplomacy.
35 In a study in ‘sensitivity to initial conditions,’ one account holds that the one-hour idea was a minor suggestion offered as an afterthought in Anglo-American negotiations. In principle, it would have strengthened enforcement against speedboats and swifter craft; in practice, it gave the enforcers headaches. In a familiar bureaucratic predicament, precedent becomes process, process becomes procedure, procedure becomes policy, policy becomes entrenched in publications, and only catastrophe can force the system go back and fix the precedent. Jones, The Eighteenth Amendment and Our Foreign Relations.
36 Ibid.
legislature until 1927. While French-flagged vessels played little role in the rum trade, the
French holdings of St. Pierre and Miquelon played a major role. As a testament to the extent that
rum reshaped the small islands, discarded liquor crates provided plentiful building materials –
these ‘Cutty Sark houses’ remain a tourist attraction.\textsuperscript{37}

Whether the French could have policed the massive liquor warehouses on the island is
questionable; it is certain that they had neither the interest nor the inclination to do so until late in
the case. American diplomatic protests were not worth fraying relations with the heretofore-
impoverished fishermen of the island. That said, Anslinger of the Division of Foreign Control
reports a “180 degree” shift in the French willingness to cooperate around 1928,\textsuperscript{38} and the island
hosted an American consulate by 1935.\textsuperscript{39}

In 1926, core-periphery tensions caused the United States interagency and the British Empire
to re-configure their relations with each other. On the American side, the tensions of
enforcement drove a wedge between the Coast Guard’s operators, who tended to push the rules
in order to determine their limits, and the diplomats of the State Department, who tended to
shepherd political capital much more conservatively. The Coast Guard aggressively employed
domestic statutes, with the support of the Department of Justice; these caused problems for the
State Department in their negotiations with the British.

The British, conversely, found it difficult to reconcile three contradictory objectives from
three different factions of empire. First, the United Kingdom’s trade-driven economy relied on
good relations with the United States, and strong anti-smuggling enforcement seemed the best
means to that end. The debts of the Colonial Office, placed their interests squarely in the camp

news/saint-pierre-and-miquelon.
\textsuperscript{38} Division of Foreign Control Memo, RG 26, NARA.
\textsuperscript{39} Waesche memo, 1938, RG 26, NARA.
of the rum smugglers, and ‘wet’ excursions opened up the otherwise impoverished British West Indies to tourism. The Canadians were torn in both directions. While they were making money off of rum-running, they were themselves struggling with liquor smuggling; while they needed positive relations with their southern neighbors, they could neither afford to be seen as an American fiefdom.

The British Empire could not be simultaneously wet, dry, and nuanced, so the different factions pursued independent policies. In April 1926, the British Foreign Office intimated that the United States should take up issues pertaining to Canadian rum running with the Canadians themselves. Over the course of three conferences in the next two years, the United States and the Canadian government deepened intelligence sharing and liaison relationships. The ‘reverse rum row’ hovering off of Nova Scotia was particularly was helpful toward this end – rum-runners discovered that it was cheaper to smuggle rum than to pay the Canadian excise taxes, so in a strange turn of events, American alcohol was smuggled northward. By the end of the case, the peer-to-peer relationship between American and Canadian suppressors was stronger than their respective relations to their own diplomatic corps.

This partnership is best expressed in the relationship between the USCG Intelligence Office and Nova Scotia’s ‘H’ Section of the Royal Canadian Mounted Police. Both organizations were national entities tasked with solving corruption-ridden regional problems, and organizations had a strong paramilitary culture. This relationship began through these conferences and with a rapprochement between Commander Root and his Canadian equivalent in ‘H’ Section. Root

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40 Spinelli, Dry Diplomacy.
41 Jones, The Eighteenth Amendment and Our Foreign Relations. Also Spinelli, Dry Diplomacy. They were, glad to “sit back and let Canada take on the burden.” 129.
42 Okrent, Last Call; Kobler, Ardent Spirits; Willoughby, Rum War at Sea. Also RG 26, NARA.
43 RG 26, NARA.
fielded a Canadian complaint about territorial violations, and struck up a quick professional friendship with his counterpart. This partnership grew over the next two or three years through reciprocal acts of aid and restraint. To demonstrating the strength of this bond, cryptography was the crown jewel of the Intelligence Office; while the Coast Guard was reticent to share these techniques even with the Prohibition Bureau, the office sent an expert to instruct a short course for the RCMP under the auspices of the State Department.\textsuperscript{44} In the early 1930s, the RCMP operated SIGINT technology\textsuperscript{45} on loan from the Coast Guard.\textsuperscript{46} By the end of the case, the two forces were so well coordinated that a US Coast Guard vessel in hot pursuit could hand off their target to a RCMP vessel across common radio channels.\textsuperscript{47}

The major exception to this trend of late US-Canadian cooperation was the \textit{I'm Alone} case. An American cutter chased this known rum-running ship from within the 12-mile limit well into the Gulf of Mexico. The initial chasing cutter, having kept sight of the vessel throughout, claimed ‘hot pursuit’ and handed the chase off to a second cutter. This second ship soon opened fire on the \textit{I'm Alone}, sinking her and killing a number of her crew. Since this was a Canadian-flagged vessel, it generated great friction between the two governments – the press on both sides of the border portrayed the Coast Guard as trigger-happy and clumsy.\textsuperscript{48} The Canadians pressed for reparations for vessel and crew, and the case languished in court for years. Eventually, Elisebeth Friedman presented cryptographic evidence that the ship was operated by an American crew for the purposes of rum smuggling, and therefore could not claim the protection of the

\textsuperscript{44} Ibid.
\textsuperscript{45} A steerable loop-antenna radio direction finder, used to fix rum-runner transmission bearings.
\textsuperscript{46} Ibid.
\textsuperscript{47} Ibid.
British flag under the Anglo-Canadian-American rum laws.\textsuperscript{49} The two governments ended the case quietly with a small American payment for damages to the Canadian flag.\textsuperscript{50}

The League of Nations offered to help fight smuggling in late 1928. Noting, “we have no official communication with the League because we are not a member,”\textsuperscript{51} Coast Guard leadership sent a cordial response through back channels. Nothing came of this.

The British West Indies was another matter entirely. The crown administered these holdings more directly, and therefore any interaction with these possessions was mediated through the British Foreign Office. Where the Canadian-American partnership was built on tacit knowledge and trust exchange between operators, the relationship with the British West Indies was more formal and diplomatic. It was also less effective.

There was no force equivalent to the RCMP with which to talk, and the economic incentives of the Bahamas and British Honduras would have likely deterred deep cooperation anyways. Nassau was so notorious as a rum port that local administrators calibrated the port clearance costs to compete with St. Pierre – a lesson learned through experience, after excessive bribes shifted smuggling business to the French colony.\textsuperscript{52} Still, conferences between the British and the United States gave the Coast Guard’s Intelligence Office and the Prohibition’s Division of Foreign Control access to valuable information. They would provide the British Consuls names of suspected rumrunners, and the British would alert them when these vessels would file clearances out of known rum ports.

Canadian and British domestic enforcement provided the death-knell for open cross-border

\textsuperscript{50} Ibid.
\textsuperscript{51} Root Memo, RG 26, NARA.
\textsuperscript{52} Okrent, Last Call; Willoughby, Rum War at Sea.  Also RG 26, NARA.
liquor smuggling. The Canadian government progressively increased restrictions on southbound liquor exports at American behest ever since the Gundy Ruling. Following that ruling, Canadian-flagged rum-running vessels used flimsy legal fictions to cover their actions. Ships would clear with two manifests - the outbound manifest would list a full cargo of liquor for points south, often Cuba, while the inbound manifest depicted a ship in ballast. Upon unloading in Rum Row, the crew would destroy the first manifest and return home empty using the second. The Canadian parliament put an end to this practice with a 1930 anti-smuggling act. Vessels exporting liquor were required to offered a bond payable upon their return with the presentation of a certificate of unlading from their registered destination. St. Pierre was a beneficiary of this bill, as the islands continued to offer liquor-laundering services, and a Canadian landing there produced a legal sales certificate.

Great Britain began to sour on its colonies’ rum trade as well. Liberal MP Isaac Foot offered a bill in 1930 would cancel the registration and licenses of any vessel or crewmember that engaged in liquor smuggling. As the United States tired of Prohibition, the British Empire tired of the increasingly lawless and dangerous rum smugglers.

Since the British had the economic and political might to oppose the United States on unilateral seizures, the United States was forced to placate them with concessions and voice opportunities in the American policy-making process. The same did not hold for Central American powers. The Coast Guard records a number of captured rumrunners with Honduran,

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53 Willoughby, *Rum War at Sea*; Okrent, *Last Call*; Spinelli, *Dry Diplomacy*.
54 Okrent, *Last Call*; Jones, *The Eighteenth Amendment and Our Foreign Relations*; Spinelli, *Dry Diplomacy*. Also RG 26, NARA.
55 Okrent, *Last Call*; Spinelli, *Dry Diplomacy*.
56 I cannot find evidence of this bill’s passage, so I assume it was defeated, but it was opened to debate by a majority of Parliament. Jones, *The Eighteenth Amendment and Our Foreign Relations*. Also period newspapers.
Panamanian, Nicaraguan and Costa Rican registrations.\textsuperscript{57} Since the United States had a boarding treaty only with Panama, it is unclear whether these captures were a result of vessels straying inside three miles\textsuperscript{58} or a testament to the general license taken toward Latin America during this period.

As in the slave trade suppression case, hegemons reserve unilateral prerogatives for themselves. When the costs of coordination are high, and when the opposing power cannot inflict countervailing pain, they are apt to use these prerogatives. A simpler explanation may suffice, though – these may have been fraudulent registrations, as at least one historian does not find it credible that Honduras had port facilities capable of supporting these sorts of vessels at the time.\textsuperscript{59}

Following repeal, there was little argument for providing any sort of legal cover to rumrunners. This, along with the Great Depression and the trade wars surrounding the Hawley-Smoot Tariff, changed the diplomatic landscape. Rumrunning ran counter to the \textit{zeitgeist} of these lean times, robbing the government coffers in order to provide a non-essential good.

Since weightier matters occupied international attention during this period, the United States asserted an expansive right to seize hovering vessels in the Anti-Smuggling Act of 1935. This bill created a ‘Customs Enforcement Zone,’ extending to 50 nautical miles or farther in some cases.\textsuperscript{60} The law also included a long-requested ‘equipment clause,’ to borrow a phrase from slave trade suppression. This declared that a ship with smokescreens and other smuggling-

\textsuperscript{57} Capture records, RG 26, NARA.  
\textsuperscript{58} Unlikely.  
specific signature equipment in an enforcement zone constituted intent to smuggle and therefore grounds for action. The Coast Guard put these expanded powers in ending the last major wave of rum running during 1935-1936.

Diplomatic Wrap-up. The trajectory of diplomacy during this case parallels that of the British during Slave Trade suppression. Both were attempting to gain control over a commons from a position of strength, though the American diplomatic effort was clearly more half-hearted than the British Foreign Office during the Slave Trade. Upon encountering friction from foreign powers, the United States relented and pursued a network of right of search treaties. Once this framework was established, a Supreme Court case provided a unilateral option once again; American policymakers used this option against Cuba and Central America, but generally preferred low-level collaboration and conferences.

The campaign similarly left its mark on international law; though not as dramatic as the British boarding treaty network’s international courts, the United States advanced the norm of a 12-mile territorial sea and a much larger customs enforcement zone beyond that limit. In one unique twist, these same tensions accelerated changes in the internal dynamics of the British Empire – London passed the buck to Ottawa on northern Prohibition enforcement, emboldening Canadian PM Mackenzie King’s independent tack.

In both cases, the suppressor began with law enforcement at home, and then pursued a unilateral border security approach. This was followed by sanctuary state engagement through bi-lateral or multi-lateral frameworks. Finally, the suppressor reserved the right for renewed unilateral action if these frameworks failed to achieve their goals, but generally preferred the

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61 Legal analysis of law. RG 26, NARA.
stability and economy of these partnering approaches.

Altogether, we find that suppressors are drawn into interactions with any state that provides sanctuary to the illicit market. As the operational script predicts, it was far easier to use law to shut down overt or grey market participation in illicit activities than to attack covert black markets. Since the grey markets are generally more efficient and allow for higher production volume, it remains important to shut down these markets and their sanctuaries.

Supporting the organizational script, the most effective partnerships were lateral *ad hoc* conversations between operators. The refresh rate in a formal treaty process is far slower than the adaptation rate of a grey market. Moreover, formal laws leave a great amount of room for tacit interpretation and/or exploitation. In the next chapter, we will see the jailhouse lawyers of the rum fleet and the sea cabin lawyers of the Coast Guard battle over this space. This lawfare devolves into a game of ‘legal chicken’ at times, with both sides daring the other to offer a seizure-worthy offense or offend public sensibilities, respectively.

As with the Slave Trade case, an enterprising captain formalized this maze of laws for his compatriots. Commander Stanley V. Parker, an aviation pioneer, cutter captain at the time and future chief of Intelligence, compiled the *United States Coast Guard Boarding Manual* in 1931. 63 He collaborated with the Chief of Intelligence at the time, Commander Frank Gorman, in order to simplify these legal resources and maximize options for seizures. It also streamlined the seizure process and prevented mistakes that might be used by a defense attorney. The manual was more repertoire than flowchart; by cataloguing the best options, captains could make best use of their initiative.

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The organizational script looks to support as well as efficiency, and diplomatic progress tracked closely with the reservoir of public support available. Political will existed around 1925 to bargain for broader rights in adjacent seas. As with the British ‘ratchet’ approach, precedents from one treaty were used to facilitate others. Following this mid-decade push, the diplomatic effort made do with conferences. Only after repeal, when political will was replenished, was the United States able to re-assert its preferences in this diplomatic space.

The diplomatic trajectory of this case supports both the operational and the organizational script. We have surveyed the attempt to shut down sanctuary abroad using laws. We now proceed to the Coast Guard’s efforts to shut down sanctuary off the coast using force.

**Narrative: Advantage Coast Guard, 1920-1926.**

Both the ‘wet’ and the ‘dry’ fleets experienced their highest highs and lowest lows during the first half of the Rum War. From 1921 until 1923, rumrunners utterly had the upper hand. Ironically, their success changed the demographics of their trade, as hijackers preyed on the row, and syndicates formed for protection in response. The “honest lawbreaker” Bill McCoy soon found himself a stranger to the increasingly dangerous Rum Row of his creation. 1924 was the absolute peak of rum running during the case, but also the turning of the tide – the magnitude of the problem led to the sacking of the Prohibition maritime contingent and the enlistment of the Coast Guard.

The Coast Guard built a fleet designed to undo Rum Row, and this they did – the number of ships off the coast sharply dropped in 1925 and continued to decline until 1929 at the earliest. By that point, the rum trade re-booted as a black market, first moving to Florida, then to the Great Lakes, and then returned to New York in a new stealthy, networked form. We will explore

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the destruction of the Rum Row grey market off of New York in the remainder of this chapter, and in the next we will explore both sides’ adaptations in the black market that dominated the remainder of the case.


Bill McCoy, a tee-totaling yacht builder with an abortive two-year smuggling career, popularized large-scale maritime liquor smuggling as early as 1921. Since American territorial integrity only extended to three miles off shore, a foreign ship could theoretically legally anchor just outside of the three-mile limit and offload liquor to a menagerie of waiting small craft.65 The ships of Rum Row ran from of the base of Nassau in the Bahamas and of the French islands of St. Pierre and Miquelon off Newfoundland.66

The informal community of Rum Row allowed various rumrunner practices to diffuse rapidly, and there were relatively few problems with predation until several years later.67 This notwithstanding, the cutter Seneca arrested McCoy in international waters in late 1923.68 After pleading guilty and serving a brief stint in prison, McCoy elected not to return to Rum Row. According to his autobiography, by the time of his release a few months later, the Row’s profits had attracted an unpleasant combination of syndicates and hijackers.69 Rum Row had become a blatant public affront to the 18th Amendment and demanded a public response.

The Leaky ‘Dry Navy,’ 1922-1924.

“Several members of the discharged crew of the Hansen, the last of the Prohibition

65 Okrent, Last Call.
66 Ibid.; Okrent, Last Call.
67 Ibid.
68 Water, The Real McCoy.
69 Ibid.. RG 26 NARA Intel Reports record rumors of McCoy exploring renewed smuggling options in the late 1920s, but no confirmation that he actually did so.
Navy ... said that they were not paid their wages and for that reason were compelled to make money by bootlegging.” - New York Times, 1924.70

The Prohibitionists’ instinctual response to Rum Row was to task the problem to their fully-owned government subsidiary, the Bureau of Prohibition. In order to do so, they cobbled together motley crews from Navy veterans and Prohibition officers, and placed them aboard nine sub-chasers transferred from the Coast Guard with the authorities of Customs Officers. Fielded in the spring of 1922, this force was almost entirely ineffective.

By 1923, the government was shopping for a new force to suppress maritime smuggling, with an eye to the Navy. After the Attorney General issued an opinion that the presence of Rum Row did not justify waiving posse comitatus, the task fell to the Coast Guard.71 The ‘Dry Navy’ of the Prohibition Bureau was dissolved in 1924 as the Coast Guard assumed the task.72

Grey Market Innovation. Innovation is not solely the province of the black market – so long as the grey marketplaces remain open, they serve as tacit echo chambers for innovation. These innovations, in turn, reduce the risk of using known focal points. For instance, the denizens of a marketplace might tacitly coordinate a going rate for bribes or a series of disguises that might allow them to do business without contracting with a formal illicit network. In order to shut the grey market down, the suppressor must swamp these marketplaces before they can innovate themselves back open. The Dry Navy was unable to cause this catastrophic collapse, whereas the initial Coast Guard assault on the row managed to do so.

70 “VAST RUM RUNNING BAFFLES OFFICIALS; Prohibition and Customs Men Try to Find Scheme to Halt Activities.,” The New York Times, January 20, 1923, http://query.nytimes.com/gst/abstract.html?res=9D07E6DD1231E333A25753C2A9679C946295D6CF. To make matters worse, according to the article, customs agents performed the labor of chasing rum-runners, and the prohibition bureau claimed the credit.
71 In a telling speech to Navy comrades, a senior Coastguardsman argues, loosely, ‘you dodged this bullet, and if we fail, it will fall back to you, so you should support us.’ RG 26, NARA.
72 “VAST RUM RUNNING BAFFLES OFFICIALS; Prohibition and Customs Men Try to Find Scheme to Halt Activities.”; Willoughby, Rum War at Sea.
Rum-runner Tactical Adaptation. In September 1922, rumrunners responded to the ‘Dry Navy’ with large numbers of new ships. According to a New York Times headline:

Big Call Springs up for Fast Rumboats; Shipyards deluded with Inquiries for 75-Foot Craft of High Speed; Little Effort at Secrecy.\(^{73}\)

The Prohibition Navy was a fixed target – less than a dozen ships with a known a performance of fourteen knots. Innovating around this obstacle was straightforward – make large numbers of ships that go faster than fourteen knots. The Times again:

Some of the inquiries received by shipyards are very interesting, especially in view of the fact that the writers do not attempt to conceal the business in which they intend to engage if satisfactory boats can be had. For instance, one writer from a Southern port asked a shipyard repairman near New York to quote him prices of three or four boats capable of making sixteen miles an hour or more, and remarking that the Government boats in that section have a speed of fourteen miles an hour, and he wanted to outdistance them in case he was pursued.\(^{74}\)

Chief Appleby of the Dry Navy did not seem to grasp the problem, retorting “we expect to get several more of the rum-running vessels within the next few days, and if the bootleggers expect to keep their fleet up to its present quota they will certainly have to buy more boats in the very near future.”\(^{75}\)

This was both true and irrelevant to his larger objective of suppression. The suppressor does


\(^{74}\)Ibid.

\(^{75}\)Ibid.
well not by capturing ships, but by shocking the network through attacking critical nodes, bogging down the network, and locking out entire smuggling business models. Otherwise, constant and predictable attrition becomes just another cost that can be incorporated into the balance sheet. Moreover, it becomes a cost that can be minimized – if you know that the Dry Navy is going to exact a relatively constant number of captures, then you build cheaper ships.

[Rumrunners made] new schemes for putting out the speed boats at small cost. This is accomplished by the use in boat hulls of automobile engines costing from $10 to $100. Marine engines capable of doing similar work with a corresponding high rate of speed would cost $500 or more.76

While automobile engines were likely to break down far sooner than marine engines, they could be bought ten-to-one and would last long enough to pay for themselves several times over. This was a relatively simple innovation, but it seemed not to register with the Dry Navy. In these ways, the rum fleet continued to occupy Rum Row despite the efforts of the Prohibition Navy.

*Personnel and Acquisitions.* The failure of the Prohibition Bureau’s maritime arm is overdetermined. There was no appreciable organizational culture or heritage, as the unit was composed of a mish-mash of new hires and different organizations. Its charter documents fail to clearly explain how the fledgling organization fits into the larger federal Prohibition patchwork, and the authorities governing the members of this organization are similarly unclear. Lawfare was a major part of the Rum War, and a force that barely understood their own founding authorities was unlikely to fare well in court.

Their hardware was equally hamstrung. First World War sub-chasers were built quickly and

76 Ibid.
often sloppily, and this force received the sub-chasers that the Coast Guard did not want.\footnote{The Coast Guard, in turn, generally received the sub-chasers that the Navy did not want.} Moreover, nine ships were far too few to counter the three hundred major rum vessels and their flocks of supporting small craft. In a January 1923 account, rumrunners adopted swarming tactics against this small fleet, accepting $100,000 in seizures in order to get “whiskey worth millions” ashore in Highlands, NJ.\footnote{The Associated Press., “GET 4 RUM BOATS; MISS 35,000 CASES; Dry Agents Seize $100,000 Cargo, but Whisky Worth Millions Lands at Highlands, N.J.,” \textit{The New York Times}, January 12, 1923, http://query.nytimes.com/gst/abstract.html?res=9A01E6DE1231E333A25751C1A9679C946295D6CF.}

Ill-considered personnel polices completed this gloomy triumvirate of causes. The ‘admiral’ of this Rum Fleet hailed from the Prohibition Bureau, but a Coast Guard officer was tasked to structure the force and re-fit its craft.\footnote{This officer, Commander Jack, comported himself well later in the Florida and California Campaigns.} The crews were assembled from amongst merchant mariners, naval veterans, and passersby willing to accept a paycheck.\footnote{“Lieutenant Jack, ‘Admiral’ of the Dry Navy, Lifts His Masthead Above Publicity Horizon,” \textit{The New York Times}, March 28, 1922, http://query.nytimes.com/gst/abstract.html?res=9A03E6DD1639EF3ABC4051DF8568389639EDE; “‘ADMIRAL’ SELECTED FOR NEW DRY NAVY; Lieut. R.L. Jack Loaned by Coast Guard to Organize Ocean Patrol Service.,” \textit{The New York Times}, March 17, 1922, http://query.nytimes.com/gst/abstract.html?res=9805E5DF1639EF3ABC4F52DF85668389639EDE.} Crews held some powers as Customs Officers for boarding at sea, but they were not under the Customs Bureau; the personnel system was built along military lines, yet this was a civilian force. In organizational culture alone, it is unsurprising that such a force would have trouble finding its footing.

To make matters worse, this cobbled-together force presented a myriad of avenues for corruption to enter the system. Sloppy hiring practices created crucial vulnerabilities – mariners in rumrunning hotspots were likely to have friends in the trade. The lack of shared traditions further eroded the possibility of social accountability or trust inside the organization. The force gained a bad reputation for corruption, which seems unsurprising, given that both the son and son-in-law of Prohibition Navy ‘Admiral’ Levi Nutt served as lawyers to arch-bootlegger Arnold...
Rothstein. All of this transpired upon the backdrop of the Prohibition Bureau as a whole, who did not even require standard civil service examinations for its officers until 1927.

Theory: Flattening vs. Getting Flattened. Abstracting from the case, the failure of Prohibition’s maritime arm demonstrates the problems inherent in institutional genesis and organizational flattening. An adaptive organization must flatten out without falling apart — trust networks and shared mission-driven identities allow innovation without inviting corruption.

A trust network generates relational surplus, and while a mission-focused network applies these resources to the larger organizational purpose, a self-focused network accrues these benefits to the personal purposes of the member. Therefore, trust-based networks do well to have some sort of entry signaling strategy to determine difference in the motivations of would-be members. Crucibles serve this purpose well, hence the difficult qualification courses for Special Forces. Alternately, an integrity gut check — John Boyd’s classic ‘to be or to do’ speech — signals what someone is likely to do if freed from bureaucratic shackles. These one-way filters help ensure that the right sorts of people get into the trust space.

If anything good can be said for the Dry Navy, they were certainly not bureaucratic. But in avoiding Scylla, they set a course straight for Charybdis — there was neither the competence nor the integrity required to safely flatten their organization. Corruption is an intrinsic danger in building spaces for market-like structures within an institution. This is true for soft corruption — nepotism, graft, and ‘old boy networks’ — as well as the more direct forms. The Prohibition Bureau had all of the above.

Budgets and Coast Guard Expansion, 1924.

Commander Root, USCG Intelligence Officer: “From what has just been said it should be apparent that: The enemy is engaged in open and organized warfare on the Constitution, he is practically unhampered in his operations by this or any other Government, [and] he is introducing to this country at least 100,000 cases per month by way of the Atlantic and Gulf Coasts.

In considering this matter, the prohibition feature or liquor question should be eliminated from the mind. Were the traffic confined to diamonds, for example, its bad effect would be the same. Nonenforcement of the law is bringing the National Government and the very Constitution itself into contempt, and, what is almost equally bad, is causing an ever-increasing flow of money into the coffers of the underworld. This money is being used to finance all sorts of criminal ventures, and is, I believe, one of the prime causes of the increase of crime.”

Rep. Gallivan (from the ‘wet’ faction): “Who is saying this?”

Commander Root: “I am saying this.”

- Congressional Hearings on Coast Guard Expansion, 1924.

The Coast Guard enjoyed a major increase in Congressional appropriations as it took over most responsibilities for suppressing liquor smuggling. Managing this expansion required a major overhaul of the service’s personnel and acquisitions strategies, along with an entirely new operational doctrine. Remarkably, the institution managed these changes without falling prey to the sorts of issues that befell the Prohibition Bureau. Even more remarkably, the Coast Guard

84 Extract from Hearings before the Committee on Appropriations House of Representatives on First Deficiency Appropriations Bill, 1924. 25 Feb 1924 (GPO, 1924.)
became more adaptive and flatter in the course of getting bigger.

While the Revenue Cutter Service existed from the first days of the republic, the Coast Guard was still a relatively recent invention in the 1920s. The Coast Guard Act of 1915 established the service by merging the Revenue Cutter Service and the Life Saving Service. The two institutions had a longstanding relationship, but any such merger involving different personnel systems and promotion pathways involves contentious debates about equivalencies between systems. These issues emerged from time to time over the course of the case, but the Revenue Cutter Service was clearly *primus inter pares* and formed the backbone of the fledgling Coast Guard. Therefore, the institution had a long history, including its own service academy dating back to 1876. This common culture and these deeply integrated deep webs of relationships provided a strong foundation for trust within the institution.

The Coast Guard cut its teeth in the First World War, guarding convoys, serving as military crews on merchantmen, and providing port security. Much of the Rum War force had some sort of combat experience during the Great War – the Commandant, Admiral Billard, earned a Navy Cross for his command of a patrol vessel during the war. The Coast Guard serves in the Department of the Navy during wartime, so the service generally acted as an adjunct to naval operations.

As demonstrated by Coast Guard leaders’ oft-repeated ‘anti-smuggling, not pro-Prohibition’ refrain, the force had little interest in throwing in their lot with the ‘dry’ forces. As described by one Coast Guard officer: “The motive is not popular [in the country… this is] a

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85 Documents in RG 26, NARA, describe the frictions inherent in any such merger – the Revenue Service was the core of the merger, but Lifesaving Service boatswains wanted to ensure their place remained and complained of favoritism.
87 RG 26, NARA, Speeches by Billard, Parker, others.
job that no one, or very few want.” The same officer expected to receive “equipment neither adequate nor acceptable, but accepted through an honest sense of patriotism by a service which has ideals which are not the current vibrations of the country at large, [against] the power of money on the opponent’s side.” It would also involve “emergency enlargement of a military personnel to fight a battle that is not popular, at least with the element from which the personnel is secured… The personnel will be temporary, questionable and foreign to any conception of what ‘Semper Paratus’ means.”

Still, the Rum War gave the Coast Guard an opportunity to come into its own. Rum Row was clearly a maritime law enforcement issue and therefore clearly in the Coast Guard’s wheelhouse. These combat veterans were ready to fight an enemy, and service leadership used military words to describe smugglers from the outset. The service used the terms ‘rum fleet’ and ‘rum forces’ long before smugglers coalesced into syndicates; Coastguardsmen referred to rum-runners as the ‘enemy,’ implying a command structure and a uniform identity, even though this was not true at the outset. On these terms, the Coast Guard engaged the campaign.

The explicit agnosticism about liquor was somewhat contrived – the distinction between the transit of contraband and the content of contraband escaped reporters and the general public, as a war on contraband during Prohibition was by necessity a war on rum and therefore a war in support of the laws which made rum into contraband. But it was a useful distinction on two counts – first, the Coast Guard was far from a dry service, but it was a professional service, so appealing to service was a better tack than arguing about the evils of alcohol. Second, this

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88 Complaint to Billard or Reynolds. 1924(?) RG 26, NARA.
89 Ibid.
90 Always Faithful, the USCG motto.
91 Ibid.
92 RG 26, NARA, especially Root’s intelligence reports.
rhetorical division allowed the Coast Guard to decouple itself from the probable failure of the ‘dry’ campaign in the eyes of Congress. It is quite possible, though, that the Commandant truly believed in this institutional synthesis in order to whole-heartedly embrace a controversial task. 

_Personnel System._ Returning to the Coast Guard expansion, people are the first and most important aspect of organizational change. The Coast Guard was a very small organization during this campaign by contemporary standards – over the course of the 1924 expansion, the service tripled the size of the enlisted force, to a total of twelve thousand men. Still, this was less than 10% of the size of the Coast Guard during the Second World War, and less than one third the present size of the force. In order to man the newly increased force, the service graduated a class from the Coast Guard Academy one year early; even then, the officer corps barely topped three hundred. This size was more a strength than a limitation – while quantity has qualities all of its own, not all of those qualities are good.

Even with the expansion, the members of the Coast Guard officer corps were bound to each other through deep social networks developed over decades of shared relationships and experiences. This was still a force small enough that most members knew each other personally. They also shared strong group identity and narratives. Therefore, members of this corps shared strong foundations for trust. This would prove important over the course of the Rum War, given the opportunities for corruption and the need for organizational flattening. While the Prohibition Bureau was notoriously corrupt, I know of no incidents of corruption in the Coast Guard officer corps.

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94 Willoughby, _Rum War at Sea._
corps after they took on the anti-smuggling mission in 1924.95

The warrant officer and senior enlisted corps had the same mean as the officers, but their
standard deviation was much higher – under eight percent of these corps accounted for half the
service’s capture total, but these aces contrasted sharply with a clique of corrupt ‘six-bitter’
captains.96 On one hand, the most effective members of the Coast Guard fleet, in terms of
captures, came from the warrant officer and senior enlisted ranks.97 Chief Boatswain’s Mate
Hagglove, previously of the Lifesaving Service, topped the list with an impressive 47 captures.98
Boatswain A.C. Cornell, formerly a Lieutenant Junior Grade in the Navy,99 earned a reputation
by capturing 10 major rum ships. His most notable capture was the Black Duck, during which he
opened fire and killed several of the boat’s crewmembers. His vessel, the CG-290, exploded at
its moorings shortly thereafter, injuring Cornell and several members of his crew; this was
generally assumed to be an attempt on the part of rumrunners to return the favor.100 We will
discuss both further in the next chapter.

On the other hand, however, these corps included a large number of new hires from the
general maritime community. While corruption in the Coast Guard was never as acute on any

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95 This incident is itself suspect, as it remained unproven; since this investigation was driven by anonymous reports,
USCG Intel suspected these reports were a framing attempt against an effective officer from rum-runners, who were
known to use tips in this manner. RG 26, NARA.
96 Capture List, RG 26, NARA.
97 This is not an entirely fair comparison, as officers were concentrated on cutters, and these tended to share the
credit for captures amongst their large crews; also, the cutters were typically making larger captures. Still, all
Coastguardsmen with 10 or more recorded captures were Bosuns and Chiefs: J.T. Hagglove, 49 Captures; W.E.
Long, 22 Captures; Clyde Gobel, 18 Captures; H.E. Wilber, 17 Captures; W.J. McGaw, 13 Captures; Murry Day, 11
Captures; A.C. Cornell, 10 Captures; A.C. Gross, 10 Captures. RG 26 Capture List, NARA, Excel Dataset available
on request.
98 These were mostly in his picket boats, CG-2244 and CG-2245, and all in the Lakes region. He would go on to
serve with distinction in the Second World War as a beach master during amphibious landings in the European
Theater. RG 26 Capture List, Data available on Excel.
Corps, Also Including Officers of the United States Naval Reserve, Active, Marine Corps Reserve, Active, and
Foreign Officers Serving with the Navy (Govt. Printing Office., 1919).
100 New York Times, December 30, 1929.
level as in the Prohibition Bureau, a number of surfmen entered rum running after leaving the Coast Guard. The boatswains’ corps suffered most severe corruption problem.

Bosuns would command a seven-man patrol vessel or a similarly sized lifesaving station. As opposed to an officer, who served in the company of other officers on a cutter or a destroyer, a corrupt bosun could consolidate control of his charge without much fear of reprisal or reporting. In the most egregious example of this corruption, rum kingpin ‘Big Bill Dwyer’ could reportedly call on four Coast Guard patrol boats for the protection of his shipments (or the interdiction of competitors.) Apparently, a Boatswain Olsen served as mole and recruiter, consolidating control of one crew at a time by setting up compromising situations and using them as leverage.

In general, though, the Inspector General’s office kept these sorts of issues in check. An anonymous ‘Wet Admiral’ testifies to this in a 1925 interview with the Independent:

Six months ago we weren’t worrying. We could run circles around the few Coast Guard cutters being used and we never worried about the old dry navy which was prohibition agents navigatin’ [sic] in submarine chases. They were reasonable. But you can’t do business with the Coast Guard. I only know of one instance where a rummie ever got to a Coast Guardsman. We can buy local protection were we unload and travel overland… Now, a friend of mine has got a thousand cases of rye out on the Row. He figures $35 a case net profit. With $10,000 in cold cash it would seem as though you could buy some Coast Guard captain to take his crew somewhere out of the way on a fake trip – but it hasn’t been done yet.

101 Reports from RG 26, NARA.
102 Reports in RG 26, Kohler, Ardent Spirits. 265.
103 Moore, Samuel T. "'Don't Give Up the Rum Ship.' How the Admirals of the Rum-Running Fleet Accept the Coast Guard Challenge." The Independent 114, No. 38 (Jan 17, 1925), pp. 67-71.
By the numbers, as of 1928, no commissioned officers or regular warrant officers “have been convicted… for offenses involving misconduct… in preventing the smuggling of liquor… since the Coast Guard was assigned this duty.”\textsuperscript{104} Seven temporary warrant officers, eleven permanent enlisted men and 25 temporary enlisted men were involved in these offenses. All temporary warrants and temporary enlisted men were newly hired during the expansion.

\textit{Theory: The Leader-Linker-Watchdog Triumvirate.} Three truly remarkable officers who played a major role in this expansion and everything after are worthy of particular note. First, Admiral Billard was a fortuitous choice for commandant during this period. Since he was both popular and personable, he represented the institution to outsiders effectively, and adjudicated internal disputes quietly. He avoided the classic failure of micro-management during the course of the case. As a leader within the service, he was more of a convener than a director, and defused a number of intra-service squabbles by appealing to common identity while calling the factions to arrive at a mutually acceptable policy.\textsuperscript{105} Most importantly, he created a culture of collaboration in the service, and ensured different functions could co-exist by guaranteeing a flow of resources through his public and political battles.

Second, Billard selected an excellent intelligence officer in Commander Charles S. Root. Where Billard primarily played an outward-facing role, arguing in the public square for resources, Root served as an honest broker between the officers of the Coast Guard and a liaison with interagency and international partners. To use a contemporary analogy, Root was the McChrystal to Billard’s Petraeus. He was a remarkable individual – he was trained as both a professional engineer and as a lawyer, and earned a Lifesaving Medal for heroic actions at sea. He seemed equally at home inventing direction-finding systems or cryptographic techniques,

\begin{footnotes}
\item[104] RG 26, NARA.
\item[105] This is demonstrated by a multitude of brief memos from Billard, RG 26, NARA.
\end{footnotes}
delivering legal opinions on law of the sea or pending treaty negotiations, fielding tactics improvement suggestions from lieutenants in the field, and running human intelligence networks in Cuba and Canada.\textsuperscript{106} Despite these diverse equities, he preferred to keep a low profile; the secrecy of his post as Intelligence Officer allowed him to do so.\textsuperscript{107} Until his untimely death at the hands of a Washington cab driver in 1930, he personally served as the intelligence and tactical fusion node of the Coast Guard’s effort.

Captain William Wheeler, who would serve as Inspector General (IG) for the latter half of the case, provided a stark contrast to Root’s role as quiet broker.\textsuperscript{108} Like Billard, he earned a Navy Cross in the First World War; unlike Billard, he gained a reputation amongst his peers as a “bull in a china shop.”\textsuperscript{109} Given the persistent threat of corruption, the IG had need of a bulldog during this period, and Wheeler played that role well. Without some sort of accountability, flattening an organization invites corruption; the fact that the Coast Guard was able to flatten itself amidst a severe corruption threat speaks to the effectiveness of Wheeler’s work as Inspector General.

There is a natural tension between the organizational flattener (Root) and the watchdog (Wheeler) in these sorts of situations – the former seeks to work around formal structures in order to accomplish the mission, while the latter uses formal structure to prevent or punish corruption. Root and Wheeler were generally able to de-conflict their work – since both officers held comparable reputation, experience and authority, they seemed to be able to work out their

\textsuperscript{106} RG 26, NARA.
\textsuperscript{107} Ibid.
\textsuperscript{108} Inspectors general, much like intelligence officers, have trans-regional responsibilities and often report to an alternate, parallel chain of command. An intelligence officer is responsible for outward-facing surveillance - since an adversary is unlikely to respect regional boundaries, and since an intelligence officer needs to protect sources and methods, there is a strong logic for keeping some unity amongst intelligence units across regions. An inspector general is likewise performing surveillance, but over their own service; since fraud, waste or abuse might reside within the chain of command, a parallel chain is similarly useful.
\textsuperscript{109} CSR to Billard. RG 26, NARA.
differences. Billard’s ability to build a culture of cooperation certainly helped. The triangle formed by these three officers – Billard as the leader, Root as the linker, and Wheeler as the watchdog – provided an excellent team at headquarters. As opposed to the Prohibition Bureau, they were able to flatten themselves without falling apart.

In contrast to this stable triangle, Wheeler later demonstrated the dysfunction possible when these roles are not properly de-conflicted or balanced. In the early 1930s, he was given regional command of the Pacific theater. A Lieutenant Coler served as his regional intelligence officer.\(^{110}\) While clumsier than Root, this young officer pursued the same sorts of creative innovation strategies by building interagency partnerships and asking local communities for tips. Wheeler, still in his watchdog role, saw this initiative as insubordination and punished the lieutenant by forcing him to produce weekly documents justifying his office’s existence. He then used those documents to transfer the intelligence office’s personnel and assets to other tasks.

The resulting strife resulted in voluminous and largely superfluous traffic between then-Chief of Intelligence Parker, Coler, Wheeler and occasionally even the Commandant. During a period when the New York Intelligence Office was innovating SIGINT targeting tactics and applying them to great effect, the San Francisco Intelligence Office accomplished basically nothing due to this breakdown. Once the Lieutenant was finally re-assigned, he had a strong-but-not-stellar career;\(^{111}\) the fault for this breakdown seems to rest in Wheeler failing to fill the hands-off leader role, and thereby not allowing his organization to innovate.\(^{112}\)

\(^{110}\) Coler, Parker, Wheeler Correspondence. 1935. RG 26, NARA.

\(^{111}\) RG 26, NARA. Also news clippings searching on the LT’s name reveal a career as a USCG administrator during WWII.

\(^{112}\) Parker had something of a sharp tongue, and Wheeler continued to have ‘coordinating problems.’ In 1935, Treasury Secretary Morgenthau designated Coast Guard officers as regional anti-smuggling coordinators. Upon receiving complaints from Customs Bureau officials about Wheeler’s overbearing attempts to command them, Parker interceded with Wheeler, presumably on behalf of the Commandant, or perhaps due to the Intelligence
The archetypal triangle balances structural tensions. A leader who is overly concerned with formal power will find a linker a threat rather than an asset, a linker that lacks sagacity will likely find a watchdog an impediment, a myopic watchdog will see the linker as a liability creator. Matching appropriately mature and humble personalities to these roles is an essential task of the organizational architect. Failure to do so – selecting a micromanaging leader, an insurgent linker, or a sloppy watchdog - results in an organization incapable of flattening itself, one incapable of adaptation, or one vulnerable to corruption.113

Two other key players bear mentioning in addition to the headquarters triumvirate. Lead Constructor Commander Frederick Hunnewell managed the massive expansion of the Coast Guard fleet; his knowledge of naval architecture was an invaluable asset. Captain Harry Hamlet, who would later serve as Commandant after Billard’s passing in 1931, served as the commander of the service’s new Destroyer Force; as such, he led the anti-smuggling effort at the operational level. Hamlet and Wheeler disagreed loudly and publicly as to the value of the Destroyer fleet in suppressing smuggling. We will discuss these forces and tactics presently.

New Doctrine and New Ships. In response to early rumblings in 1923 about the Coast Guard taking on the anti-smuggling task, the Commandant and the service’s senior captains debated the best approach for defeating Rum Row. Out of these conferences, Admiral Billard

Office’s interagency equities. In Parker’s words: “The term ‘coordination’ is closely related to the adjective [sic] ‘coordinate’ which relates or defines a relation of things of equal standing. It is clearly distinguished from ‘subordination.’… Each agency has unique problems and experience in handling them, and it is not to be believed to be the case that the personnel of one agency is [sic] well prepared to perform the specialized functions of another.” This was a bit irregular, as Parker was a Commander and Wheeler a Captain. RG 26, NARA.

issued the *Doctrine for the Prevention of Smuggling* in 1924.\(^\text{114}\) Under the doctrine’s basic theory, high-performance cruising vessels swept out the volumes of marginal seas inhabited by the rum-runner ‘motherships.’ Large numbers of patrol vessels would then trail these ships. Inshore patrol or picket ships would intercept any contact ships that leaked through the trailing screen.

The layered defense proposed by the Doctrine remarkably resembles a modern Integrated Air Defense System; advanced, expensive platforms deter high-value platforms, while plentiful tactical systems attrite low-level craft that penetrate the outer screens. This defense had four total screens, extending leagues beyond the territorial waters surrounding the United States and working inward from there.

Farthest offshore was the Destroyer Force, tasked with sweeping, tagging and tracking rum running ‘motherships’ in international waters. These ships concentrated on the Eastern Seaboard, but made an occasional foray to the Gulf Theater. The second line of defense was the Offshore Patrol Force, composed primarily of Cutters – they also performed fluid sweeping and tracking operations. The patrol ships of the section bases served as a third row of linebackers. While much smaller than destroyers or cutters, these seven-man ships could make 15 knots and had good sea-keeping capabilities. Most importantly, they were easily mass-produced - the Coast Guard had two hundred and three of them. Finally, the two hundred and fifty three USCG lifesaving stations provided close defenses with speedboats; they also conducted foot patrols for shore rendezvous points. Harbor tugs and customs vessels provided an additional last-ditch defense in major ports.

This new doctrine went hand in hand with a massive expansion in the Coast Guard fleet.

\(^{114}\) RG 26, NARA, Willoughby, *Rum War at Sea.*
Prior to expansion, this fleet consisted of a sundry mix of cutters ranging from 19th century sailing ships to the new and advanced Tampa class. These cutters were reinforced by a motley force of tugboats and sub-chasers, many of which built in haste during the latter days of the First World War and transferred from the Navy upon the conclusion of the conflict. This fleet was unsuited to the task at hand in terms of both numbers and performance. The Coast Guard would have to build a force to defeat Rum Row from scratch.

*Policy: Acquisitions as a Cost Imposition Strategy.* USCG Chief Engineer Hunnewell understood well the reciprocal relationship between acquisitions and strategy, and pursued a cost imposition strategy. What he bought, and how he bought it, would shape his adversary’s options. He understood his adversary well: much to his consternation, his engineering peer and friend Walter McInnis was one of rum-running’s leading shipbuilders. The Coast Guard could not expect a conclusive victory through blueprints alone.

The rum-runners were not encumbered by the acquisitions cycle, and could buy a constant stream of unique, experimental vessels. However, the Coast Guard fared well at economies of scale, and could emulate successful features of rumrunner experimental designs. Hunnewell tried to get the best of both worlds through ‘ratcheting’ fleet upgrades using established rumrunner innovations. This allowed the service to free ride off of rumrunner innovation, and then beat them to the punch in large-scale implementation. In effect, the goal was to let the rum-runners work the bugs out, and then build ships *en masse* once they do, which precludes them from making use of the experimental technology and forces them to spend money on another

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115 McInnis claimed an implausible agnosticism about the end uses of his craft, as they were all purchased legally. Since he remained a builder in good standing in the eyes of the law, he also produced ships for the government. Though I cannot claim exhaustive knowledge as to this point, it seems unique that craft for both sides of a conflict would be built side-by-side in common yards over the course of the conflict. This may make an interesting study in acquisitions. Joseph et al GRIBBINS, *NAUTICAL QUARTERLY Number 3* (Nautical Quarterly, Inc., n.d.).
round of experimental ships. In his words, from a 1937 journal on Naval Engineering:

> During the time when decisions were in order regarding anti-smuggling craft to be added to the Fleet, officers responsible for operations balanced the opposing policies which would finally determine the primary elements of boat designs... This policy involved a conservative increase in the number of officers and men and a consistent expansion of the Fleet as regards number, size and speed of units. This policy compelled the smuggling interests continually to increase the cost of all the "Blacks" [Rumrunners] and still face seizure of the contact boats and cargoes; attrition of the "Blacks" and drain on profits was an overhead becoming heavier as Coast Guard co-ordination of its facilities was improved... It took several years of intensive effort by those whose profits were at stake to arrive at the "Blacks" which finally were built, and such costly speculation was not attempted by the Coast Guard.\(^{116}\)

Though a sound plan, a ‘ratcheting’ acquisitions strategy relies on constant funding streams, and this was not to be the case. The 78-foot CG-400 series of patrol boats were intended as the second wave of 75-foot vessels – six years later and eight knots faster, well adapted to the improved rumrunners that responded to the initial fleet of ‘six-bitters.’ As opposed to the two-hundred-some ‘six-bitters,’ only 6 of these ‘four hundreds’ were fielded – they filled a niche, but they were not a ‘ratchet.’\(^{117}\) That said, it seems unlikely that a different acquisitions strategy would have fared better, and Coast Guardsmen made up the gap during the lean years through low-level innovation.

\(^{116}\) Frederick A. Hunnewell and Society of Naval Architects and Marine Engineers (U.S.), *United States Coast Guard Cutters* (Society of Naval Architects and Marine Engineers, 1937). http://www.uscg.mil/history/webcutters/docs/1937SNAMETransactions.pdf

\(^{117}\) RG 26, NARA.
In the same 1937 treatise, the Engineer-in-Chief explained his theory of risk-management in the design cycle. By building more conservative designs in the face of threat uncertainty, and vice versa, he endorses ‘drafting’ off of relatively innovative opponents. This seems good medicine even today:

In the future, if uncertainty again exists as to the means by which a situation can best be met, a conservative policy for personnel and boats undoubtedly should prevail. If, on the contrary, the course an illicit enterprise will follow is assured, then a radical policy will be justified to overwhelm it at the start. For smuggling, it is doubtful if developments can possibly be as rapid in the future as in the past, and it will be easier to determine, at an early stage, the priority of elements which should be found in the units which must augment the Fleet.\footnote{Hunnewell and (U.S.), \textit{United States Coast Guard Cutters}.}

During the initial 1924 encounter, the form of the illicit market was well-established, rapid fielding ‘overwhelmed it at the start.’ But the Engineer-in-Chief was right to anticipate future waves, and he gave his service a plausible strategy for dealing with what was to come.

\textbf{Budgets.} Force planning ultimately comes back to budgets, and budget inconsistency is one of the most interesting aspects of this case. The list below describes all major classes acquired during this period.
Figure 44: Major Classes during the Prohibition Era (Various Sources.)\textsuperscript{119}

Encoded by Acquisitions Stream – Traditional, Anti-Smuggling, Unconventional.

\textsuperscript{119} RG 26, also Canney, \textit{U.S. Coast Guard and Revenue Cutters, 1790-1935}. Data source available as Excel Spreadsheet.
Since cutters had dual lifesaving and anti-smuggling missions, their appropriations (light grey) were relatively less contentious and therefore more consistent. Vessels with clear anti-smuggling missions (medium grey) tended to stir up more debate, and hence their acquisition tended to be less consistent. Since the 18th Amendment was unassailable until the early 1930s, ‘dry’ forces focused their assault on enforcement budgets. Given the Prohibitionists’ preference for politics over policy and President Coolidge’s borderline-anarcho-capitalist aversion to government spending, this was an effective tack.\footnote{Okrent, \textit{Last Call}.} Therefore, there were only two major force purchases during the Prohibition era – this 1924 buildup and a surge in 1930. The newly elected President Hoover launched an aggressive attempt to enforce Prohibition, but this was cut short by the pressures of the Great Depression.

This inconsistency wreaked havoc on long-term force planning, especially in the drought between these two major buys. Based on lessons learned during the initial suppression of Rum Row, the Coast Guard asked for a fleet of aircraft in 1925 and 1926.\footnote{Memos, RG 26, NARA.} Judging by the later effectiveness of aircraft in combatting smuggling in 1935, an air arm would have been well suited to combatting evolving forms of smuggling.\footnote{Memos, RG 26, NARA.} The lack of such an arm forced the service to rely on the destroyers as search craft, which were both more expensive and an order of magnitude slower than floatplanes. Perhaps with aircraft and airborne radio filling the search role, the destroyers could have served efficiently as interceptors and boarding ships. Since this did not happen, the service adapted extant platforms with new tactics and structural modifications.

The inability to buy their way out of the problem impeded the service’s ability to achieve...
their ends; that said, it makes for a fascinating study in organizational adaptation. In the next chapter, we will explore both the Coast Guard’s tactical adaptation from a position of strength using conventionally procured assets, and how innovative Coastguardsmen learned to beg, borrow and steal capabilities when that system broke down. Though partnerships, brokerage, and seizures, the service acquired everything from floatplanes to the fastest speedboat of the period, the CG-911, née *Cigarette*. The Intelligence Office acquired technical intelligence capabilities by simply building the boxes themselves. These unconventional acquisitions (dark grey) carried the force through the gap between major purchases.

We find a similar pattern by tracing the Coast Guard’s budget through this period.
The Coast Guard budget continued to increase over the course of the 1920s and 1930s, though this was mostly due to non-capital costs. Expanding the Coast Guard tripled personnel costs from 1920 to 1930, while increased demands on the service increased operations and
maintenance costs five-fold. These costs were less sensitive to political considerations. The acquisitions portion of the budget was more sporadic.

Examining the budget reveals one additional aspect to the financial picture – President Franklin D. Roosevelt’s National Industrial Recovery Act. The federal budgeters hoped for a ‘peace dividend’ following repeal, but the reduction in appropriations allowed the re-emergence of maritime smuggling. In response, at least $35 million of New Deal spending made its way to the Coast Guard for construction and maintenance projects. The service budgeted a negligible amount for procurement during late 1934 and 1935, yet completed a major re-capitalization during this period; these resources must have come from Industrial Recovery funds. As opposed to the 1924 buy, which sought specifically anti-smuggling craft, these late purchases focused on multi-role medium-endurance cutters.

Altogether, the Coast Guard built a new force and doctrine finely tuned to defeat the Rum Row of 1924. This it did, as we will see in the remainder of this chapter. However, mass-producing such a force amidst fiscal constraints created a number of long-term problems, which became apparent as the fight wore on. We will deal with these in the next chapter.

The End of Rum Row, 1925-1926.

We don't give a damn for our old Uncle Sam, Way’o, whiskey and gin!

Lend us a hand when we stand into land,

Just give us time to run the rum in.

...
Schooners, steamers, cruisers and all, Way’o, whiskey and gin!

Chase us with cutters and battleships tall,

Still we have time to bring the rum in.\textsuperscript{126}


The new force was begun its assault on the Row in the fall of 1924, and the holiday rush of that year presented its first major test. The doctrine worked as intended. Destroyers and cutters swept for targets, the ‘buck-and-a-quarter’ and ‘six-bitter’ patrol ships harassed and trailed the motherships, and a second wall of patrol vessels and speedboats inflicted losses on the contact ships. An uninteresting victory is a sign of good planning, and the battle of Rum Row was straightforward to the point of boredom.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{rum_blockade_press_and_film_accounts.png}
\caption{Rum Blockade press and film accounts. (Herald Tribune, 7 May 1925; Pathé Clip, 1925.)}
\end{figure}

Most victories on Rum Row were similarly monotonous. As the news clipping above describes, this was a blockade, not a battle. Racing liquor-laden speedboats made for good

\textsuperscript{126} Ling, \textit{Run the Rum In}. 
stories, but the point of the Doctrine was to bottle up the motherships, not to chase contact ships. As in the video above, patrol ships would circle these vessels like lazy sharks, preventing contact ships from making their rendezvous. Since many of these ships purchased liquor on credit bordering on usury, interest compounded while their cargo languished on deck. By delaying the mothership as long as possible, the Coast Guard injected cost into the trade. If they were able to bottle up the ship long enough to expend her stores of fuel and water, the patrolling craft could force her to return home laden with unsold liquor. Victory was found in the ledger books, and the blockade forced a number of rum financiers out of the game.

This evolved into a cat-and-mouse game, where the mothership would attempt to lose their

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127 RG 26, NARA. Intel Reports on financials of Rum backers.
128 Ibid.
trail. The rumrunner would then offload as much cargo as they could before they were reacquired hours or days later, and the game would begin again. While this ‘deep hovering’ model proved viable against the blockade, it demanded a great deal of mobility. Therefore, remaining at a static Rum Row became increasingly unworkable. Since contact ships and motherships could no longer congregate at known focal points, they came to rely on syndicates and formal coordination mechanisms.

The graph above demonstrates this transition. According to Coast Guard intelligence reports, ships hovering in the Eastern Rum Row (blue) dropped dramatically in mid-1925. By mid-1927, these numbers flattened out around zero. Deep hovering (purple) made up the difference initially, but these numbers eroded in time. At this point, the illicit rum trade shifted from a grey market to a black market. In this increasingly dangerous market, some of the menagerie of craft that made up Rum Row no longer made the cut.

![Graph showing USCG captures of liquor smuggling vessels by type.](image)

**Figure 13: USCG Captures of Liquor Smuggling Vessels, by Type, Est. Total Liquor Gallons (RG 26).**

129 Accounting for these types using sheer number of captures overstates the impact of small ships, which made up the majority of the captures but were far less significant in terms of size, weight or effort. For instance, capturing a mothership schooner is more important than a rowboat in most accountings. To provide context, however, I present the graph by total numbers below. RG 26, NARA.
These initial assaults on Rum Row had a disproportionate impact on low-performance ships. Figure 13 tabulates the number of Coast Guard captures by type of ship, according to estimated total gallons of seized alcohol. Schooner captures account for a large portion of captured weight until 1928, but they drop off dramatically afterwards. The same pattern holds with motorboats, though to a lesser degree – with the loss of Rum Row, contact boats were no longer as profitable. While captures are difficult to interpret, juxtaposing the decline in schooners and motorboats with the slightly rising number of steamers and screw vessels indicates an abandonment of schooners in favor of higher-performance vessels. This is a conservative estimate, as captures under-represent high-performance vessels, which are more likely to escape; screws are faster than schooners, and therefore likely relatively underreported. These findings confirm an end to Rum Row around the end of 1925.

Admiral Billard summarized well the government’s perspective on the state of affairs following this initial campaign in an AP article from November 7, 1925:

The Coast Guard, with the additional resources voted last year, has tremendously
curtailed the smuggling of liquor off the North Atlantic seaboard since last spring, Admiral Billard said. “It must not be understood, however, that foreign vessels with liquor no longer hover over out coasts,” he declared. “Rum ships in greatly reduced numbers are discovered in ever changing positions.”

“The enemy – for surely these foreign ships operated for the express purpose of flaunting the United States constitution and laws are national enemies – is engaged in a highly lucrative business and he will not willingly forego the enormous profits at stake. He has the following great advantages:

“First, the tremendous extent of the American Coast Line. Second, the proximity of foreign bases. Third, complete knowledge of conditions at sea and the operations of the Coast Guard vessels. Fourth, the so-called ‘freedom of the seas’ and a maze of legal opinions.

“The enemy knows, however, that the coast guard is combatting his illegal traffic with increasingly satisfactory results from the government’s standpoint.” The Admiral quoted a Government chemist of the New York prohibition office that “there is virtually no liquor coming in from Europe now.”

As the Admiral noted, while the Coast Guard forced the rum fleet to abandon Rum Row, demand remained strong and the smugglers retained a number of structural advantages. While the grey market was no longer viable, rumrunners had a strong hand as they made the transition into a black market. In the next chapter, we will explore how individual initiative within the coast guard counter-balanced the natural advantages of the liquor black market.

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130 Billard, Brooklyn Daily Eagle, 7 Nov 1925. Also clippings in NARA RG 26.
CONCLUSION: FRONT-LOADING THE SCRIPT.

*The Two Scripts.* This period of the Rum War supports both the operational and the organizational scripts proposed by the ‘Boxer’ model. On the first count, Rum Row was a grey market, where known social focal points allowed coordination between buyers and sellers. The Coast Guard shut down Rum Row by patrolling, thereby injecting unacceptable risk into this focal point and forcing rumrunners to into syndicates. In Rum Row, rumrunners were freeriding off of the general security of American coastal waters; in these black market syndicates, rumrunners paid out higher rents for protection and contract enforcement.

The organizational script played out differently in the diplomatic sphere and in the Coast Guard’s enforcement effort, but in both cases, political support was translated into operational effects through organizational efficiency. In the previous case, the British had the advantage of an international abolitionist movement; in this case, the international prohibitionist movement was only a shadow of the Anti-Saloon League. The norm of prohibition could not compete with
the norm of freedom of the seas, so the formal diplomatic contest rested solely on interest and power. While the United States had home court advantage in its adjoining waters, the United States had neither the support nor the efficiency to fully implement a ‘ratchet’ strategy in international law. What did work well were low-level lateral partnerships between law enforcement, especially between the Canadian Mounted Police and the US Coast Guard. This supports the organizational script’s general theme of tacit partnerships and market-like structures.

In terms of enforcement, the Coast Guard shaped the ‘Doctrine for the Suppression of Smuggling’ through collaboration amongst the strong trust networks of the officer corps. Support was plentiful during this initial period. In concert with these efficiencies, the service brought Rum Row and the grey market phase to a rapid end.

The Prohibition Bureau, on the other hand, lacked these efficiencies. Lacking a collegial culture and an ability to securely trust each other, they were unable to translate support into outcomes. Theoretically, they should have been able to draw on the same constituency as the Coast Guard, perhaps even more so given their ideological affiliation with the Anti-Saloon League. Playing catch-up on efficiency is a weak position when support is as front-loaded as it was during this campaign. Though the frailty of the Prohibitionist coalition could not have been known at that early date, the Rum War would have been quite different had the Prohibition Bureau’s maritime arm retained the task of suppressing maritime smuggling. These data support the organizational script.

*Industrial-Age Problems.* This case transpired during the ascendancy of bureaucracy and mass production. Accordingly, the Coast Guard encountered natural tensions between large force management and organic innovation. These tensions implicate modern campaigns against
unconventional adversaries. Therefore, we should pay attention to the Coast Guard’s solutions to these problems in hopes that we might use them to solve our own.

Toward that end, I identify three major problems inherent in the Coast Guard’s choice to mass-produce a counter to Rum Row in the 1924 doctrine and fleet expansion. First, by fielding a large, standardized force, the Coast Guard carved the new doctrine in stone, while the theories behind Rum Row were scrawled in pencil and easily changed. As this force aged, the rumrunners began to regain the technological edge at sea.

Second, these choices created constituencies, which in turn created inertia. This is especially evident in the destroyer force, where the service assigned many promising officers – as good officers, these men defended their charges, though this defense may have kept a problem-prone capability around longer than pure strategic logic would have dictated.

Finally, building ships to specifications committed the force to those specs. Since the rumrunners could easily adapt to performance metrics, fixed parameters ceded initiative in innovation to the smugglers. But without Rum Row, the rumrunners became increasingly hierarchal, and began to experience similar problems:

Gradually, independent rumrunners were driven out by shore-based syndicates, which were increasingly standardized and well-organized. Unlike in the early years, where liquor cargos were arranged and brokered on short notice and on an ad hoc basis, liquor-smuggling at ports such as Bimini became business-like and efficient. Skippers checked manifests and supervised loading. A representative from the syndicate doled out the sailing orders, sometimes not until the ship was ready to

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131 Okrent, Last Call; Willoughby, Rum War at Sea.
leave, and then sometimes changed the orders when the RR was enroute.\textsuperscript{132}

These the sides were well matched upon entry into the Black Market phase. In the next chapter, we will see how Coast Guardsmen found ways to recover their technological edge by working around these specification problems, and how rumrunners worked to dull that edge.

CHAPTER 10, BLACK MARKET: RACING SIDEWAYS (1926-1935)
THE INNOVATION COMPETITION BETWEEN COAST GUARD INTELLIGENCE AND THE RUM SYNDICATES.

The last chapter ended with the collapse of Rum Row, which sent rumrunners running for the cover of the syndicates. These new organizational forms gave the rum trade new capacity for coordination and risk pooling, but they came with substantial overhead costs and created more veto points over innovation. As a long-standing institution, the Coast Guard had the opposite problem – the service already possessed excellent command and control capabilities, but needed to keep up with the still-adaptive syndicates.

This was a contest of innovation, and the loss of the Rum Row sanctuary meant that the rum trade no longer could solely rely on diffusion across tacit networks. These ‘weak ties’ and informal connections were boons to innovation, but they were too ephemeral in the absence of a market ‘focal point’ like Rum Row. The strong ties of the syndicates provided a backbone for organizing business. While these ties excelled at replicating and distributing known practices, informal ties provide the unstructured innovation that animates these institutions. These informal ties were harder to safely create after the loss of Rum Row. Both the syndicates and the service sought the right balance of these ties, in hopes of both innovating and implementing faster than the other. This contest was now on a more equal footing - while the rum trade was still full of informal connections, the Coast Guard grew adept at cultivating peer-to-peer connections across institutional borders.

Chronologically, we pick up where we left off, starting with the end of Rum Row through the end of the case in 1935. We begin by exploring the foundations for innovation. An organization with robust ‘strong ties’ that easily builds ‘weak ties’ should adapt rapidly, so we will analyze the Coast Guard and the syndicate’s structure in the operational, intelligence and logistical
spheres.

The main portion of the chapter explores the measure-countermeasure duel between these organizations over the rest of the case. The rum trade re-booted by moving to Florida, and then to the Great Lakes. These involved different smuggling business models, and the Coast Guard was forced to adapt a force optimized for the initial Rum Row to these new requirements. They did so by modifying extant ships and seizing rum ships, as well as by changing tactics to better use the ships they had.

The syndicates returned the favor, and fielded a fleet of ‘banana boats’ backed by an extensive radio infrastructure. The fight moved into the airwaves, and both sides fought a cryptographic battle using codes of complexities ‘never attempted by any government during World War One.’\(^1\) The two sides fought each other to a stalemate in the early 1930s; liquor continued to flow, but it was scarce and expensive.

This stalemate held through Repeal, which caused a temporary collapse of the rum market. Smuggling returned in force in 1934, which lead to a resurgent Coast Guard budget in late 1934 and early 1935. In this last battle of the rum war, lessons learned from the experimentation of the previous decade were effectively implemented on a large scale. Upon the backdrop of a post-repeal lack of sympathy for rum running, this renewed force brought the case to an end on terms favorable to the revenue.

**INSTITUTIONAL FOUNDATIONS: A BATTLE OF FRAME RATES.**

*The Service, the Syndicates, and their Strangely Similar Structures.* Institutional structure provides the backdrop for this measure-countermeasure duel. In order to counter an adversary’s

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move, one must first realize that the adversary has made a move.\textsuperscript{2} Accruing anomalies indicate that something has changed – for instance, when very few ships were reported on Rum Row, yet reports of smuggled rum continued, the Intelligence Office reasoned that smugglers had adopted a new approach.\textsuperscript{3}

Once the problem is identified, the force must develop an effective counter. If the problem can be abstracted and formalized, then it can be solved deductively. The 1924 doctrine demonstrates this ‘top-down’ approach – the Coast Guard theorized that the motherships were the trade’s centers of gravity and devised a strategy that neutralized these vessels. This approach works well for solving well-behaved problems.

It does not work as well in an open, dynamic system, and the rum trade became one such system after the evacuation of Rum Row. The alternative is a ‘bottom-up’ inductive approach. Operators experiment with different approaches, and upon finding one that works, they refer the solution to the system. The system then attempts to generalize the solution, implementing it wherever applicable.

In this market-like ‘viral’ model, the organizational hub serves as a curator and an information clearinghouse, rather than an integrator or a command director. Implementation choices are left to the discretion of front-line operators who stand to gain or lose the most by its performance; good practices should diffuse socially throughout the system, and bad ones should die out in time. The organizational hub also acts as a synchronizer and a facilitator, ensuring that operators with shared equities remain in conversation with each other. While this is inefficient for problems that can be formalized, chopped into pieces and solved in detail, it provides a viable

\textsuperscript{3} RG 26.
approach for complex problems.

The key to these inductive adaptive approaches is coordination – the side that can come to a correct consensus on a problem and distribute a plausible solution the fastest is likely to prevail. As described in the theory section, we might imagine this coordination as a ‘frame rate’: the time required for a relevant piece of information, observed by an individual, to diffuse throughout the institution and update the institution’s shared picture. If the adversary locally devises a counter to an established tactic, how quickly will the community that uses that tactic become aware of the counter? Or, if an individual unit develops an effective answer to that counter, how quickly will all relevant units be able to implement that answer? High coordination ‘frame rates’ provide an institution with smooth and crisp responses to change; otherwise, adaptation is prone to become choppy or bog down.4

This ‘frame rate’ depends on both connectivity and culture. An institution where all members can rapidly communicate and come to a working consensus will have a high frame rate. An institution where members are disconnected, or one where factional objectives compete with institutional goals, will tend toward low frame rates. This measure tends to favor flat structures with low power distance, as it maximizes the ideational space of the institution – in such a structure, everyone is allowed to think and innovate. In a top-down directive structure, where change is restricted to members of a functional ‘thinking’ class, the space for innovation is severely reduced.

A truly efficient organization is one flat enough to host one large conversation between all of its members, and one whose members spend more energy fighting the enemy than they do

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4 This is not solely a function of communications speed. The community must adjudicate competing reports in order to converge on a plausible shared picture, and this is function of culture and trust. It is a heuristic, not an algorithm – true innovation changes an objective function’s degrees of freedom from a constant into a variable, so an attempt to fully specify this process would be chimerical.
fighting each other. This allows the organization rapidly make sense of the world and do something about it together. In social network parlance, ‘weak ties’ (ad hoc acquaintances) provide a broad social search function, while ‘strong ties’ (mutually reinforcing trust relationships) give the organization cohesion to act on opportunities discovered in that search.\(^5\) Doing so increases ‘frame rate,’ which in turn allows the organization to maneuver for advantage.

Both the Coast Guard and the Rum Syndicates responded to these imperatives, but they approached this ideal from different directions. The Coast Guard, already rich in trust, moved away from a top-down command structure toward a flat, collaborative structure. Interestingly, the corruption-riddled Prohibition Bureau was adding hierarchy and formal processes during this period in an attempt by Commissioner Andrews to redeem the institution.\(^6\) The rum trade was already quite flat, but the security of the syndicates created a functional form of trust through accountability.

We will explore these trajectories presently. I divide the measure-countermeasure contest into three levels. On the tactical level, Coast Guardsmen and rumrunners devised maneuvers and measures to prevail in individual engagements. Organizational structures that quickly evaluated and diffused these tactics performed better. On the operational level, the Coast Guard and the rum syndicates continually tried to make sense of each other and exploit any weaknesses in the others’ business models. This contest focused on intelligence, and hence hinged on interagency and international collaboration. Finally, the strategic level of the struggle was fought through competitive acquisitions and engineering in the dockyards. The side best able to creatively


configure and modify the technologies of the time could foreclose technical options for their competitors. On all three levels, the imperative was the ability to innovate, integrate, and field faster than the other guy.

The Rum Fleet. Data on the internal structure of the smuggling enterprise are incomplete. According to an 1985 literature review essay, “Trying to penetrate the suppliers’ lair may prove difficult since firms such as Sandbach Parker, Georgetown; Great West Wines, British Columbia; Distillers Corporation, Britain and Bronfman Industries, Ontario may be reluctant to welcome researchers interested in this phase of their business history… Essentially, despite the wealth of entertaining accounts, very little is known about Atlantic Canada's rum running past. Information on Nova Scotia, St. Pierre, Prince Edward Island, and New Brunswick is steadily surfacing, but the Newfoundland experience and the French participation have hardly been scratched.”

We do know a few things. First, smuggling syndicates tended to eschew direct involvement with the gangster-led distribution networks on the American side of the border. One account ascribes this aversion to an episode where an American turf war led to killings on the Canadian side of the border. Another describes an attempt by the gangsters to muscle into the smuggling trade – lacking the requisite seamanship, they managed to sink their vessel after only a few miles of sailing. Following this, the gangsters left sailing to sailors; sailors seemed content to leave gangstering to gangsters.

9 Stephen Schneider, *Iced: The Story of Organized Crime in Canada*, 1 edition (Mississauga, Ont: Wiley, 2009); Allen, *The Black Ships*. The exception to this rule is the Great Lakes, where land and water-based crime were confined in close quarters together.
10 Schneider, *Iced*; Harold Waters, *Smugglers of Spirits: Prohibition and the Coast Guard Patrol* (Flat Hammock Pr, 2007).
Either way, the smugglers sparred around the edges of the law rather than directly going to war with the state, and it made little sense to compromise their Canadian sanctuary by getting embroiled in gangland wars. Therefore, their networks were limited to providing product, and remained distinct from the inland empires of the better known and far more violent Capone, Rothstein, Thompson, O’Banion, and Schultz. The Great Lakes were the exception to this rule, where the operating environment was too cramped to permit such a distinction.

Second, the trade became increasingly organized as time went on. The specifics of this organization are uncertain, but increasing risk and mounting technical demands led to the growth of the syndicates at the expense of independent operators. By 1929 at the latest, the West Coast trade was dominated by the rivalry between the Consolidated Exporters of Bronfman fame and the ‘Hobbs interests.’ Consolidated had, by then, expanded into the Gulf with an encrypted pirate radio station in Belize. The Bronfmans also owned Distillers Corporation Limited, which had been shipping Scotch for smuggling to the Bahamas from the outset of the case. By way of Seagram’s, the Bronfmans also held rum running interests in St. Pierre and Miquelon, Newfoundland and Nova Scotia. Harry Hatch of Hiram Walker ran a large fleet on the Great Lakes, though Bronfman had a presence there as well.

Sam Bronfman’s empire fully encircled the United States, and Hatch was his leading rival. The two remained on good terms. From Hatch’s obituary:

“He was a wonderful fellow, an industry leader and a good friend,” said Charles Bronfman. “My father and Harry Hatch had a great feud going for many years, but they built great businesses, so Cliff Hatch and I could

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afford to compete as friends. I told him there's nothing I enjoyed more than switching somebody from Canadian Club to [Seagram's] V.O. and he laughed and said, 'There's nothing I enjoy more than the reverse.' Neither of us wanted to put the other out of business. We worked as competitors, and as very good friends.'\textsuperscript{13}

Besides these general themes, any other assertions as to the structure of the liquor trade would be entirely speculative. Rum running began with a Rum Row filled with independent operators, and became a consolidated and networked smuggling enterprise by the 1930s. Perhaps a future historian will adequately describe the story arc between the early 1920s and the end of the decade. Until then, a loose interpolation between those two points must suffice.

**The Coast Guard: Building Institutional Routers.** We know far more about the Coast Guard’s internal mechanics during this period. On the tactical, operational, and strategic levels, the service built bridging ties across organizational divides while retaining strong institutional identities. Informal conversation provided innovation, in parallel with the formal chain of command providing synchronization.

We can observe this synthesis between structures in a combination of cultural and structural features. As to the latter, institutional ‘short-circuits’ provide quick channels for non-directive ideation, so we should see a class of players with minor formal roles that nonetheless occupy a central position in the day-to-day life of the organization. These network ‘routers’ generally do not command actions, but excel at consensus-building and curating conversations.

One key cultural tension hinges on whether a leader recognizes these ‘routers’ as assets rather than liabilities. They undermine formal brokerage, but accelerate the institution – a leader

that can win the support of these ‘routers’ while maintaining the strength of the formal institution should do well. Ideally, we should find a directive, formal channel for commanding action alongside an informal avenues for conversation and dissent. If players can hold these two pathways in tension – in the most extreme case, if a follower can carry out an action with which they disagree, and a leader can respect a follower for voicing that disagreement – then the organization has a culture amenable to these fusion ‘command-conversational’ approaches. Maintaining this tension allows the organization to make use of back channels without devolving into tribe wars or decision paralysis. We will see these cultural and structural supports at work throughout this chapter, but we begin by analyzing them directly.

**Tactical Level.** As the service entered the Rum War, sundry officers began to send unsolicited tactical suggestions to Coast Guard headquarters via their chains of command. The fact that these service members felt empowered to do so speaks to the culture of the institution. These comments ranged from one-page gripes with a given procedure to ten-page comprehensive essays on the whole of anti-smuggling doctrine and practice.

Inundated with these ideas, the Commandant gave Root the task of fielding them. In Billard’s words, concerning one such submission in February 1924, “This letter contains a number of suggestions about law enforcement, and doubtless others will be received. It is my purpose to turn them over to you. I wish you would carefully digest them all, and keep them in a separate file, so that I can take them all up with you when we begin to form plans.”

This seemingly banal choice had profound organizational impacts.

The idea of a ‘suggestions box’ is hardly revolutionary. But it is rare when those comments are meaningfully engaged to generate change. Root fielded ideas from everyone from Captains

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14 Memo, RG 26.
to Ensigns that ranged from brilliant, to banal, to flat out foolish. He returned carefully considered and extensive responses that provided both critique and encouragement, and he would refer any ideas deserving action to the Commandant. Earning a reputation as a fair broker, he continued to foster a culture of initiative and continuous improvement, which kept the stream of suggestions coming.

He was in a doubly fortuitous position to play this role. For one, he was something of a renaissance man – he was an accomplished engineer, with a number of published technical articles to his name. He also possessed a legal background, in one case referring a cutter captain to Philip Jessup’s doctoral thesis on the marginal seas after a series of overturned seizures. As Intelligence Chief, he had the pulse of the rum trade. Just as importantly, he sent more than one thousand Intelligence Circulars out to the fleet over the course of his term. Since these advisory reports went out up to three times per week, Root would socialize any ideas he received that he deemed suitable to send out to the force. The Coast Guard was quite nimble on its feet with a tactical latency measured in days.

Root’s role was even more striking in social network terms; as seen in Figures 1 and 2, he served as a ‘short-cut’ which reduced the path length between operators.

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15 Ibid.
18 Ensign, *Intelligence in the Rum War at Sea, 1920-1933*.
19 Ibid.
Figure 48: USCG Organizational Chart, 1930. (Data Sources: Coast Guard, Brookings, 1930) (Arrows: RADM Billard, Commandant; CAPT Root, Intel; CAPT Wheeler, IG; CAPT Hamlet, DD Force*)

Figure 49: Network Charts of USCG Offices, 1930. (Same Data, Produced with Pajek.)
Left: Formal Organizational Chart.
Right: Simulated ‘Short-Circuit’ Routing through Intelligence Office, using RG 26 message traffic. (Nodes Weighted by PageRank Algorithm, Colored by Weighted Degree Centrality.) (Arrows: RADM Billard, Commandant; CAPT Root, Intel)

* CAPT Hamlet prepared the ships of the DD Force at the Brooklyn Naval Yard, and then commanded the force during its formative years. He then served as Superintendent of the US Coast Guard Academy from 1928 until his appointment as Commandant.
Figure 1 depicts the Coast Guard’s organizational chart circa 1930. The service was organized into four major portions. First, the Patrol Service was tasked primarily with anti-smuggling and reported to the Destroyer Force Commander. Second, the Cruising Service split its time between rescue duties and anti-smuggling, and reported to the Commandant via division commanders. Third, the Lifesaving Service was tasked primarily with rescues, and similarly organized into divisions. Finally, Headquarters supervised all these activities. In this graph, Root and Wheeler occupy small offices in Headquarters and play a seemingly minor role.

In practice, duties were shared between these portions, and the lines between them were far less clean than the organizational chart implies. According to the chart, these services only met in the office of the Commandant; such an organization would be cumbersome and likely to experience severe lag. While regional commanders effected coordination between the different forces in their area, the service as a whole required lateral integration. As the ‘short-cut,’ Root filled that role.

The graph on the left of Figure 2 depicts that organizational chart in nominal network terms. In theory, the Coast Guard should have been a sprawling ‘star’ network. In such a network, one node on the periphery would need to make a large number of leaps in order to reach a peripheral node on the opposite side of the graph.

In practice, this distance was dramatically reduced by Root’s social router role. Using a simple simulation, the graph radically changes if we model a sampling of this tactics improvement correspondence as links (Figure 2, right.) Root becomes the second central hub, next to the Commandant. By a few measures, Root is actually slightly more central to the
network than the Commandant himself.\(^2\) This binary structure results in a much denser social field around the core of the network, which offers multiple routing options between players. This corresponds with the low latency demonstrated by the Coast Guard during this case.

Though it is difficult to generalize from such a simulation, Root’s informal ties reduce the average distance between all players in the network by 13%.\(^2\) Even more dramatically, these ties increase the tight-knit-ness of the network by more than 150%.\(^2\) The combination of these two moves the network into ‘small-world’ territory, where all players can quickly reach each other.\(^2\) Additionally, reflecting these ties moves the network toward ‘scale-free,’ a natural form of networks that reflects collaborative processes.\(^2\)

These effects are very conservative, as they are incomplete and aggregated at a high level – fully modeling Root’s extensive communication at the unit level would likely produce even more dramatic changes in the graph. However, doing so would require a comprehensive survey of Coast Guard internal correspondence from the time, and I do not presently attempt this. It is clear from this exploratory survey that Root’s role as router and the collaborative culture of the Coast Guard provided an excellent foundation for rapid tactical adaptation.

**Organizational Level.** The same story played out on the inter-agency level between the Coast Guard, the Customs Bureau, the Department of Justice, the Prohibition Bureau, the State Department and a few other players. Anti-smuggling was an inherently integrative enterprise, and much of the requisite intelligence and resources resided outside the walls of any one

\(^{20}\) Specifically, PageRank. This result is not robust across multiple simulations, however. Network Dataset Derived USCG Organizational Chart & Message Traffic, RG 26.

\(^{21}\) Average Path Length reduced from 3.3 to 2.9. *Ibid.*

\(^{22}\) Global Clustering Coefficient from 0.08 to 0.21. *Ibid.*


\(^{24}\) Power-law distribution of node degree, with gamma exponent between 2 and 3. By fitting power law curves to the degree distribution, after dropping the asymptotic k=1, the addition of Root’s informal ties moves the gamma exponent from 2.12 to 2.35. STATA software courtesy of Michal Brzezinski, http://coin.wne.uw.edu.pl/mbrzezinski/software/.

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institution.

For instance, the British had the best intelligence on rum ship departures, but the Coast Guard had the most need of that intelligence and had no direct contact with the British. Through a partnership with the State Department, the service gained access to this information. In another case, American cryptography during this period lived in the War Department, and the Coast Guard was able to gain code-breaking capabilities through building a lateral partnership with the Army Signal Corps.\textsuperscript{25} As before, success hinged on the ability to create these \textit{ad hoc} ties, along with the ability to institutionalize these partnerships.

The same sorts of brokerage skills and voluntary partnerships that worked inside the service also worked in the interagency. Figure 3 describes the various agencies directly tied to liquor suppression as of 1925. The Department of Justice, specifically the Assistant Attorney General for Prohibition, was tasked with prosecuting Prohibition offenders. The State Department had two roles – first, liaising with the British government for intelligence purposes; second, negotiating liquor treaties. Treasury, under the unenthusiastic Mellon,\textsuperscript{26} housed the three main enforcement agencies: the Prohibition Bureau, the Customs Bureau and the Coast Guard. Of these three, Customs and the Coast Guard had a long-standing relationship, and both held the Prohibition Bureau in low regard. This animosity dates to the very beginning of the campaign; the previous Commandant blasted the bureau with a rhetorical volley in response to a public accusation from a Prohibition official of insufficient loyalty to the Constitution.\textsuperscript{27} This improved in time.

\textsuperscript{25} RG 26, NARA.
\textsuperscript{26} Okrent, \textit{Last Call}.
\textsuperscript{27} Reynolds to Mellon. 1923(?) RG 26, NARA.
Figure 50: Interagency Chart, Lincoln Andrews’ Reorganization, 1925. (Wickersham, 1931.)
(Arrows: Continuing Committee (Fusion Cell); Secretary of the Treasury)

Figure 51: Network Charts of Interagency Process, 1925. (Produced with Pajek.)
Left: Formal Organizational Chart, without Coordinating Committee.
Right: Formal Organizational Chart, with Coordinating Committee.
(Nodes Weighted by PageRank Algorithm, Colored by Weighted Degree Centrality.)
General Lincoln Andrews, who succeeded Roy Haynes as Prohibition Commissioner in 1925, sought to repair these rifts. Hoping to build on the successes of the conversations already occurring between Justice, Customs and the Coast Guard, he built the ‘Continuing Committee,’ or alternately the ‘Smuggling Committee’ between the intelligence branches of the major enforcement stakeholders. This included the Special Agency Service of Customs, the Division of Foreign Control, the Prohibition investigative arm, the Assistant Attorney General, and Coast Guard Intelligence.

Modeling the interagency with and without this committee yields sharply different structures (Figure 4, right and left respectively.) As before, the coordinating committee provides an informal space for collaboration, yielding a closer and tighter-knit network. However, this is only one half of the puzzle – structure does not directly tell us about culture.28

These are co-constitutive, in theory, but as a veteran of meetings with all the right players in the room where nothing gets done, I hold that a structurally ideal meeting can fail if the players do not want to be there. Senior leaders may even compel continuing meetings, but here, command can give the illusion of actual collaboration. Though structurally equivalent, there is a world of difference between a committee and actual collaboration. The latter involves culture, while the former may or may not.

On this count, operational-level efficiency was spottier than the excellent internal communications within the Coast Guard. At times, these partnerships worked amazingly well – the Army Signal Corps loaned Major William Friedman, their leading code-breaker, to the Coast Guard for a few days. Having demonstrated the value of code breaking, Friedman commended

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28 These are co-constitutive, in theory, but as a veteran of meetings with all the right players in the room where nothing gets done, I hold that a structurally ideal meeting can fail if the players do not want to be there. Senior leaders may even compel continuing meetings, but here, command can give the illusion of actual collaboration.
his wife’s commensurate skills to the Coast Guard. She was soon building critically important
cryptanalytic capabilities from an office in Coast Guard Intelligence. We will explore this
contribution at length later in this chapter.

Later, Major Friedman accompanied the maiden voyage of the first Coast Guard SIGINT
patrol ship, broke the rumrunner codes on the spot, and read them back over the air in plain text,
and spooked the New York rum fleet so badly that they shut down operations for a week.29

Conversely, tensions between Prohibition and the Coast Guard ran high in New York by
1930. The code-breaking techniques developed by Mrs. Friedman were a closely held Coast
Guard secret. In the New York district, the Coast Guard engaged Customs and agents from the
Federal Radio Commission30 but distrusted the Prohibition Bureau due to a local history of bad
blood. Increasing pressure from inter-agency coordinators eventually forced the New York
office to begrudgingly include the Prohibition Bureau in their code-breaking investigations.31

This went south quickly – the Coast Guard-Customs partnership had cracked one set of local
rumrunner codes, and was collecting intelligence from the respective shore station. The
Prohibition Bureau wanted to raid the radio station rather than continue collecting. When
tensions came to a head, the Prohibition team unilaterally raided the site. Adding insult to injury,
their leader gave a series of press interviews, including an exposé with Popular Mechanics
explaining the mechanics of code breaking.32 Needless to say, there was no further partnership
in New York for quite some time.33

30 Precursor to the FCC.
31 Meals, et al. RG 26, NARA.
32 Meals to Gorman, Oct 1932. Meals references a codebook in the article that only Prohibition had access to
outside of Customs and the Coast Guard. RG 26, NARA.
33 Meals to Gorman, June 1931. RG 26, NARA.
The tenor of these interagency relations was generally personality-driven and often idiosyncratic. For instance, the Prohibition Bureau and Coast Guard leadership in San Francisco worked together very well within the same sort of structure that failed in New York.\textsuperscript{34} Fortunately, Andrews’ flagship Smuggling Committee included a number of people – Root included – who already had strong working relationships. In a dysfunctional meeting, members’

\textsuperscript{34} Perhaps this is due to the complexity of the task; cooperation can be compelled for formulaic tasks, because the nature of these tasks lends themselves to monitoring and evaluation. Metric-driven accountability is much more difficult for tasks involving collaboration or change. Simply, you cannot point a gun at someone’s head and make them work on a team. One can extract formal outputs, because you know what you want to measure. The same does not hold for innovation and collaboration, where the point is to generate something that cannot be measured \textit{a priori}. 

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loyalties remain outside the room, and hence they pursue outcomes that maximize factional equities; in a functional meeting, all the members can find common cause toward a shared goal. The Smuggling Committee had common cause, and therefore worked well.

In a final note on culture and structure, inter-agency coordinators directed twice-a-month regional meetings between the various anti-smuggling stakeholders in the early 1930s. One of the best regional teams actually chafed at the rule, arguing that all the members of their particular working group already knew each other well and did not need the artificiality of a set-time meeting in order to work together. Though the meeting requirement was well intentioned, it tended to protect existing partnerships rather than generate new ones. Culture may generate structure, but the process rarely works in reverse – building the right sort of meetings did not create the right sorts of conversations. Structure serves well as a cultural trellis, providing a logistical substrate for conversation, and a cultural flywheel, institutionalizing productive aspects of these conversations.

**Acquisitions Level.** As an industrial service in the early 20th century, Coast Guardsmen possessed a remarkable mastery of engineering fundamentals. Technical Officers’ promotion examinations included sections on Electrical and Mechanical Engineering, and examinees were expected to have a working knowledge of calculus, thermodynamics and physics. These theoretical foundations allowed service members to take ownership of their platforms, to the point of modifying their craft or even building avionics in-house.

Just as ‘weak ties’ served a social search function, this broad theoretical knowledge base provided a reservoir of ideas. And as ‘strong ties’ embed information or resources within the

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35 RG 26, NARA.
institution, in-depth knowledge of their platforms allowed service members to incorporate the findings from these theoretical constructs into their craft. Even in the technical sphere, grassroots adaptation is a function of span and stability – broad associations provide a wide repertoire for ‘riffing,’ while deep understanding of their craft and mission allowed operators to put that knowledge to use.

Radio direction-finding provides the best example of operator-applied technical theory. Maxwell’s equations, a staple of electrical engineering, describe the propagation of electromagnetic waves. These equations predict different sorts of reception patterns for different shapes of antennas at different angles. A loop antenna has directional properties. Therefore, a steerable loop antenna should be able to find a line of bearing to a transmitter. By 1930, rumrunning syndicates relied heavily on radio for coordination. Applying these wave physics theories, Lieutenant Frank Meals and team developed shipboard radio direction finding in order to triangulate transmitting rumrunners.

The idea that operators would have such in-depth understanding of their own technology, and such capabilities to modify it to their will, seems foreign to the contemporary ‘swap-a-box’ modular diagnostic approach to platforms. This is partially a function of the simplicity of technologies of the time, and partially a function of a very different set of acquisitions relationships. In this, the service was strangely similar to their adversaries - the rumrunners would quite literally drop an aircraft engine into a flat-hulled boat, and connect it through a

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39 Specifically, these antennas register a null if aligned perpendicular to a receiver. Therefore, by steering a geo-rectified antenna, one can determine an azimuth using either the peak (parallel) or the null (perpendicular.) The null is a better option – power drops dramatically as it approaches the null, while it moves in small increments around the peak.
40 RG 26, NARA.
makeshift transmission to a marine screw, and thereby achieve thirty knots.41

Lest I give the impression that the Coast Guard of the 1930s was a province of free-form building and testing, a 1931 memo from the acting Commandant attempted to rein in these practices: “radical changes have been made to the machinery and auxiliaries of the patrol, picket and speed boats attached to several of the units without authority… The attention of the officers in command of all units operating these boats is invited to Article 1512 of the Regulations, and such officers will be held strictly accountable for compliance.”42 Nonetheless, the fact that such a memo needed to be written speaks to the extent of these practices. As before, institutional configurations of relationships and knowledge provided a platform for bottom-up innovation.

**Role Reversals.** We do not precisely know the structures behind rumrunner innovation, but I hold that they yielded roughly comparable results. One would expect the government to play the role of the red-tape-bound bureaucrat, and the criminal to play the sly and nimble foil. In the course of the convergence between these two forces, these roles were sometimes reversed. In this, the two forces were well matched, as the following vignettes demonstrate.

In a tactical role reversal, the Coast Guard Cutter *Sebago* followed the syndicate-run *Bear Cat*. The rum ship halfheartedly maneuvered at 12 knots with hard left rudder for two hours; *Sebago* easily followed this predictable profile. According to the cutter captain, “the only excuse apparent for such utterly dumb maneuvering might be that *Bear Cat* wished to be able to show in her log that she had tried to escape.”43 Such ‘metric gaming’ is normally associated with state bureaucracies. This stands in contrast to the episode in the last chapter where Admiral Billard told his force that he was unimpressed by gaming metrics, as was more interested in outcomes

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42 RG 26, NARA.
43 RG 26, NARA.
than outputs.

The same sorts of reversals appeared from time to time in technical innovation, generally a rumrunner strong suit. Rumrunners commonly used surplus Liberty aircraft engines from the First World War to power speedboats. Not only were they remarkably cheap for the power, they were designed to be compact and were well suited to the task. These installations dated to the early 1920s, and the practice initially diffused virally through Rum Row.

By the mid-1920s, Consolidated Exporters began to take over the market. They decided they would provide these engines for their syndicate, and hired an expert installer. According to rum-runner Johnny Schnaar, who claims to have innovated the speedboat aircraft engine installation, this ‘expert’ was poorly chosen, and a number of his installations failed to perform. A Consolidated-associated friend of Schnarr ended up asking him to quietly repair the installation. The idea of an ‘approved installer,’ especially one who performed poorly, might normally be associated with government bureaucracy. In this case, it was not.

The best Coast Guard captains of the period obsessed over improving the speed of their vessels. While the 1924-vintage patrols and pickets were well capable of overtaking schooners, which averaged 8 or 9 knots, rum-runners kept getting faster while the ‘six-bitters’ and ‘buck-and-a-quarters’ stayed the same speed. One captain submitted a list of suggested modifications to the 125’ patrol vessels, some of which he apparently tried on his own. These included removing tackle, altering the powertrain, and even structural changes.

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44 Ibid.
45 Parker, Rumrunner. 194.
46 RG 26, NARA.
47 This was the Boutwell around 1930. The modifications reduce weight, at the cost of stability, endurance. This reduced weight about 10% from 236 to 215 tons, adding 1.2 knots. After these modifications, the consensus was to keep the new propeller, which added 0.8 kts, but not any of the other modifications, which only added 0.4 knots. RG 26, NARA.
A patrol boat damaged by a collision was already scheduled for dry dock, and the Constructor decided to make use of the opportunity. He made the entire slate modifications to that vessel in the course of repairs. The officer making the recommendations then put the vessel through a series of tests, and reported on the results – though the vessel was more difficult to manage, it was two knots faster. These costs and benefits were hotly debated in a series of circular letters between captains, and the force implemented the changes that added the most performance with the least disruption. Several of the other recommendations were implemented in later vessels.

As we will see through the remainder of the story arc, this role reversal was not necessarily representative. Nonetheless, in these episodes, the rumrunners rather than the government played the role of the bureaucrat. Therefore, we can say that both the Coast Guard and the syndicates were at least on the same playing field of innovation.

_The Role of Patience._ In his *Rum War at Sea*, Donald Canney describes an episode that reflects on the patience and risk tolerances that underwrite innovation.

Lt. Comdr. J.E. Whitbeck, of the destroyer Ericsson, on picket duty, discovered a way to prevent his victim from dousing her lights and eluding him. He simply hailed her captain with the information that he intended his crew to practice night machine gun drill, so “keep your lights on, so we won’t accidentally hit you.” The drill was somehow postponed until the rummy killed her lights and started engines – when a few bursts from the gun on the flying bridge flew dangerously near, and the rummy suddenly lit up and became docile again.⁴⁸

In this recounting, the tactic seems clever, and in a way it was. Unfortunately, it also managed to

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light off a heated diplomatic incident with the British, to whom the rumrunner belonged. While running without lights was a violation of international maritime law, warning shots were a far greater violation.

The Commandant penned a letter to the force prohibiting, under any circumstance, any gunplay in international waters against foreign-flagged vessels under these pretenses. It is telling that the Commandant prohibited the practice and counseled the force on judgment, but did not punish the captain. He was taking risks and innovating, though in a deeply imperfect way, and the service leadership sought to correct his assumptions rather than punish unfavorable outcomes.

In concluding our section on institutional foundations for innovation, the key finding is that a combination of ad hoc connections and trust-based stability provides favorable conditions for adaptation. Both the service and the syndicates were competitive with each other in this, and both would prove to be well-matched adversaries. We now return to the timeline in order to see that story play out.

**Narrative: Dueling Networks, 1925-1935.**

**Deep Hovering Stalemate, 1925.** By late 1925, the lines of ships at three and twelve miles were gone. From that point forward, rum ships and cutters played cat-and-mouse on the North Atlantic continental shelf. Somewhere between sparring and a rolling skirmish, these engagements were rarely decisive but had their interesting moments. The basic structure of the game involved a cutter and a rumrunner. The cutter would attempt to keep a rumrunner

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49 RG 26, NARA.
50 The best parallel I can think of are the daily sparring dogfights that were fought between Greek and Turkish F-16s in the 1990s. These were never intentionally lethal, roughly the same day-in-and-day-out but definitely had winners and losers.
mothership in sight at all times, thereby preventing it from unloading its cargo. The rumrunner would try to shake their tail, and offload as much cargo as possible before they were re-acquired in another sweep. The longer the liquor sat on the deck, the more expensive it became for the syndicates.

Long periods of tactical liberty and experimentation yielded tactics that foreshadowed the formal logic of modern maneuvers. Starting with cocktail napkin sketches (presumably sans cocktail,) crews tested theories out in the course of daily duties. If they worked, they would send them to Headquarters for broad dissemination. Other crews would then try out the tactic, and if it worked, they’d retain it. This resulted in an organic adaptive process with effective localization. Since both sides engaged in this ‘market-like’ competition, the government and the rumrunners fought to a stalemate on the continental shelf.

The rum-runners also attempted several other more direct, less legal approaches to defeating the destroyers. Some rumrunners trailed a steel cable, intended to foul a pursuer’s screws, or fishing nets to do the same. In one particularly daring tactic, rumrunners would cut between two Coast Guard vessels – due to the risk of crossfire, neither vessel could fire on the rumrunner. These aggressive approaches often earned responses in kind, but fouling machinery was a hostile act, and public opinion was likely to be more sympathetic to Coastguardsmen using force in response.

Theory: The Problem of Lines. In order to manage a large force in an ill-defined space, the institution needs to create a ‘map.’ In this administrative cartography, the undefined space is split into discrete chunks that are divided by some sort of logical sequence. In this case, the destroyer force carved two major patrol areas out of the continental shelf, and then subdivided

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them into smaller pieces. A few captains tried to optimize how many of these pieces they covered per unit time in ways detrimental to the mission, by tailoring search patterns to the bureaucratic metric rather than to mission objectives. The enemy, similarly, learned to game these lines.

Figure 53: Predictable Track Patterns, Cutter Ossipee (RG 26.)

Captain Wheeler and Commander Root both recount this problem in 1926 and 1929, respectively: “It appeals to reason that several years of experience in being trailed and dropped at different points, that the blacks have our patrol areas laid out nearly as it appears on the Naval operating chart. They know if they appear within that area they are likely to be trailed and picketed, and it is reasonable to assume in this case they will remain outside that area. That is precisely what they are doing.”52 The service counteracted this tactic by relaxing the patrol’s geographic delineations and expanding the patrol areas, but enterprising smugglers were still

52 Ibid.
able to give cutter captains headaches in these ways.

This ability to ‘exploit the grid’ remains a structural advantage of the smugglers in the black market phase. During the grey market phase, the illicit network committed to certain focal points; during this phase, the suppressor commits to internal focal points. In order to coordinate action, the suppressor needs to commit to a framework, but that framework can be exploited. Still, people in conversation can make sense of these bureaucratically ‘illegible’ problems. Fusion cells and conversational brokers counterbalance these problems of formal structure. In a simpler but somewhat less efficient solution, an organization can build overlap areas along these lines, so that they can continue patrol or pursuit into the adjoining district – the service implemented this easy fix by the end of the case.53

**Stealth.** Deception was the second major rumrunner approach in the wake of Rum Row. If a ship could not run in, perhaps it could sneak in. Taking a page from the book of ubiquitous smuggling practices, rumrunners hid cargoes of liquor under legitimate cargoes. Unpleasant smelling cover cargoes were preferred; fortunately for the smugglers, most had some sort of fishing background. Rum-runners would also attempt active deception – in ‘belling the cat,’ they would send an unloaded fast ship to draw off patrol vessels prior to making a run. Alternately, they pluck on the service’s lifesaving heartstrings by sending out a distress call at fake grids.

The government devised counters to these practices. The prevalence of fish stocks as covers for rum cargoes inspired a simple and generally effective countermeasure - a long wooden rod with a rounded metal end. Expertise and knowledge complemented these technical solutions. Boarding parties had strong general knowledge of ship design, and would have some ability to sniff out a large volume of space that was unaccounted for.

53 Ibid.
Effective intelligence shared common smuggling tactics, which forced smugglers to become ever more creative. These measures did not stop clandestine imports, but they did limit the amount that could practically avoid detection on one ship, and thereby injected friction into these efforts. Familiarity helped detect deception attempts – a crew would get used to seeing a given boat or hearing a ‘fist’ in Morse code, and the ruse might not work.

Summary. Altogether, the deep hovering fleet off the North Atlantic shelf was only a shadow of Rum Row at its height. Still, this residual effort stalemated the Coast Guard through maneuver and stealth until the renewed rumrunner regional push of 1930, when it regained a measure of initiative. On both sides, high rates of low-level initiative kept the stalemate a lively one. In the meantime, though, the bulk of the rum-running network attempted a new start on sunnier shores.

Florida, 1926-1928.

If the international waters of the North Atlantic could no longer support floating liquor warehouses, it stood to reason that the rum trade should find a liquor warehouse off the American coast that didn’t need to float. The Bahamas became the rum fleet’s ‘unsinkable Rum Row.’ As retold by Coast Guard veteran Harold Waters:

The southeast coast of Florida is made to order for smuggling. A long chain of sandy beaches, indented here and there with inlets, rives and artificial harbors, stretches from Palm Beach to Miami Beach. Only the very lightest of surf laps at the beaches, thanks again to the Bahamas, whose big off-lying islands serve as a breakwater.

Close at hand, only 55 miles east of Miami Beach, is Bimini, a British possession. A

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54 An individually distinctive pattern of typing in Morse Code, similar to a voice. Trained operators can recognize a ‘fist’ if given time. Friedman explanation of SIGINT, RG 26, NARA.

55 RG 26, NARA.
mere 90 miles from Key West is Havana, Cuba. In those days it served as a center for just about every kind of smuggling operation in the book. Bimini... was the main supply depot for Florida-based rummies... Unlike the big Rum Rows of the New England seaboard... Bimini simply could not be ‘dispersed.’

As an added boon to the rumrunners, the proximity of this island sanctuary solved their communications and navigation problems. When the coast was clear of cutters, bootleggers on the Florida coast would summon the waiting rumrunners with “five flashes east” from a high-powered directional light. A series of beacon lights, easily visible from the island, made life even easier for the runners – “a rummy skipper didn’t need a compass; all he had to do was steer toward the flashing light nearest his destination.”

Making matters worse for the Coast Guard, Florida residents were openly hostile to the anti-smuggling mission. Waters, again: “Bases were set up in Florida, at Fernandina, St. Petersburg and Fort Lauderdale. This was not exactly greeted with cheers by the locals, who made it pointedly plain that we were about as welcome as lepers at a fiesta.” Coastguardsmen were harassed by local law enforcement and threatened by locals following seizures or firefights at sea. In response, the service billeted its sailors in floating command bases anchored in harbor, thereby corruption-proofing and securing its force.

The CG-800 Class. A 1926 law authorized the government to retain any seized vessel for which it had use. The Coast Guard pushed this law to its limits and arguably beyond. The service had informally used seized captured rumrunners on a small scale prior to this law under

56 Waters, “Five Flashes East,” in Bill Robinson, 80 Years of Yachting (Dodd Mead, 1987).
57 Ibid.
58 Ibid.
59 Ibid.
60 RG 26, NARA.
61 Ibid. Willoughby, Rum War at Sea.
uncertain circumstances. But an act of banal bureaucratic brilliance allowed the service to turn the best of the rum fleet against the smugglers on an industrial scale. The problem with one-off items in a bureaucracy, such as seized custom rum ships, is that the system needs to make names for things. Otherwise, the institution cannot incorporate the item into its overall structure, and therefore cannot make value judgments as to maintenance and support costs, integration, and so on. Naming is a costly process - when something is not built to a common specification, the system needs to go back and name the item, and all of its constituent pieces, and all of their pieces. This is generally not worth the effort in a system that insists on fully formalizing the names of everything in its purview.

That is, unless you make a category whose only rule is that there are no rules. These ‘holding categories’ name the error term by making ‘unknown/other’ a recognizable category within the system. Within the bounds of that catchall, there is space for unstructured innovation, incomplete naming, and ultimately, tacit knowledge. There is a tension in this sort of category between the local and the global – if something is only intended for local use, it does not require the support of the larger system and hence only requires minimal naming. However, if the system wishes to retain, support, or replicate an item from within this category, it must give it an appropriately robust name. Hence even ‘islands of misfit toys’ within an institution must have an office symbol in order to survive.

The Coast Guard captured this idea perfectly with the CG-800 ships, a class whose only commonality was that they were all seized and therefore different. If the system needs a name, just give it a name; tacit knowledge can take care of the rest. Recognizing the tension between sustainability vs. naming cost, the service created two categories of captured ships. ‘Category A’

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62 For instance, a GOVT 999 course, or SOCOM, might be examples of ‘holding categories’ where difficult to formalize things are made legible and hence protected within a formal system.
ships were seized vessels of high enough quality or utility to justify incorporation into the larger ecosystem of support and maintenance. These ships, the CG-800 class (or if smaller than 40 foot, the CG-8000 class), could be transferred between stations and could use the central refitting facilities. Alternately, if a ship had some utility but was not worth naming, it became a ‘Category B’ vessel and given a designation in the CG-900 (or CG-9000, if shorter than 40 feet) class. These ships could be retained and used by local bases out of the commander’s discretionary funds, but they would not be maintained or funded by the larger institution.\footnote{There was also a third category, ‘C,’ for vessels that were not yet assessed.}

This two-track system allowed commanders to minimize naming cost while maximizing the utility of these seized craft. A few extra craft on hand, provided they were safe, might be used and discarded. A truly excellent craft could be preserved within the institution for a much longer life. As an added benefit, since these craft were non-regulation, rumrunners would have a more difficult time profiling them – “the advantage of using seized vessels… was ‘enormously increased by [their] nondescript appearance and … [it] spread consternation in the ranks of the enemy because of their inconspicuous appearance.”\footnote{Wheeler, RG 26, NARA. Ensign, \textit{Intelligence in the Rum War at Sea, 1920-1933}.}

\textit{Ad Hoc Recruitment and the Problem of Entanglement.} According to Waters, while these incremental seizures made slow progress, improvements in intelligence marked a sea change in the campaign.

The development of an Intelligence Section marked the turning of the tide in our favor. Known rумmys were placed on what was called a suspected list; their ownership was inquired into, their movements closely watched, and shipyards frequented by them came under close surveillance. The main rummy lairs of Bimini,
Gun Cay and Havana were infiltrated by Coast Guard agents. Root’s replacement, Lieutenant Commander Gorman, credited the “five undercover agents working in Cuba since 1925 with ‘practically [bottling up Cuba as a smuggling base.’" Root inherited this network from a retired Naval Intelligence HUMINT officer.

Where the assault on Rum Row marked the rise of imagery intelligence in the form of rumrunner visual identification books, the Florida campaign’s hallmark was human intelligence. The intelligence office was increasingly becoming a fusion cell, especially in its growing partnerships with overt collectors through the State Department: “regional dispatches detailing the arrivals and departures of vessels known to be engaged in rum smuggling were received from Halifax and Yarmouth, Nova Scotia; St. John’s, Newfoundland; Havana, Cuba; Nassau, Bahamas; Glasgow, Scotland; Vera Cruz, Mexico, and Bremerhaven, Germany.”

One side effect of this ad hoc network was entanglement – human intelligence inevitably involves human concerns and human agendas, which tend to divert policies from their original intent. Due to a source with strong antipathy to the ruling Cuban regime, Root was advocating to the Commandant for intervention in Cuba as well, a policy well outside his mandate. Overall, though, the service worked through these issues, and made good use of human intelligence – by the end of the case, the USCG HUMINT network “penetrate[d] major smuggling bases in St. Pierre, Nova Scotia, Nassau, Bimini, Havana and Curacao.”

*Rum HUMINT: Mirror Imaging.* The rumrunners certainly ran their own human intelligence networks, but we know little as to their structure. Spotters were certainly part of these

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65 Waters, “Five Flashes.”
67 Cusachs. RG 26, NARA.
68 Ensign, *Intelligence in the Rum War at Sea, 1920-1933.*
69 Ibid.
networks,\textsuperscript{70} as well as a few infiltrators,\textsuperscript{71} and probably wire-tappers as well.\textsuperscript{72} These networks provided their primary avenue of intelligence – since their goal was not to be seen, they could not use imagery well at sea, and as radios came into use, they could not keep up with the Coast Guard at cryptanalysis. They had money, and it was not difficult to find someone who lived near a base that was willing to look and talk.

The rumrunners seemed to mirror image their own reliance on human intelligence onto the Coast Guard. This became a particularly acute problem when the Coast Guard developed code breaking, as the syndicates ascribed intelligence-driven ambushes to leaks in their own organization. The Coast Guard made use of this:

More woes for rummies followed our setting up of a ‘Dirty Tricks’ department… our cryptographic wizards did the rest, cracking all the secret rummy codes aboard a six-bitter fitted out as a floating ‘black chamber.’ Strange things began to happen to rummies as they came ghosting in at nights, only to be greeted by sandpounders [surfmen] with drawn guns, and flotillas of six-bitters and picket boats backing them against the beach. Much to the consternation of the big syndicates, these ambushes were happening with such alarming frequency that they suspected a sell-out on the part of their own people, an illusion we did nothing to dispel. Scuttlebutt had three perfectly innocent rummy radio operators hauled before the syndicate courts on charges of selling secret codes to the Coast Guard and being given the concrete overcoat treatment.\textsuperscript{73}

\textsuperscript{70} Ibid. RG 26, NARA.
\textsuperscript{71} Ibid.
\textsuperscript{72} There was one report of cable-cutting referred from Root to J. Edgar Hoover, and another episode of stripped wires from a Coast Guard station which probably indicated wiretapping. RG 26, NARA.
\textsuperscript{73} Waters, “Five Flashes.”
Another source tells stories of the ‘Dirty Tricks’ department mailing tip money and thank-you notes to particularly troublesome rumrunners, in hopes of yielding similar results, but this seems sensational.\textsuperscript{74}

Certainly, though, the Coast Guard endeavored to set bootleggers against each other – in a letter to the Intelligence Office, the Gulf Division Commander noted that his “[Coastguardsman] Yancey has engineered a war among the bootleggers themselves and all hands are giving him information.”\textsuperscript{75} The analytical blinders that accompanied the rumrunner reliance on human intelligence impeded their counter-intelligence efforts and caused them to attack their own people without cause.

Altogether, all of these efforts maintained a stalemate with the better equipped and funded rum syndicates in Florida. In January 1927, the Division of Foreign Control reported the following to Root: “Have positive evidence firms in Nassau overstocked and that stuff is moving slowly. Suggest communicating in some confidential manner to your man at Ft. Lauderdale in order to exert utmost energy to keep it there. Kindly keep source of this information confidential. This is the moment to strike.”\textsuperscript{76} They did, but it took a much larger force to break the stalemate.

\textit{The Special Patrol Force.}

\textit{The Admiral writes me that he is going to take up the Florida situation so soon as he gets around to it. I wish that you [Root] and Steve would impress upon him the necessity of real strengthening of the fleet in this division... We are lion hunting with a peashooter. We have bagged quite a number of lions so far and

\textsuperscript{72} Allen, \textit{The Black Ships}; Willoughby, \textit{Rum War at Sea}.
\textsuperscript{75} RG 26, NARA.
\textsuperscript{76} RG 26, NARA.
Rumrunners first flocked to Florida because the Bahamas offered an ‘unsinkable Rum Row.’ While the use of seized rum-runners and improved intelligence helped impede the Florida rum traffic, the flow was too much to dam with this small force. The imperative was clear. The original rumrunner logic cuts both ways – while the Bahamas could not be sunk, they certainly could be blockaded. By 1928, the major contest off New England had turned in the Coast Guard’s favor for the time being, and they could therefore shift forces southward.

What really finished the rummies was a Special Patrol force for Floridian waters. This armada began to arrive in 1928. It included 12 destroyers, nine 125’ patrol boats, 25 six-bitters, two big ocean-going cutters, and a flight of amphibian planes. In addition, whole platoons of sandpounders were shipped south to reinforce lifesaving stations.

A near perfect replica of the assault on Rum Row followed, with the islands transposed for the motherships. Waters again:

A destroyer blockade strangled Bimini and Gun Cay right away, and the big offshore patrol boats mounted guard over the approaches to Key West. The few rummies who managed to elude the destroyers were usually bagged by a picket-line of six-bitters waiting for them halfway across the Gulf Stream, and the handful who managed to get all the way across invariably ran into ambushes set up by picket boats and sandpounders…the price of whisky and rum tripled and quadrupled along the Gold Coast. Some smuggling did persist right up to the bitter end of Prohibition, in 1933,
but only a mere trickle compared with before.77

Not to dampen the enthusiasm of Waters’ account, but this heavy-handed intervention came at a price. The British had agreed to allow cutters in the Bahamas, but a full-on blockade raised the ire of the colonial administrators, who pressed the British government for redress.78 With Britannic forceful subtlety, their consul prevailed upon the US State Department that, “I should be grateful also if it could again be impressed on Admiral Billard that such contraventions of the regulations by the United States Coast Guard, while otherwise possibly of comparatively minor importance, do in the present circumstances make it increasingly difficult for His Majesty’s Government to co-operate with the United States Government in the suppression of liquor smuggling.”79

The increased Coast Guard presence also further irritated the locals, who pressed their elected leaders in Washington to remove the irritant.80 Still, the Special Patrol Force put an end to large-scale smuggling in Florida, even if both the British and the Floridians were happy to see the surge force leave around 1929. The HUMINT networks and patrol tactics developed between 1926 and 1928 would allow the standing force to manage the residual force. With the disruption of the Florida trade, the bulk trade would shift again, and this time to even more constrained waters.

**Great Lakes, 1928-1930.**

Regarding the Windsor-Detroit Funnel: “The Lord probably could have built a river better suited for rum-smuggling, but the Lord probably never did.”

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77 Waters, “Five Flashes.”
78 Diplomatic Memos. RG 26, NARA.
79 Howard to DoS. RG 26, NARA.
80 RG 26, NARA. Waters, Smugglers of Spirits.
- Roy A. Haynes, Prohibition Commissioner.81

As an easily crossed boundary blessed generally blessed with cross-border amity, the Great Lakes have a long tradition of smuggling. Canadian historian Graeme Decarie holds that the British forces on the Great Lakes could not have sustained themselves in the War of 1812 were it not for smuggled American supplies.82 Unsurprisingly, the region was a smuggling hotspot since the Volstead Act – even before, as Michigan had state prohibition since 1917.83 Rumrunners had years to perfect their art.

Organized crime in the Lakes area thrived due to the inevitable traffic. However, as straightforward as it was to move liquor from one side of the lakes to the other, New York was 600 miles hard driving from Detroit. In order to mitigate the risk from this traffic, bootleggers needed to coordinate a network of protection arrangements for the route. This meant a lot of moving parts, and a lot of opportunities for error, and all this amidst threats from competing syndicates (and occasionally law enforcement.)84 Leading bootleggers sorted these arrangements primarily with bribes, but this still meant that Lakes liquor came at a logistics premium once it left the region.

The effective suppression of East Coast liquor overcame this premium, and the bulk of liquor smuggling moved to the Lakes. In 1927, Root provides a prescient picture of what was to come.

Except for the comparatively small amounts coming across elsewhere, it is believed that most of it comes through the wide-open flood gate at Detroit. Estimating the future from the success obtained by the Customs Service in closing this gate during

82 Decare, Graeme. “‘Cross-Border Shopping’ during the War of 1812.” http://www.galafilm.com/1812/e/background/histBorders.html
84 Willoughby, Rum War at Sea; Okrent, Last Call.
the last two or three months, I am inclined to predict that the flow of liquor through this channel will be effectively dammed before the close of the present calendar year. This will raise the pressure in Canada and running will begin to develop across Lake Erie and Lake Ontario… When these channels are stopped the trade may flow across by the land frontiers, but as this method is expensive I am inclined to be believe that we shall thereafter be called upon to combat an outflow of domestic liquor from the coast of British Columbia and again from Halifax and Nova Scotia and New Brunswick ports.85

85 RG 26, NARA.
This all came to pass. Customs and Prohibition managed to stem the tide from Detroit, which displaced the trade into the maneuvering space of the two eastern Lakes. In the ensuing conflict, the enforcers were forced to face interagency coordination problems amongst the patchwork quilt of Coast Guard, Customs and Prohibition along the border. Meanwhile, improvements in boat design and increases in force size wrested control of the lakes away from the smugglers.

**Hatch’s Navy.** The cramped waterway made for a different model of rum-running than the wide-open Atlantic or the Bimini-to-Miami run. This was a job for small craft – the distances were short enough and the waters calm enough that builders could focus almost entirely on speed. There were a lot of players in this enclosed space on all sides, which meant that there was little space to hide, but lots of opportunities to circumvent an adversary who failed to coordinate. Most importantly, this was a high threat environment – syndicates consolidated control of large scale rum-running after a brief period of independent dabblers in 1917 and 1918.86

Harry Hatch and his brother Herb, main rivals to the Bronfmans, built a fleet around these principles. With forty-two directly owned boats and an auxiliary of affiliated erstwhile fishermen, Hatch came to dominate the Lakes by 1927 at the latest. They fitted their craft with up to four Packard aircraft engines each, painted them in drab colors, encased them with armor, and fitted them with exhaust mufflers.87 Borrowing a trick from Bill McCoy, these craft carried liquor outboard in nets that trailed behind the vessel.88 This allowed them to drop their cargo on sandbars rather than docking and unloading; if pursued, they could jettison their wares and

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87 Schneider, *Ice*. 190.
88 *Ibid*.
outrun an intercepting law boat. Additionally, these craft held multiple nameplates in order to confuse customs on both sides of the border.

Just as important as these technological improvements, Hatch had the support of powerful networks in both Canada and the United States. While Canadian distillers normally eschewed ties with gangsters, in this case it proved unavoidable. An alliance with Rocco Perri, a Canadian Al Capone of sorts, provided their ‘navy’ with protection, surveillance, and intimidation. On the other side of the lake, Capone implausibly claimed, “I don't even know what street Canada is on,” but almost certainly had ties to Perri’s organization through Detroit’s Purple Gang. Hatch connected these networks, and was thereby able to route supplies and information effectively. It would be some time before the sundry agencies of the American and Canadian governments could say the same.

**Coast Guard.** The Coast Guard had a longstanding presence on the lakes, but the smuggling trade initially concentrated on land and river crossings. The Detroit-Windsor Funnel created by the Detroit and St. Clair Rivers inevitably formed the major focal point throughout. The Funnel provided the rumrunners with excellent geography and networks, and they would remain there if at all possible. Control of the passage was so complete that Americans would smuggle raw industrial alcohol or moonshine across for aging, and return loaded with aged whiskey. By the end of 1927, the Customs Service finally broke their stranglehold on the crossing, and liquor flows spread across Lakes Erie and Ontario. Hatch’s Navy would contest the control of the funnel for the rest of the case, but the boats making the crossing were now at risk.

91 Engelmann, *Intemperance, the Lost War Against Liquor*. 64.  
92 Schneider, *Iced*.  
93 Okrent, *Last Call*.  
94 Schneider, *Iced*; Okrent, *Last Call*.  
This is impressive, considering the Customs and Prohibition forces lacked professional boat crews, and all Customs ships were seized rumrunners until 1929. 96 Making matters worse, Federal forces had no binoculars prior to 1926; prior to 1927, they lacked handcuffs; they did not receive uniforms until 1928. 97 The Prohibition forces missed an opportunity for a proper fleet in 1925 due to red tape, and had to make do with whatever they could find or seize. 98 Still, the foothold gained in Detroit and the Coast Guard’s relative success in the Atlantic and Florida gave the suppressing forces a window to change the game. 99

A massive expansion in the Coast Guard presence on the lakes altered the tactical calculus of both sides. In 1924, there were no significant armed Coast Guard vessels in the region. In 1927, the service fielded four picket boats and one 75’ patrol boat. By 1928, this force grew to seven pickets and twelve ‘six-bitters.’ 100 But in 1929, the force expanded to more than fifty vessels, including three cutters – the Seminole, the ‘buck-and-a-quarter’ Crawford and the tug Chippewa. Sixty Customs speedboats and a mosquito fleet of motor surfboats further reinforced this fleet. As the Globe observed:

The Niagara Frontier promises to be livelier than it has been any time since the War of 1812. A patrol fleet of 250 boats is to be put into commission stationed at two-mile intervals and their efforts are reinforced by aeroplanes and radio equipment. Messages will be flashed along the route when liquor laden boats start out from the Canadian side and the chase will be on. 101

96 Engelmann, Intemperance, the Lost War Against Liquor. 80.
97 Ibid.
98 Ibid.
99 Engelmann, Intemperance, the Lost War Against Liquor. 249.
100 Hunt, Booze, Boats and Billions. 276.
101 Toronto Globe clipping. RG 26, NARA.
This force was intended to shut down smuggling routes along Lakes Ontario and Erie, as well as assisting in the Customs and Prohibition patrol areas. The cutters were overkill for the narrow Eastern Lakes, but excellent for deterring any larger craft from making the passage across the wider Lakes Huron and Superior.

As with the Slave Trade case, enforcement in the Rum War always included an aspect of ‘legal chicken.’ Since prosecution (or acquittal) hinged on the location of capture, both sides did what they could technologically to help their case. Rumrunners installed high-precision (and legally admissible) Chernikeeff navigational logs in their craft, while the Coast Guard took multiple soundings prior to a capture.102 But these were done more to produce evidence for a future trial - the present sea encounter was decided by this game of ‘chicken.’ Crews were indemnified for firing warning shots, or even lethal rounds, against craft that did not heave-to.103 In international waters, rumrunner tactics such as smokescreens or unlighted high-speed head-on passes violated the rules of the road, but these details were generally outweighed in the court of public opinion by a sinking or a shooting from Coast Guard fire. At that point, both sides had to decide whether or not they felt lucky that day – in Schelling’s terms, they needed to choose how far they were willing to go on the rocky ledge in the shadow of their future day in court.104

At least on the lakes, the main battlefield for this game moved from the courts to the waves – guns were no longer signaling tools but weapons. Root, who once recommended that the Coast Guard prioritize the apprehension of hijackers, now saw internecine rum violence as, “too bad.”105 Similarly, Root asked Billard about a crew’s informal administrative harassment of a rumrunner at sea, recommending that he proscribe these “technical arrests.” Billard responded

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102 Intel Memo, and Seizure Memo. RG 26, NARA.
105 RG 26, NARA.
“I see your point, but this ‘Donna’ is evidently a rummy and I think we might just let the matter ride for a while – can’t afford to discourage our people too much.”\textsuperscript{106} As in the last case, as the Rum War wore on, the criminals grew darker and the suppressors less pristine.

Upon this violent backdrop, the Coast Guard engineering corps attempted to retake the technical high ground. Hatch’s Navy held a strong speed advantage at the outset; this is in part due to their freedom from the shackles of a formal acquisitions system. Without having to design to specifications, they could build as they saw fit. This led to unpredictable results, but not all unpredictability is bad. It is always bad only when one has a fixed idea in one’s head about how one wants things to turn out. The problem is that one needs a fixed idea of the future in order to do predictable budgeting. Therefore, the conventional acquisitions process converts all future change into risk rather than a mix of risk and opportunity. Hence, the asymmetric adversary has a natural advantage.

As the federal acquisitions system evolved over time, it has come to include trust-based acquisitions alongside spec-based acquisitions. As described by Colonel (Ret.) Bill Grimes, in his \textit{History of BIG SAFARI},\textsuperscript{107} relational ties between engineers in industry and government provide an avenue to meet unique or exigent needs quickly. This comes at the expense of the economies of scale that come with formal specifications.\textsuperscript{108} The speedboat presented a unique challenge – everything in the craft was oriented toward maximizing speed, and the flexible ‘six-bitters’ could not do the trick. In order to price the speedboats out of the market, the service needed a mass-produced speedboat that could invalidate a generation of rumrunner craft. The service would have to formalize the state of the art in speed, found in the best of the captured

\textsuperscript{106} Ibid.
rumrunner designs. Formal engineering would have to advance in order to meet the artisanal sea
sleds tearing across the Lakes.

In order to build a fleet of previously-artisanal speedboats, the Engineering Corps would
have need to build formal theory for high speed craft; these theories were not yet robust.\textsuperscript{109} As
Figure 15 below demonstrates, they did – by specifying the relationship between speed, length
and displacement, they could plan and optimize their engineering tradeoffs.\textsuperscript{110} In 1930, the
Coast Guard fielded 33 ships of the CG-2265 class on the Great Lakes. These open speedboats
could reach 34 knots with Liberty or Sterling marine engines, and were the fastest USCG-built
ships of the period. While some rumrunners were faster, any slower than 30 knots were obsolete
upon the fielding of these craft. In this, the Coast Guard deployed the scalability advantage of
the state – while the rumrunners excelled in engineering \textit{bricolage},\textsuperscript{111} the service could formalize
and reproduce the best of the results of this experimentation.

\textit{Intelligence: Taming the Bureaucratic State of Nature}. The intelligence problem on the lakes
was not scarcity but clutter. There were too many contradictory fragments, and too many people
not talking to each other. The rumrunning rings made use of these coordination problems. A
lack of coordination between Canadian and American officials, or even between Customs and
Prohibition agents, meant that a rumrunner could provide bogus clearance information with
impunity. Without some sort of inter-organizational fluency, the various branches of law
enforcement would not be able to piece the truth back together. In the first half of the decade,

\textsuperscript{109} The key difference was between displacement-driven planing hull limiting speeds, and displacement hull length-
limited speeds. These were not apparent until Liberty and Sterling high power-to-size engines could ‘climb’ out of
their own bow waves. RG 26, NARA.
\textsuperscript{110} The originating memo explains more specifically, and is remarkably precise for that period compared to today.
RG 26, NARA.
\textsuperscript{111} Pierre Bourdieu and Richard Nice, \textit{Outline of a Theory of Practice} (Cambridge: Cambridge University Press,
1977).
this was particularly egregious – for instance, rowboats shipping out of Windsor with liquor cargoes cleared for Havana.\textsuperscript{112} By the middle of the 1920s, basic cooperation between the two sides of the border diminished these self-highlighting \textit{faux} clearances. More plausible clearances required better coordination to unravel.

\textit{Imposing Legibility.} A difference exists between anonymity, where actions are fundamentally untraceable, and privacy, where actions are retroactively traceable only in the event of wrongdoing.\textsuperscript{113} Fleets of unnamed and similar small powerboats are anonymous – the pursuer must apprehend a suspect on the spot, otherwise upon breaking contact they are lost into a faceless mass of like craft. Fleets of registered craft with license plates and serial numbers are private – one cannot determine ownership simply by looking at the ship. But if the ship commits wrongdoing, it can be traced and eventually found. General Andrews’ coordinating committee took this to heart:

A suggestion was made by some members of the Committee to the effect that the Coast Guard should send a sufficient number of vessels to the Detroit River to absolutely stop the traffic by weight of numbers. I [Root] took the position that the only remedy for the situation is to so mark each smuggling launch that it will be possible to make positive identification, and that when such marking is accomplished the vessels can be readily forfeited under the Tariff Act. The General [Andrews] was of this same opinion and he directed that the legal officers under his charge be mobilized to work on a plan.\textsuperscript{114}

In this way, the Customs Service gained leverage on the rum trade along the funnel. While

\begin{footnotesize}
\textsuperscript{112} Memos, CSR Intel Reports. RG 26, NARA.
\textsuperscript{113} Ernie Allen, President of International Center for Missing and Exploited Children. Public Conference, Spring 2014.
\textsuperscript{114} Andrews/Root meeting. RG 26, NARA.
\end{footnotesize}
private vessels under 5 tons did not need to be commercially registered, all craft were required to
display a license plate obtained from Customs.\textsuperscript{115} Non-complying vessels were liable for a
nominal $10 fine, and could be seized pending payment of the fine. This allowed Customs, and
later Coast Guard, shore patrols to make lists of suspected rum-running ships, and take note of
any newly arriving ship with an out-of-district registration.\textsuperscript{116}

Through this tacit metadata analysis, the suppressors made sense of the throng of small craft
in the region. Rumrunners began to carry multiple registrations, which impeded but did not
entirely stop this analytical tack.\textsuperscript{117} This administratively stripped the rumrunners of anonymity,
while preserving a reasonable expectation of privacy for a publically visible craft. Though
overmatched on the water, so long as a crew could positively identify a suspect craft, Customs
could later find and seize the craft with some detective work on the docks. This ‘institutional
legibility’ story was as much about coordination as formalization.

\textit{Regional Interagency Relationships}. Untangling jurisdictions amongst the various
interagency players was as difficult as untangling boat ownership. The Coast Guard was
responsible for all of the Great Lakes themselves, with the exception of Lake Michigan, as it
does not share a border with Canada. The Prohibition Bureau shared responsibility for the
Funnel itself with the Customs forces.\textsuperscript{118} Niagara Falls, the second major crossing which linked
Toronto to Buffalo, was Customs jurisdiction. Farther east, the St. Lawrence River and Lake
Champlain were also Customs’ responsibility. St. Mary’s River and the distant Sault St. Marie

\textsuperscript{115} 1918 law, United States, \textit{United States Compiled Statutes, Annotated, 1916: Embracing the Statutes of the United
States of a General and Permanent Nature in Force at the Close of the First Session of the 64th Congress and
Decisions Construing and Applying Same to April 1, 1916. Incorporating Under the Headings of the Revised
were registered with a letter, and a number, i.e. V-1234. The district registrations were: Detroit, A-, P- and H-;
Cleveland, N-; Buffalo, Z-; Rochester, Q-; Ogdensburg, Y-. RG 26.
\textsuperscript{116} RG 26, NARA.
\textsuperscript{117} Ibid.
\textsuperscript{118} Allocation of Jurisdiction. RG 26, NARA.
crossing were the only land borders that fell into the Coast Guard’s responsibility.

![Image](image.png)

**Figure 54: Divisions & Hotspots in the Great Lakes, circa 1927. (RG 26 Memo, CSR Intel Assessment.)**

Interagency coordination was the order of the day – direction from senior enforcement officials saw to that. Law enforcement saw Hatch, Rocci, and the Purple Gang as shared enemies, but they did not always see each other as partners. On one hand, informal partnerships provided the operational ligature of the Lakes region. Boatswain Casey of the Lakes District described this informal cooperation: “if I can work with Customs and free lance [sic] wherever they are pulling the loads as their chief wants me to do I can knock off plenty [of rumrunners.]”\(^\text{119}\) On the other hand, buck passing created holes in the interagency network, as evinced by a frustrated Canadian Customs Collector who was met with indifference as he tried to

\(^{119}\) Casey to Root. RG 26, NARA.
pass the names of rumrunners to American customs authorities.\textsuperscript{120}

The increasing Coast Guard presence seemed to resolve many of these problems. Perhaps this was due to their size - a hegemon solves a collective action problem, and the service had a clear strategy for the region by 1929.\textsuperscript{121} Perhaps it was due to the longstanding relationship between the Customs Service and the Coast Guard, or perhaps due to the massive influx of forces gave the region’s law enforcement hope that they might actually make progress. In any case, these relationships greatly improved from 1927 onward.

*National Interagency Picture.* By this point, the national web of interagency relationships had grown quite robust. Describing this network, Root listed the partnerships of the 1928 Intelligence Office. The Customs and Prohibition Bureaus were the most productive of these. The latter had, by this point, experienced a number of transformations. After Roy Haynes was fired, General Lincoln Andrews was given the task of repairing the graft-ridden department. The cancer ran deep, but at the very least, Andrews was able to enforce basic civil service rules on the department’s personnel practices.\textsuperscript{122} In 1927, the former Bureau of Industrial Alcohol chemist James Doran took over the bureau. He was a technocrat, focused on process and interagency cooperation. By this point, the social tide had turned on the Prohibition movement; though Doran’s reforms were too late to rescue his bureau’s eponymous law, they did help in the fight against smuggling.\textsuperscript{123} Under his watch his bureau charted a more positive course with the

\textsuperscript{120} Root Memo, RG 26, NARA.
\textsuperscript{122} Okrent, *Last Call.* RG 26, NARA.
\textsuperscript{123} That said, Doran did fine himself after Prohibition. Like Willebrandt, he worked for the liquor industry following Prohibition as a ‘Will Hays’ of sorts, after the man who renovated the film industry and founded MPAA. He allowed the industry to navigate the post-repeal administrative processes that he had a strong hand in creating in the run-up to repeal. Also like Willebrandt, it is possible that he did as much to aid temperance goals by changing the form of American drinking from within by suppressing it from without – under his watch at the National Distillers Code Authority, liquor eschewed predatory, addictive practices in favor of a ‘luxury good’ status. United
Coast Guard.

The relationship between Coast Guard had been strong even before the case, especially with the smuggling-oriented Special Agency Service. In general, Coast Guard focused on open seas, Customs on harbors and land borders, and Prohibition on liquor inland.

Beyond these front-line partnerships, the service maintained a somewhat fractious relationship with the State Department – in addition to treaty negotiations, State provided information on the movements of vessels through the British Consul. Along with the Justice Department, State also provided information on Coast Guard impersonators or collaborator in foreign ports.124 The Navy and the Interior Department provided information for various maps, which were essential to the legality of captures. The Navy also provided limited communications capabilities, though they ceased sharing codes with the Coast Guard early in the case.

The War Department’s G-2 (intelligence section) filled this cryptographic role, which led to the opportune relationship with Major William Friedman of the US Army Signal Corps that would give rise to USCG SIGINT.125 The Shipping Board, Steamboat Inspection Service, and Bureau of Labor provided general intelligence on suspected shipping, as “Alien Running, Smuggling, and Narcotic and Liquor running [were] very often performed by the same organization.”126 Finally, J. Edgar Hoover’s Bureau of Investigation followed up on threats and acts of sabotage or violence toward Coastguardsmen ashore. The span of the Intelligence Office

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Features, Oct 20 1933.
http://doc.wrlc.org/bitstream/handle/2041/16364/b01f06-1020display.pdf?sequence=1
124 Relationships between agencies memo. RG 26, NARA.
125 1924 Memo, RG 26, NARA.
126 CSR Quote. RG 26, NARA.
within the federal bureaucracy of the time was substantial, and largely built by institutionalizing *ad hoc* partnerships built through interpersonal relations.

One of the most important governmental partnerships was not in the federal bureaucracy at all. Habitual relationships bridged the various agencies on the American side of the border, but the rumrunner networks connected across the border itself. The logical imperative for the suppressors was to do the same. A 1926 scandal in Canada catalyzed the reorganization and expansion of the Customs Preventative Service from 1927-1929.¹²⁷ F.W. Cowan, chief of the renovated Canadian service, found common cause with the allied agencies across the lakes.

Root and Cowan built a partnership that shared intelligence, tactics, expertise and occasionally resources.¹²⁸ This relationship actually began through a bit of unpleasantness on the Niagara frontier. Root, in an amiable letter marked ‘Informal and Personal,’ assuaged Cowan’s concerns, arranged for him to meet Admiral Billard, and established direct liaison with his office from thenceforth.¹²⁹

As to the importance of personal relationships, Willebrandt once remarked to Billard, regarding a major trial,

> Your Intelligence Officer is also entitled to great credit for the successful outcome of this case… Prior to the trial he conferred personally with the Assistant United States Attorneys who were handling the case… I wish I could impress upon all concerned the value of personal contact between the investigating and prosecuting branches of the government… When prosecuting officers know personally the investigating

¹²⁸ CSR & Cowan Correspondence. RG 26, NARA.
¹²⁹ Ibid.
officers with whom they are working there is a mutual confidence engendered which begets active and effective cooperation. Good results then follow necessarily.\textsuperscript{130}

Cowan and Root’s partnership illustrates her point – people can sort through complexity in a way that process alone cannot.

\textit{The Surge’s Endgame.} With all of these pieces in place, the Coast Guard surge of 1929 and the reciprocal doubling of the Canadian excise forces translated directly into effective suppression. In 1928, the USCG averaged a major capture per week on Lake Ontario.\textsuperscript{131} In 1929, the Coast Guard seized more than 2,500 vessels; in 1930, just shy of that same number; in 1931, they seized almost 3,000 craft.\textsuperscript{132} The capture toll from 1930 and 1931 was especially grievous, as these craft were increasingly difficult to replace. During this time, the Lakes rum fleet lost the two key pillars of its logistical foundations – American demand and Canadian sanctuary.

The Stock Market Crash of 1929 and the Depression that followed deeply depressed American liquor demand. This sent the entire rum trade – including the much larger domestic moonshine and industrial bootlegging rings – into upheaval. It would make life difficult for the Coast Guard in the early 1930s as budgets dried up, but the rum market felt the impact instantly. The same market whose amazing profits kept the ambitious rum-running enterprise afloat caused it to come crashing down when those profits disappeared. Rumrunning along the Eastern Seaboard would eventually recover for a re-match of Rum Row. The Lakes had no such luck, as the crash came at a particularly inopportune time.

\textsuperscript{130} Willebrandt to Billard. CSR Quote. RG 26, NARA.
\textsuperscript{131} Hunt, \textit{Booze, Boats and Billions.} 276. USCG averaged a major capture per week in 1928 on Lake Ontario. Went from 4 pickets and one six-bitter in 1927 to 12 six-bitters and 7 picket boats on the lake in 1928.
\textsuperscript{132} Ibid. 303. 1929, USCG seized 2571 vessels, in 1930, 2441 vessels, in 1931, 2929 vessels.
In 1930, years of Canadian-American talks resulted in the long-awaited King Amendment. Canadian vessels setting out with cargos of liquor were required to post double bond upon withdrawing liquor from government regulated warehouses. This bond would only be paid back to the vessel’s owner upon production of a valid certificate of sale from the intended destination. Canadian vessels could no longer clear cargoes direct for the United States under false pretenses. The Maritime Provinces could, and did, launder rum through St. Pierre. Hatch’s Navy had no such option - the industrial-scale facilities of the dockyard were off-limits to them. Local nuisance-grade running remained, but the pipeline to the thirsty New York metroplex was cut.

Lieutenant Commander Gorman, Root’s replacement as Intelligence Officer, tells the story well.

On the Great Lakes the passage by the Dominion of Canada of legislation prohibiting clearances of vessels for the United States with liquor cargoes … had practically eliminated organized smuggling of distilled spirits on the Great lakes, and as long as this legislation is in effect there can be no resumption of the orgy of smuggling which existed on the Great Lakes in the years 1928 and 1929. There is sporadic smuggling of distilled spirits in small quantities, but organized efforts are negligible… Since June, 1930, smuggling on the Great Lakes has been confined practically to the smuggling of ale and beer in small quantities. This smuggling is carried on by individuals in small power boats or skiffs.\footnote{Gorman assessment. RG 26, NARA.}

Smuggling on Lakes decreased (estimated) 80% due to Canadian law prohibiting clearances effective 1 June, 1930.

Increase on Atlantic Coast due to decrease on Lakes is estimated at 20%.
As the Commander noted, the fight returned to where it began – the Maritime Provinces and the Eastern Seaboard. Ultimately, a combination of changes in Canadian laws and the stock market crash disrupted the rum market in the lakes. As predicted by Root, this sent the trade back to the Maritimes to challenge the Coast Guard once more on the New York rum frontier.

New York, 1930-1936.

The beginning of the new decade brought dramatic changes to the Rum War’s game board. As mentioned, the cataclysm of the depression threw the trade into tilt. It also caused the nation to seriously begin to rethink the 18th Amendment. This was poor timing for the Coast Guard - the newly elected President Hoover actually attempted to enforce the Prohibition law, appointing the Wickersham Commission to determine how that might be done.\footnote{Okrent, Last Call; George (Chairman) Wickersham Commission Wickersham, National Commission on Law Observance and Enforcement. No. 1. Report on The Enforcement of the Prohibition Laws of the United States, Reprint (Patterson Smith, 1968).} Unfortunately for the Coast Guard, this was a doubly losing proposition – the surge in enforcement money mostly went ashore, and their relatively successful fight afloat was caught up in the ensuing disappointment on land.

According to Andrew Sinclair’s social history of Prohibition, at least on land, “there was no real attempt at enforcement until ten years of bungled effort had exhausted the tolerance of the public.”\footnote{Ensign, Intelligence in the Rum War at Sea, 1920-1933. Andrew Sinclair and Richard Hofstadter, Prohibition: The Era Of Excess (Literary Licensing, LLC, 2012).189} In his attempt to reverse this trend, Hoover soon discovered, in his words, “the futility of the whole business.”\footnote{Sinclair and Hofstadter, Prohibition.} The Volstead Act was too far out of line with American mores, and the Prohibition Bureau too weak to make up the difference. The terminal decline of Prohibition, including enforcement budgets, had begun.
USCG: Rebuilding on a Budget. In the interim, the service began to recapitalize their abused destroyers and invest in more cutters with the Hoover-backed funding. The combination of economic collapse and Prohibition weariness undermined these plans. The six most run-down destroyers were replaced by newer Clemson-Class ships transferred from the Navy. In general, though, this was a belt-tightening time for the service. Force multiplying technologies, especially ones that could be developed in-house for minimal cost, were the order of the day – being out of money, the service had to think their way through.\textsuperscript{137}

Rumrunners: The ‘Banana Boats.’ This was a rebuilding time for the rum fleet, as well, and they did so quite well. Rum interests began investing in a specialized rum smuggling ship as early as 1925. The resulting vessels began construction in 1926, and up to 80 of these specialized vessels continued production through 1933 in the Maritimes.\textsuperscript{138} These craft could elude pursuers and used diversified landing options, much like the late-phase slavers, to move liquor ashore – summer residences, sandy beaches, even simply floating it ashore.\textsuperscript{139} They would then sneak back out the way they came in, moving one load per month or more.\textsuperscript{140}

The USCG Intelligence Officer heard of an advanced class of rum-running ships as early as 1928, and sent an intelligence-gathering mission to the Nova Scotia Dockyards.\textsuperscript{141} In the words of the Intelligence Officer,

\begin{quote}
“The enemy has of course been studying our methods, and it appears that he has, temporarily at least, found an answer to our operations on the New England coast… The operations [of the fast rum runners] have been so successful that the price of
\end{quote}

\begin{footnotes}
\textsuperscript{137} Quote attributed to Winston Churchill, but more likely from physicist Ernest Rutherford.
\textsuperscript{139} Parker, Rumrunner. 151.
\textsuperscript{140} Intel Estimate, 1 trip/month, RG 26, NARA.
\textsuperscript{141} Ensign, Intelligence in the Rum War at Sea, 1920-1933.
\end{footnotes}
Skotch [sic] whiskey in Providence is as low as $36 per case [less than half the price for an equivalent case in NYC at the peak of suppression.]

Captain Farley of the destroyer WILKES recalled the encounters with these vessels first hand.

After being on this rum patrol for several months a few things are evident. One is that a destroyer cannot patrol one of these new fast rummies like the GOOD LUCK, etc. They can lose a destroyer in the fog or even a dark night, without even half trying. This does not even consider tying up a scouting vessel to the duty of trailing them. Another is that the 100- and 125-foot patrol boats are practically useless for trailing purposes when the rummy has from two to four knots greater speed. Another thing is that if we are unable to trail these rummies something else must be done. The question is, what?

These craft could outrun the smaller craft, turn inside the destroyer’s maneuvering radius, and make good an escape with its stealthy low-profile design. Rumrunners had long realized the speed and turn rate ‘sweet spot’ between the fast destroyers and the nimble patrol boats; instead of threading a needle with tight tolerances, the improved performance of these craft pried these margins wide open. The Intelligence Officer commended the task to the Coast Guard’s engineers:

As there are now, at least, eight of these vessels it would seem that it might be possible to specialize on them. If we can produce a checkmate within a short time it might be possible to discourage the construction, by the smugglers, of additional

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142 RG 26, NARA.
143 RG 26, NARA.
vessels of this dangerous type… Their action in constructing these vessels has placed it squarely up to our own construction.

This resulted in the *Thetis*-class 165-foot patrol cutters – a vindication of Captain Wheeler’s preference for medium-sized cutters over destroyers, these ships served their purpose well and effectively countered the ‘banana boats.’ However, given the fiscal constraints of the time, it would not be until 1934 that the class was fielded in force. The Coast Guard needed a creative and cheap solution in the interim.

*Signals Intelligence.*144 In a black market, the syndicates needed to formally coordinate their actions. They built a strong network around the United States, including radios on every one of the fast rumrunners. The greatest strength of the ‘banana fleet’ was their radios. Through *ad hoc* partnerships, organic innovation and organizational learning, the Coast Guard turned it into their greatest weakness.

The Rum Fleet had relied on a number of rather rickety authentication and coordination systems prior this point. As the trade became violent, rumrunners found ways to avoid keeping large sums of cash aboard. In a practice that parallels *hawala* networks or bitcoin, purchasers would pay for liquor in advance from a syndicate seller on land. The buyer would receive one half of a torn dollar bill, and the other half would be sent to the rumrunner in Canada along with the purchase order. Once full of orders, the rumrunner would depart for the Eastern Seaboard, where the buyer would meet the liquor ship at a sea rendezvous point. The captain would match the contact boat’s half-dollar to their purchaser order half-dollar, and deliver the appropriate

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144 For a complete treatment of Coast Guard cryptography during this case, see David P. Mowry, *Listening to the Rumrunners* (National Security Agency, Center for Cryptologic History, 2002). Kahn, *The Codebreakers.*
amount of liquor.\textsuperscript{145}

The Coast Guard readily exploited the vulnerabilities of these fixed-rendezvous models. Captains lacking probably cause for arrest could conduct extended ‘safety checks’ on vessels clearly headed for a rendezvous. These might take hours, or to paraphrase one captain, ‘as long as it took for the rummy to go from agitated to apathetic,’’ presumably due to missing his window.\textsuperscript{146}

Radio changed all of this. As described by Gorman:

One rum-running syndicate pays the man in charge of its radio installations $10,000 a year. The radio communications on the west coast are directed from Vancouver by a radio schoolmaster versed in the most intricate system of codes and ciphers. Rum ships are in charge of former British Naval Officers. Under present conditions on the west coast the Coast Guard is practically impotent. On the east coast the Coast Guard harasses and annoys the rum ships, but the results in proportion to the effort expended is pitifully small… in the past year [1930] there has been an increase of 34 per cent in foreign rum-runners. We are now back to where we were three years ago with this vast difference[;] the rum-runners are organized on a basis that makes the methods used three years ago practically obsolete. \textit{And their radio communication system is the key to this organization}.\textsuperscript{147}

The radio threat was not entirely new to the Coast Guard. They had been sparring around the edges of the technology with the syndicates since late 1925. Commercial transatlantic long-wave

\textsuperscript{145}Okrent, \textit{Last Call}; Frederic Franklyn Van de Water, \textit{The Real McCoy} (Mystic, Conn.: Flat Hammock Press, 2007).

\textsuperscript{146}RG 26, NARA.

\textsuperscript{147}Gorman memo 1930. RG 26, NARA.
radio links and pirate shore stations carried rumrunner messages between rum bases from 1924 or perhaps even earlier. A private citizen by the name of Iversen, a technician at the New York Times radio station, noted this illicit maritime-themed traffic and reached out to the Coast Guard. The Intelligence Office recruited him as a part-time radio intercept operator, and the resulting “Radio New York” partnership gave the service access to high-level rumrunner decision-making. This arrangement lasted until at least 1927, during which Iversen maintained low-level contact with Yeardley’s “American Black Chamber,” an early national signals intelligence agency.

The electromagnetic topography began to shift away from these high-level links and toward tactical ship-to-shore links. In addition to coordinating large volume sales or infrastructure shifts, the syndicates began to install radio sets on their affiliated ships, and they increasingly used radio links to coordinate rendezvous and drop-offs. As their communications moved from the strategic to the tactical, the rumrunners grew increasingly interested in cryptography.

Accordingly, the Coast Guard grew increasingly interested in cryptanalysis. As previously mentioned, Root recruited Elizebeth Friedman as the Coast Guard Cryptanalyst-in-chief in 1927. This excellent hiring move hailed from a serendipitous back-story, and itself serves as back-story to the larger radio intelligence campaign.

During the First World War, the service used Navy codes, but at some point after the war, the Navy decided to cease sharing their cyphers with the Coast Guard. The U.S. Army Signal Corps was the next logical choice, which is where Root met Major William Friedman in 1924.

Reasoning that an expert in code-making was also an expert in code-breaking, Root reached out

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148 RG 26, NARA. Mowry, Listening to the Rumrunners.  
149 RG 26, NARA. Ibid.  
150 Ibid.  
151 WFF to CSR, 1924. RG 26, NARA.
to Friedman as the rum-runners moved toward encrypted radio. By late March 1927, they broke a challenging combination code-and-cypher together:

This office, in conjunction with Major Friedman, Code and Cypher Section, War Department, has succeeded in breaking messages of the FEDERALSHIP... The fact that these people have used both codes and ciphers indicates the business organization behind the west coast ring. It is hoped that the messages will be useful in the successful prosecution of the ring.

This partnership proved productive; and while Friedman was already fully employed by the Army, Root convinced the Prohibition Bureau to hire the equally talented Elisebeth Friedman on his behalf. She had previously served as a cryptanalyst with the Navy and Riverbank Laboratories, knew Spanish, and had previously broken codes for the Coast Guard on a volunteer basis.

This office knows of no available person so well fitted for this duty as is Mrs. Friedman... It need hardly be stated that in this game of wits in which we are now engaged, the breaking of the enemy’s communications is not only of great importance but is probably the most efficient single operation in which we can engage, and in such an operation the cryptanalyst holds the key position, and the most skillful is none too good.

These sorts of opportunities cannot be planned, but they can be captured by an organization that empowers their people to seize them. Root’s ability to identify and recruit talent allowed him to

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152 Ensign, Intelligence in the Rum War at Sea, 1920-1933.
153 CSR-Friedman Hiring Recommendation. RG 26, NARA.
154 She temporarily worked for the Intelligence Office in 1926. Hiring memo, RG 26, NARA.
155 Roy A. Haynes, acting Prohibition Commissioner in the interregnum after Andrews’ resignation, approved the hiring. In the opinion of this author, this is probably the best, and possibly the only, strategic move he made. Hiring approval, RG 26, NARA.
turn a Naval bureaucratic foible into an alliance with the foremost family of American
cryptology. Cryptanalysis would be Root’s final contribution to the Rum War, and it may have
been his most important.

These techniques came to maturity under Gorman, who transformed code-breaking from an
intelligence source into a tactical capability. In a time of mounting fiscal austerity, the service
could not afford to ‘ratchet’ away this new generation of rumrunners. Gorman hoped that ‘radio
intelligence,’ a combination of high-level capabilities and tactical coordination, might tilt the
game in favor of the legacy Coast Guard fleet:

One of the purposes of the radio intelligence unit is to obtain greater results from the
same expenditure of effort; in other words, to employ the present equipment of the
Coast Guard to the best advantage. The cost of the entire radio intelligence unit is
less than the cost of operation of a single destroyer or cutter or of three or four patrol
boats, and the results that should be obtained are worth more than the results of
operating a squadron of destroyers or patrol vessels.\textsuperscript{156}

He directed Lieutenant Frank Meals of the Communications Section to stand up a field
cryptanalytic cell in New York in 1930. Meals recalls this process in later memoirs: “being a
new game no one, including myself, knew much about it and consequently I was given a free
hand to work out the problem.”\textsuperscript{157} This involved some amount of stumbling, as well as a
problem reminiscent of the modern metadata controversy. If a secret code is any good at hiding
its contents, one cannot sort criminal coded traffic from benign coded traffic without decoding
both.

\textsuperscript{156} Gorman 1930 Memo. RG 26, NARA.
\textsuperscript{157} RG 26, NARA.
Unfortunately, we made mistakes – some of them ludicrous. For instance we once copied what we thought were rummy code messages only to find that they were Christmas greetings, in Norwegian. Also we copied for days a legitimate Mexican government station before we found our mistakes… bit by bit, we segregated the “illegal from the legal”, and eventually succeeded in breaking into certain of the rummies code.\textsuperscript{158}

These problems were worked out, and Meals set up his section in directly liaison with the Destroyer Force, in order to serve as a forward intelligence unit with real-time analysis capabilities. Mrs. Friedman provided oversight for the cell, as well as reach-back support for particularly difficult codes. The pride of the Intelligence Unit was the CG-210, a ‘six-bitter’ equipped as a “floating black chamber.”\textsuperscript{159} The first American signals intelligence ship, this craft mounted radios in multiple frequency bands and a high-precision direction finding set. Commanded by an officer, and crewed by technicians and a cryptanalyst, this craft proved devastatingly effective. The Army loaned Major Friedman to the Coast Guard for two weeks to christen the ship. According to Kahn in \textit{The Codebreakers}:

\textquote[Between September 14 and 27, 1930, Friedman solved the code used by a group of smugglers operating off New York and read the operating orders to their ships, completely preventing them from transferring any liquor to shore for several days. [Gorman wrote:] ‘The resulting confusion to this group of rum ships was more than all the efforts of the destroyer force and the other units combined have been able to effect in a number of months – and it should be remembered that this was accomplished by a single patrol boat with nine men about which never went near

\textsuperscript{158} Meals (?) history. RG 26, NARA.
\textsuperscript{159} Waters, \textit{Smugglers of Spirits}. 
Gorman and Friedman continued to preach the virtues of radio intelligence, and the service converted. Commander Jack of the Florida Division remarked, “our intelligence has become so efficient of late that searching has narrowed down to a few hours’ work during daylight.”161 Another division commander remarked, “since the Intelligence Unit of this Division has been functioning we are in possession of more information of the liquor organization’s operations than has ever been the case in previous years… We are beginning to learn [the rumrunner’s] contact points and will undoubtedly know them all in the course of time.”162

The commandant noted that “obtaining RR’s operating orders was ‘the most important single item combating rum [running,] … [whereas] any other systems of intermittent trailing and dropping [rum-runners] [have become] totally ineffective as the organization of the RRs is so perfected that immediately orders are given to counteract the reported movements of the Coast Guard cutters.’”163 These techniques allowed tactical units to plant false information and set traps for the rumrunners, ambushing them at drops and generally wreaking havoc on their operations.164 The Coast Guard could not get enough of signals intelligence.

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160 Kahn, *The Codebreakers*.
161 RG 26, NARA.
162 RG 26, NARA.
163 Ensign, *Intelligence in the Rum War at Sea, 1920-1933*.
164 The “Dirty Tricks Department.” RG 26, NARA. Waters, *Smugglers of Spirits*. 
The next two years saw a full-scale assault on the rumrunners’ electronic architecture, which was by this point quite substantial. Consolidated Exporters had consolidated their hold on the American rum-trade, with radio networks stretching around the entire American coast. Friedman diagrammed the multi-tiered cryptography, holding that “some of these [codes] are of a complexity never even attempted by any government for its most secret communications. At no time during the World War, when secret methods of communication reached their highest development, were there used such involved ramifications as are to be found in some of the correspondence of West Coast rum running vessels.”\footnote{Friedman quote. Kahn, \textit{The Codebreakers} 804.}

The service dismantled this network using the signals intelligence ship and ground teams, pinpointing both rum-runners at sea and their shore relay stations. The New York Intelligence Unit trained apprentice units as the Engineering section modified new signal intelligence patrol ships. Rather than establish a formal training pipeline, the Intelligence Office took an artisanal approach - new crews would learn theoretical foundations and then accompany the CG-210 crew
on missions. Once the senior crew determined that the training crew had reached full
proficiency, they would be given their own craft and sent as a new intelligence unit to another
operational division.\footnote{This growth created a problem similar to the surge in the Predator community around 2007. The SIGINT 75’s were commanded by an officer rather than a boatswain, due to the need for secret code security. This was unusual, as normally an officer would serve on a much larger vessel. With a personal rather than an industrial personnel management system, the service picked the right people for these unique jobs, and took care of them afterwards despite their detour from the ‘normal’ career path.} By 1931, CG-131, CG-214, and CG-141 were enroute to Mobile and San Francisco as fully operational radio intelligence units.\footnote{Ensign, \textit{Intelligence in the Rum War at Sea, 1920-1933}. Also RG 26, NARA.}

The rumrunners attempted to counter these capabilities, but lacked a better means of
communication and synchronization. Their most effective countermeasure was broadcasting ‘in
the blind’ from a shore station – rumrunners afloat would receive without responding, as the
‘radio intelligence’ ships could not determine a fix without a transmitter. This reduced the
threat, but it hampered operations and did not protect the shore-stations. Within a year or two,
the Coast Guard became very quick at localizing these pirate radio stations – according to
Gorman, ‘what used to take months now takes hours.’\footnote{Intelligence Memo. RG 26, NARA.}

The rumrunners held an edge in performance afloat, which continued to grow as budgets
dwindled. But SIGINT made the legacy Coast Guard ships far more effective, and radio
intelligence capabilities improved more quickly than the syndicates could counter. This resulted
in a stalemate that would last as long as the Volstead Act.

\textbf{Repeal, 1933.} Franklin Delano Roosevelt was elected on a platform that included the repeal
of that act. He delivered on this promise in the early part of 1933 – the 18\textsuperscript{th} Amendment
prohibited ‘intoxicating liquors,’ while the Volstead Act defined ‘intoxicating liquors’ as
anything 0.5\% Alcohol by Volume. As the 21\textsuperscript{st} Amendment worked its way through the system,
the Cullen-Harrison Act reset the Volstead definition to 3.2% ABV and thereby legalized light beers. This saw a brief drop in liquor traffic, though the trade rebounded quickly. Rum-running had almost returned to 1932 levels, at least off of New York, when the 21st Amendment drove rum-running to an absolute low during the case. This lasted for about six months.

*Theory: Bootleggers and Baptists, Backwards.* In the “Bootleggers and Baptists” critique of moral regulatory politics, criminals and moral crusaders both gain from prohibitionary regimes. Therefore, these policies are backed by seemingly contradictory coalitions. During the waning days of Prohibition, this was true on land – contributions from gangsters and religious groups backed anti-repeal lobbyists. At sea, it was not.

A period newspaper article entitled “Rum Runners Want Repeal, U.S. Informed,” explains the rumrunner’s thinking. Both Canada and Finland attempted their own forms of Prohibition, and both experienced major smuggling problems following repeal. Rumrunners expected the same to be true of the United States, due to a combination of high expected liquor taxes, reduced enforcement expenditures and diminished legal leverage following repeal.

Profits were lower after Repeal than during Prohibition, but the risk was lower as well due to diminished enforcement leverage. Making matters worse, Americans thirsted for aged whiskey, and none would be available domestically for quite some time. Since the rumrunner bases at St. Pierre had a great deal of capital tied up in smuggling, there was no sense in dismantling the industry quite yet.

‘Peace Dividend.’ Even before repeal, the Intelligence Office noted in 1933 that:

Vessels formerly in the rum running traffic, which had been laid up for months and in

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170 Unidentified Clipping. RG 26, NARA.
some cases years, are now being outfitted and rushed back into the illicit traffic. Recent official reports from Canadian sources indicate during the past month a resumption of activity comparable only to the situation which existed several years ago before the Coast Guard was organized to effectively combat smuggling. International rum syndicates are quite evidently under the impression that law enforcement will be more lax than formerly; that penalties meted out for violations of the Customs laws will be much lighter and that in general there will be less risk and more profit in liquor running…

It therefore appears to this office from a study of smuggling conditions in foreign countries and from knowledge of the present activities of the rum-smuggling rings, that there can be no curtailment of Coast Guard anti-smuggling operations until the international smuggling organizations now operating are put out of existence, and it can be said almost with certainty that this will not occur within the next two years.171

Institutional militaries try to minimize the inevitable drawdown that follows the end of a war, and these gloomy predictions must have sounded like that familiar chord. Policy analysts from early think tanks broadly agreed, estimating $50 million per year lost per year to liquor smuggling.172 This was more than 10% of the expected alcohol excise tax income. Still, increasing enforcement of liquor laws during the Depression in the immediate wake of Prohibition was too politically difficult. From a 1934 account, “repeated requests of the Coast Guard for funds, necessary to carry out its duties, particularly to control smuggling, and to protect the revenue of the Government, have been denied.”173 The Coast Guard would draw

171 Intelligence Memo. RG 26, NARA.
172 Newspaper Clippings. RG 26, NARA.
173 Memo. RG 26, NARA.
Destroyers departed the force entirely, with the last of them returned to the Navy by 1934. The ‘six-bitters’ took a major hit, dropping from 203 in 1931 to 58 in 1934. The cruising cutters and larger patrol boats retained most of their force. Picket boats were halved from 195 to 109. The number of lifesaving stations remained stable, but the suppression-oriented section bases fell from nineteen to three. Aircraft inventory and the number of 165-foot patrol boats continued to grow through July 1934. These two types of craft partially offset the patrolling vacuum left by the destroyers. The patrol craft and bases were not offset at all.

The manning situation was worse. According to a 1934 memo, “Not only has the Coast Guard felt these losses of men and units, but the drastic, quick retrenchment occasioned thereby, has been a serious blow to the morale and, therefore, the efficiency of the remaining force… funds for the payment of enlisted personnel for the current year are inadequate, and unless the situation is relieved, it will be necessary to discharge or disrate, or furlough without pay, additional men.” The memo’s author, likely the Commandant, asserts “such a step would be a serious reflection upon the Federal Government in breaking faith with men of long and faithful service to their country… a breach of implied contract on the part of the Government.” This was a disheartening time for the service.

In some cold solace, the dour predictions of resurgent smuggling proved correct. By the summer of 1934, there were as many boats hovering off of New York as in 1928 and climbing fast. An estimated $30 million of revenue was lost in 1934, and if unchecked, 1935 promised to double that number at least. Since the Canadians had been losing something in the range of $30-

174 Ibid.
175 Ibid.
176 Ibid.
45 million per year under similar conditions, this should not have been a surprise.\textsuperscript{177} The form of this smuggling was familiar – the trade picked up where it left off with the same radio-linked swift stealth ships.

\textit{Rebuilding}. Given that the Coast Guard ‘peace dividend’ was only $10 million per year, the government began to see the reduction in forces as a bad investment. The half-sized, demoralized force could be swarmed and defeated, especially without its scouting destroyers or an adequate number of replacements. The second half of 1934 saw a reversal of the decline and a re-capitalization of Coast Guard forces. This buildup registered primarily in the new large patrol boats and in Aviation, and it allowed the Coast Guard to complete a restructuring it began in 1930.

Admiral Billard launched a service reorganization project during his last year as Commandant.\textsuperscript{178} Admiral Hamlet carried it through to completion as the drawdown set in, doing away with the various overlapping lifesaving, patrol and cruising forces and consolidating regional divisions under single commanders. Henry Morgenthau, the new Secretary of the Treasury, asked the Coast Guard to take the lead of all Treasury organizations in these districts – having one clear commander who curated diverse capabilities aided interagency coordination.

The divisional structure also worked well with the growing intelligence and aviation capacities, provided the relationships within these divisions were as flat as the Commandant’s guidance intended. Notably, when these organizations were run hierarchically, these special units did not do as well. Commanders that directed actions from the top, yet lacked the technical

\textsuperscript{177} Allison Lawlor, \textit{Rum-Running: Stories of Our Past} (Halifax, NS: Nimbus Publishing, 2010). 93. ‘The customs revenue went down between $70 and $90M in two years’ – it is unclear whether this is per year or total, but I assumed the former. Since the 1930 US Dollar was 2.07 Canadian dollars, dividing by two accounts for the currency conversion. Depending on the estimate, this could be cut in half once more if the $75-90M was an aggregate number. Either way, there was some non-trivial sum of smuggling losses.

\textsuperscript{178} Billard Memo. RG 26, NARA.
knowledge to grasp these capabilities, failed to make effective use of these cells. As case in point, Wheeler and had a major breakdown with his Intelligence Lieutenant in the California Division due to micromanagement.\textsuperscript{179} In general, though, this structure allowed the diverse technical capabilities developed over the course of the campaign to be smoothly brought to bear at the front lines.

The return of funding put substance on the divisional framework. By the beginning of 1935, 18 \textit{Thetis}-class 165’ patrol ships were operational. This was up from nine half a year prior, and six as of 1932. These were Wheeler’s replacement for the Destroyers – six knots faster than the ‘buck-and-a-quarters’ and designed with a tight turning radius, they could stay with the new generation of fast rum ships at a fraction the cost of a Destroyer. They performed this task well, and along with the still-new Lake-class fast cutters, the remaining half of the patrol fleet, and the still-rapidly-advancing SIGINT capabilities.

The Secretary of the Treasury built a seven-fold plan for the renewed campaign. From a 1935 memo recounting the strategy, the measures undertaken included: 1) Increased financial support to the USCG, and improved intelligence; 2) Negotiations to shut down international sanctuary, along with domestic legal improvements; and 3) Improved coordination of the interagency process, and improved cooperation with the Canadians.\textsuperscript{180} These were all the result of costly lessons learned. With this strategy in place, the last major campaign began.

\textit{Aviation.} The framework was still missing one piece. A natural choice for quickly clearing large volumes of space, aviation arrived in force only in late 1934, even though the service sought the capability in various ways since the beginning of the case. If SIGINT was the greatest

\textsuperscript{179} Wheeler CA memo, 1934 (?) \textit{RG 26, NARA.}
\textsuperscript{180} Parker(?) 1935 Memo. Reflected verbatim in Waesche 1938 Memo. \textit{RG 26, NARA.}
example of innovative Coast Guardsmen seizing the day, then aircraft were the great missed opportunity.

The meme, ‘buy more airplanes,’ turns up time and again amongst the tactical suggestions sent to Headquarters throughout the campaign. While there were no true enemies of Coast Guard aviation, it didn’t catch on until very late in the case despite a number of halting attempts. This was not due to a lack of demand, but a rare case of a lack of senior leader interest combined with bureaucratic inertia.

This is perhaps a study in path dependency. Had aircraft been included as a structural piece of the initial 1924 doctrine, it is likely they would have been adopted more quickly and upgraded in some deliberate manner. The doctrine, especially the personnel growth to support the doctrine, created constituencies around platforms. One year later, the service asked for money for aircraft – there was some logic in starting with what they knew, and then folding the experimental aircraft into the mix later. Unfortunately, the mix was set by then. Congress was less forthcoming with funds as time went on, and new capabilities were harder to justify than replacement ones.

Increasing the air fleet from 16 to 43 between July and December 1934 changed the world of the possible for Coast Guard aviation. The new types were higher-performance amphibians or long-endurance patrol craft, ideal for scouting as well as rescue operations. Critically, they could easily communicate with vessels and shore stations through their electronics suite, and they had good enough navigation to pass a fix of a rumrunner to a cutter from the open ocean.

Morgenthau would later remark in 1939 that “practically the whole air arm of the Coast Guard

181 RG 26, NARA.
182 Inventory memo, early 1935. RG 26, NARA.
has been created during the last five years [i.e. 1934-1939.]

The combination of a recapitalized patrol fleet, robust intelligence capabilities, and a burgeoning air fleet formed the final model of the rum war. The Commandant explained this fusion of sea, air and intelligence in a 1934 tactics bulletin:

The Intelligence boat (or any unit suitably equipped) detects black radio traffic and obtains a radio bearing. The air station of plane (standing by) is notified of the bearing of the “black.” The plane takes the air and flies to the position of the patrol boat and passes over her on the course (corrected navigationally) corresponding to the bearing. Upon reaching the black the radio-equipped plane circles overhead and calls for radio bearings from all direction-finder units… The bearings are transmitted by units taking them together with the latter’s positions to a designated patrol unit, and the plot places of the position of the “black” which can then be sought and trailed.

If the rumrunners abandoned their radios, the aircraft could still search for them. There was no way to outrun or hide from an aircraft, other than inclement weather. And the circling aircraft could call a cutter at its convenience. This rumrunner-hunting model allowed no ready counter.

Remarkably, this model parallels the “Find-Fix-Finish” approach of counter-terror fame. Once the rumrunner pops onto the intelligence grid, a persistent air asset is sent to maintain eyes on the craft, or ‘fix’ it. When operationally advantageous, a cutter will board and ‘finish’ the offending vessel.

In order to beat this approach, the rumrunners would have had to re-boot their entire business model. This would have been costly. Social support had begun to turn against them following

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repeal – no longer romantic outlaws, legal alcohol had made the rumrunners just outlaws. From an intelligence memo in 1935:

Unmentioned previously herein is the effect of a changed public attitude following Repeal. This has been very helpful in contributing to control. Many who were hostile to enforcement efforts during Prohibition are today either indifferent or openly favorable.\textsuperscript{184}

Therefore, they could no longer recoup losses or recapitalize the way they once had. A reboot was impossible, and the end of the large-scale illicit liquor trade was just a matter of time.

Only $6.5 million was lost from the treasury due to liquor smuggling in 1935, around 20\% of the 1934 number. The last spike of the rum trade was in the early summer of 1935, and it fell precipitously from there. From the same 1935 report:

As a result of the cumulative effect of the efforts expended by the Government the organizations and individuals promoting smuggling have suffered a severe blow. Efforts are being exerted by them to develop new methods of supply such as chartering vessels to transport cargoes from Europe for delivery on the high seas to smaller vessels or to run directly into large ports where maritime traffic is great and there is the possibility of slipping in as a legitimate vessel not subject to routine inspection. This is an effort on the part of those to whom ‘easy money’ has been the fondest recollection of the heyday of the smuggling traffic. There will always be smuggling in some form and amount but liquor and alcohol smuggling as evidenced during the last fiscal year is declining as a major problem under the pressure exerted

\textsuperscript{184} Parker (?) memo. RG 26, NARA.
by the Government.\footnote{Ibid.}

What little of the trade remained had fizzled out by 1936, with the liquor ships melting back into the Nova Scotia fishing fleet, or in a few cases, hardening into opium or migrant smugglers. Coast Guard Intelligence ceased tracking suspected rumrunners entirely on account of irrelevance by 1939. Operational life returned to traditional lifesaving missions and routine law-enforcement by 1936 with the end of organized rum-running.

\textit{Rumrunners’ Postmortem.} Retelling this story from the lens of the Boxer model, the Coast Guard flattened itself as quickly as it could without falling apart in the process. The syndicates tried to stay as flat as they could as well, but security and enforcement pressures drove them toward hierarchy. So long as support remained strong, the Coast Guard could execute a ‘ratchet’ strategy and continue to pin and pound their opposite number, which they did on Rum Row, in Florida and on the Great Lakes. Simultaneously, the service’s intelligence section built an extensive relationship-based trust network amongst interagency and international partners.

Suppression support gave way around 1930, but the Coast Guard was able to innovate a series of high-leverage low-cost technologies – SIGINT especially – in order to hold the syndicates in a stalemate off New York. The 21\textsuperscript{st} Amendment did not end rum-running, but it did restore social support to smuggling suppression; this did not register as effective direct support to the Coast Guard until the return of maritime liquor smuggling in 1934. With well-honed innovation networks, and newly-restored support structures, the service brought the campaign to a close – the new liquor norms of high taxes and lower consumption held.

We conclude by letting the characters of this case speak for themselves. In November 1938, Coast Guard Commandant Admiral Waesche assesses the effectiveness of the seven-fold
strategy in retrospect in a letter to the Secretary of the Treasury.

By September, 1934, the traffic was well established and reached its post-repeal peak... The liquor bases were in the process of the replenishment of stocks... With definite evidence of a resumption of organized rapidly accumulating, every possible avenue of approach to the problem was examined and any which was found to promise results was pursued...

The cumulative effect of the vigorous measures... soon reflected a gradual dropping off of the illicit traffic... Since March, 1936, there have been, to be sure, a few sporadic attempts at smuggling by the Nova Scotian fleet, but they have failed through quick detection and tenacious trails by Coast Guard patrols which forced the “rummies” to shift their locale to the area surrounding the Maritime Provinces. Today, November 16, 1938, offshore alcohol smuggling can be said to be non-existent and completely dispersed.
SECTION 3 CONCLUSION: PLAYING BOTH DECKS.
THE RUM WAR, THE BOXER MODEL, AND TACIT-FORMAL SYNTHETIC STRATEGIES.

As we said in the beginning, it is difficult to code the Rum War, or protracted unconventional conflict in general, as a ‘win’ or a ‘loss.’ The span between the 18th and 21st Amendments left the world far worse for the Prohibitionist movement, but would have been a strong draw for the ideals of the supplanted Temperance movement. Considering the Rum War in isolation, the Coast Guard played a much greater role in the world of 1937 than they did in 1924, while the opposite holds for smugglers.

Over that decade and half, we find a good deal of multi-faceted variation for testing the Boxer model. As with British slave trade suppression, this case includes a number of sub-cases that move together in a common current. In contrast to that case, the Rum War was frontloaded. Support was strong at the outset, but weakened as time went on. Adjusting the goals in the endgame restored enough support to lock in a stable outcome.

Once again, this is a model for the ‘Admiralty,’ not the ‘Prime Minister,’ and I make no assessment on the wisdom or desirability of the Anti-Saloon League’s ends. Clearly, movement leaders would do well to do better than Wayne Wheeler in assessing the world of the possible prior to setting out on such a campaign. But if we treat suppression objectives as given, the strategic imperative is clear in this case – take and hold as much ground as you can up front, and hold it as long as you can. When you can no longer hold, negotiate the best compromise you can in order to restore support and lock in as much progress as you can.

Ops Progress. We began with the Operational Progress Script, which posits that an illicit market will prefer external focal points until suppressed by patrols, and then shift toward internal coordinating structures in a black market. If that black market is suppressed by interdicting that
internal structure, demand restructuring will begin as path dependences shift to alternate goods over time. The case as a whole fits this framework very well. The sub-cases are strongly linked, but they demonstrate the same dynamics episodically.

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<td>(Sub-case, 1930-33)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endgame</td>
<td>N/A (Grey Market non-Viable)</td>
<td>Resurgent Rematch. (1934-1935)</td>
<td>High Liquor Taxes. (1933-present.)</td>
</tr>
<tr>
<td>(Sub-case, 1933-36)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The grey market phase of liquor smuggling was ‘Rum Row’ – the three-mile line provided a focal point for buyers and sellers. The Prohibition Bureau ‘Navy’ failed to disrupt this grey market, as they lacked the resources for effective patrol and lacked the organizational efficiency to innovate ways around the shortage. The Coast Guard, an efficient and newly-well-resourced organization, solved the patrolling problem and dispersed the row. The loss of this ‘focal point,’ along with the darkening influence of hijackers and other violent criminal actors, sent the rum smuggling trade into the black market phase. Rumrunners moved to syndicates and radios, and the Coast Guard moved toward interdicting those coordination channels.

Florida’s Bimini and Gun Cay grey rum market survived the ineffective Prohibition ‘dry navy’ period, though initial Coast Guard suppression efforts in 1925 demanded more coordination from rumrunners. The destruction of Rum Row sent a surge of smuggling to Florida, which brought with it strong syndicates. That surge led to a countervailing Coast Guard move - the Special Patrol Force brought overwhelming force with strong intelligence backing.
and disrupted these networks.

A similar story played out on the Great Lakes – due to unfavorable geography, a lack of interagency coordination and an overall force imbalance, rumrunners and bootleggers had nearly unchecked use of the Detroit-Windsor funnel. Through bringing adequate patrolling forces into the region, the fight migrated to the wider lakes; using intelligence and law enforcement coordination, these lakes were tamed.

The return to New York and the post-repeal endgame continued the ‘deep hovering’ black market in the wake of Rum Row. The rumrunners developed an effective business model of radios and new vessels that defeated the patrolling blockade. However, in order to maintain this system, they became vulnerable to new forms of electronic interdiction – the Coast Guard use of ‘radio intelligence’ held them in check. Finally, when force could be brought to bear once more, the service disrupted the black market.

Interpreting demand shifts during this period is difficult. It is clear that rumrunners would use these border crossings and hovering points whenever they could. Early in the case, bootleggers would use ships to move liquor between domestic markets as well.¹ The Coast Guard blockade denied the rumrunners free passage on the oceans and waterways, which was the primary avenue for aged whiskey. In the various regions, an effective blockade resulted in higher liquor prices, lower liquor quality, and more price pressures on alcohol in general.

This pressure drove demand toward moonshine, industrial alcohol, and more benign semi-legal drinking avenues such as home-brew beer and wine. These pressures contributed to the changing social meanings of drinking, the fall of the saloon and the rise of the speakeasy and coded social drinking. In the endgame, Coast Guard pressure put an early end to post-repeal

¹ Memo, RG 26, NARA.
smuggling and locked in high liquor tax rates. Altogether, the Operational Script serves as an efficient heuristic to describe the main case. It is consistent with the stories of the sub-cases as well.

Organizational Change. The organizational change script posits that performance in the operational script derives from a combination of relative efficiency and relative support. Efficiency is the ‘market-like-ness’ of the suppression regime vis-a-vis its adversary; support describes the depth of social demand for suppression as expressed through the political system versus the depth of demand for the illicit good. Competing explanations include power, or the magnitude of state force brought to bear on the problem; regimes, which looks to the design of international institutions as the best predictor of success; and norms, where the diffusion of social meanings changes the acceptability of a given practice.

As in the British case, the suppressor took a number of different tacks in the international sphere. When facing Latin American states, the United States proved willing to use force. This was both direct, in the form of unilateral boarding, and indirect through human intelligence networks. An initial tack of force toward the British proved counter-productive, and the United States instead built a series of legal regimes. Norms were not a major player in this case – while an international prohibitionist movement inspired a Canadian assault on drink, the Prohibitionist movement could barely manage to prop up the Prohibition Bureau. Wheeler was a master of the American political structure, but he lacked a grasp of policy and of the international arena. Internationally networked norm-driven suppression support remained beyond the organizational imagination of the Anti-Saloon League. As in the previous case, the suppressor proved most successful when employing a combination of informal networks, legal regimes to shut down sanctuaries, and the state’s ability to bring power to bear against fixed targets.
No one model adequately explains progress through the campaign, so the combination Boxer ‘network’ hypothesis best explains progress in the Rum War. Power is a strong runner-up, especially in the Florida and the Gulf surges, but it fails to explain how the Coast Guard begged, borrowed, and stole a stalemate from 1930-1933. Regimes help to explain some of the diplomatic progress with the United Kingdom in the late 1920s, but the American approach was heavy-handed in the international space and generally eschewed these answers. Moreover, the best regimes were informally constructed between peer operators across borders through shared problems and experiences; these ‘epistemic communities’ were not the result of transnational legal frameworks. Traditionally, such communities fall into the ‘norms’ camp, but neither the Canadian Excise Service nor the Coast Guard was particularly excited by the evils of drink – they were professionals, and their duty included the prevention of smuggling. The strongest case for norms was the failure of the unpopular ‘Dry Navy,’ but that outcome was over-determined.

<table>
<thead>
<tr>
<th>Case</th>
<th>Efficiency: (Direction of Variation/Effect on Progress)</th>
<th>Support: (Direction of Variation/Effect on Progress)</th>
<th>Adequate Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rum War at Sea</strong> (Main, 1920-1935)</td>
<td>USCG Trust Networks (+/+), Root’s Recruiting (+/+) Interagency Fusion (+/+)</td>
<td>USCG Initial Surge (+/+), Pre-Repeal Cuts (-/-), Post-Repeal Resurgence (+/+)</td>
<td>Networks, Power (?)</td>
</tr>
<tr>
<td><strong>Prohibition “Navy”</strong> (Sub-case, 1923)</td>
<td>Corruption (-/-)</td>
<td>Ineffective Acquisitions (-/-)</td>
<td>Norms, Power, Networks</td>
</tr>
<tr>
<td><strong>New York Rum Row</strong> (Sub-case, 1924-25)</td>
<td>Planning &amp; Intel (+/+), Experience on Rum Row (+/+) HUMINT (+/+), Partners, Fusion Cells (-/-, +/+), Tech Innovation (-/-, +/+)</td>
<td>USCG Initial Surge (+/+)</td>
<td>Networks, Power</td>
</tr>
<tr>
<td><strong>Florida</strong> (Sub-case, 1926-28)</td>
<td></td>
<td></td>
<td>Networks, Power</td>
</tr>
<tr>
<td><strong>Great Lakes</strong> (Sub-case, 1928-30)</td>
<td></td>
<td></td>
<td>Networks, Power</td>
</tr>
<tr>
<td><strong>Return to New York</strong> (Sub-case, 1930-33)</td>
<td>SIGINT (+/+), Regional Coordinators (+/+), Aircraft (+/+),</td>
<td>Prohibition Exhaustion (-/-), Stock Market Crash (-/-)</td>
<td>Networks, Power</td>
</tr>
<tr>
<td><strong>Endgame</strong> (Sub-case, 1933-36)</td>
<td></td>
<td></td>
<td>Networks, Regime</td>
</tr>
</tbody>
</table>

**The Rum War as a Case.** In a biographical sketch of Charles Root, Coast Guard historian William Thiesen notes, “in studying the historical record of by-gone days, scholars often come across men and women whose deeds have gone largely unrecognized.” The same might be said of the case as a whole. These men and women were given a thankless job that they did not want,
did far better than could realistically have been expected, and their deeds were either forgotten or derided in public memory. The Rum War was fought for uncertain, unrealistic, and ill-considered ends, but it was fought well regardless.

The Coast Guard went the distance with a well-matched adversary. In the course of fighting, they generated a great deal of data about the mechanics of two highly adaptive networks in conflict. The things that they uncovered in the process speak to myriad contemporary problems.

*Intelligence.* The Rum War was an intelligence story – to my knowledge, it was the first major case of modern tactical multi-source intelligence fusion. Their final targeting model foreshadows the ubiquitous ‘find, fix, finish’ counter-terror network attack model. Throughout the case, we see the classic intelligence tension between decision-maker support and operator support\(^2\) - by the end of the case, the service converted “black chamber” national technologies into real-time geolocation capabilities. In the publicity-hungry Prohibition bureau, we see the problems of leakers and the strains that these actors place on interagency intelligence sharing.

We find the tension between collections and operations throughout the case – every time the Coast Guard would break a shore station’s code, they had to weigh the value of seizing the station against the intelligence loss that would result. The introduction of SIGINT patrol boats into the Destroyer force’s area of operations demonstrated the challenges of integrating national capabilities on the tactical level. On one hand, unity of command is essential, on the other hand, a commander may waste a high value asset due to ignorance of its capabilities. These craft also came with familiar sustainment problems – they required relatively senior personnel to operate well, which concentrated strong performers in relatively small units and took them off the

normal career path. In all cases, Coastguardsmen sorted these things out through conversations, and only later codified that consensus.

Finally, fusion cells and interagency cooperation were a recurring successful refrain throughout the case. Coastguardsmen reached across agency and even national boundaries to build partnerships and acquire key resources. Root was able to crowd-source open source social intelligence from volunteers using the post office, a feat that was recently replicated by Libyan rebels in 2011 using Internet-linked volunteers.3

These facile partnerships continued through to the Second World War, with Coast Guard “guardian spies” serving as frogmen with the Office of Strategic Services.4 These antebellum approaches sought solutions in operator agency rather than bureaucratic process. One wonders if the chronic stove-piping problems and bureaucratic games of the American intelligence community are not a reflection of the Soviet bureaucracy they were built to counter in the wake of World War Two rather than a necessary fact of life - and if it would therefore be possible to return to something that would look more familiar to General Donovan.

Counter-Insurgency and other ‘Wicked Problems.’ Strange as it sounds, the Rum War makes for an interesting counter-insurgency case. Florida, at the time, was sparsely populated; local leaders were deeply entwined with the rum-running networks. Elected officials nullified the law by non-enforcement, but played both the rum fleet and the feds off of each other. Local law enforcement engaged in all manner of complicit acts, including violence or even murder.5 Coastguardsmen were clearly unwelcome, and had the flavor of an occupying army to the ‘wet’

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5 Root FL summary, RG 26, NARA.
local residents. Still, lifesaving as a form of public good provision assuaged some of this rancor. These are all familiar dynamics from the world of counter-insurgency.

The most damning parallel concerns the coordination, or lack thereof, of players in these contested spaces. This passage from Willebrandt’s 1929 critical memoir of Prohibition enforcement hits close to home:

With responsibility divided as at present, there is no way for the President, Congress or the people to put a finger on the weak spots of enforcement. Even this discussion of mine, pointing out various weaknesses in enforcement efforts made so far, is bound to leave the reader with a hopeless feeling of, ‘well, to whom can I look to drive out politics that is dominating United States attorney’s offices, to raise civil-service standard for agents, to compel coordination of border forces, to restrict alcohol permits and to improve regulations?

And the answer now is, ‘a dozen different people.’ The result is constant evasion of responsibilities and the passing of blame from one to another when a bad condition comes to light. The heads of the Prohibition Unit, Customs Service and other investigative agencies, as well as the Department of Justice spend much of their time saying, in effect ‘It wasn't I, it was the other fellow who failed in his duty and let the bootleggers slip through.’

No great additional sum of money is needed to improve prohibition enforcement. There is plenty of man-power, though not all of the right kind or always made to work for the best advantage. For instance, there are six separate investigation units of the Treasury Department, besides one in the Post-Office Department, one in the Immigration Service and one in the Department of Justice. If they were made to work
together in the right way, with the proper interchange of information and personnel, there would be more of the racketeer type of bootlegger caught and convicted: the man at the head of the liquor rings.\(^6\)

This advice seems good medicine for any of a number of different interagency ‘wicked problems.’ Not least of these is the problem of human trafficking, which is presently being engaged by the Departments of State, Defense, Justice, Homeland Security, along with state and local law enforcement, a slew of NGOs, and the US Agency for International Development. The President’s Interagency Task Force on Human Trafficking brings many of these players together, but there is a major difference between a committee and a conversation, and this conversation has a long way to go before it approximates the ‘market-like-ness’ of its adversaries.\(^7\)

**Conclusion: Playing Both Decks.** This was ultimately a story about people in institutions, and about overcoming the limitations of formal institutional logic without losing one’s way in the process. On excerpt from Stanley V. Parker’s vision for his Intelligence Office stands in stark contrast to modern bureaucracy:

> **PLANS:** Avoid making fancy paper plans, keep in touch with forces, improve coordination, link up all units and organizations, disseminate information rapidly and to all units interested or affected, gradually eliminate impediments now slowing up dissemination of information.\(^8\)

James C. Scott’s classic critique of high modern institutions is that they lack a language for tacit knowledge, and as a result all practical local expertise is discounted in favor of formal written

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\(^8\) Parker Memo, RG 26, NARA.
theories and policies. Parker seemed to agree, and sought to solve this problem by building relational bridges and thereby allowing others’ knowledge to flow organically throughout the organization. In doing so, he demonstrates a core insight about bureaucracy – an institution that deploys both tacit and formal knowledge will out-perform one that applies formal knowledge alone.

Prohibition gangsters knew well the formal limitations of the state. Al Capone publically toyed with his law enforcement foes, all but admitting to a host of crimes in print. But he never quite did admit them, and while it may be plainly tacitly obvious that Capone’s thinly veiled threats went hand in hand with violent acts from his enforcers, there is no case without a formal evidentiary connection. It is not illegal to be Al Capone, and while you may know that he’s a murderer, and he may know that you know, the state can do little about it unless he makes some sort of mistake. In effect, he was dealing cards from both the tacit and the formal decks, while the state could only deal from the formal deck. Capone knew that his law enforcement adversaries would clearly understand his tacit meanings, but were bound by their own formal rules; he seemed to enjoy provoking the frustrations that naturally ensued.

The state learned to return the favor. While there was no formal law against Capone, surely there was some formal law from which he forgot to protect himself. The tactically agreed objective for Capone’s enemies was to put the gangster behind bars – all involved knew that he was who he presented himself to be, they just had to find a way to prove it. The law was no respecter of persons, but there was a person clearly breaking the weightiest laws, and there had to be a legal way to put him away. While the formal laws against tax evasion were meant to secure

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10 Ibid.
the federal revenue, and there were bigger tax cheats than Capone, the gangster forgot to cover his tracks in this regard and a conviction could get him off the streets. Tacitly, the Bureau of Investigation was after Capone for murder, but they could formally deal him a sentence on something else entirely.\footnote{11} This involves some ethical questions – a system of selective prosecutions based on tacit knowledge can easily be abused. In this case, it was not.

Throughout this case, the Coast Guard similarly dealt in both formal and tacit knowledge, as did its opponents. For instance, the service monitored domestic rum-running shipyards for intelligence on new adversary craft. The craft would be laundered and registered as yachts or fishing vessels, and there was no formal charge against building a swift, low-riding cargo vessel.\footnote{12} The builder knew exactly what the ship was for, and the Coast Guard knew what the ship was for, and the owner knew that the Coast Guard knew. But all involved also knew that the Coast Guard could not formally prove any of this. Nonetheless, the service’s intelligence organs used this shipyard visits to catalog future threat craft and determine their performance in advance of meeting them in the formal contest.

While tacit knowledge is powerful, it does not always trump formal knowledge. As an example, when rumrunners first began to install 400 horsepower Liberty engines in contact boats, they had a tendency to bend the propellers above 20 knots.\footnote{13} In another case, a rumrunner crew bought a bulletproof steel shell for their boat, but only realized that they needed to temper the steel when bullets passed straight through the armor on a run.\footnote{14} Tacit knowledge was quick to innovate, but it was not always smart to innovate. Rumrunners spent considerable time and

\footnote{13} Ibid. 124.
\footnote{14} Ibid. 128.
effort re-innovating solutions that had already been formalized.

There must then be some crossover point when an idea moves from the tacit-dominated space of initial brainstorming to the formal-dominated space of testing and fielding. A strong acquisitions system will therefore carve out space for low-level innovation. In addition, it will build avenues for specifying and implementing ideas that emerge from that space.

The same holds true with command and control technologies. The same sort of communications technologies that build vertical ties between a commander and their troops can also be used to build lateral ties between peer-level commanders. This is true whether these links are telegraphic wires or fiber optic cables. The flat lateral ties greatly accelerate innovation, but in doing so they reduce the brokerage of senior leaders. Leaders must then balance the overall vector of communications in their organization – because of personal proclivities for control, this vector generally tends to be too vertical and therefore too slow. I offer one adage that helps strikes that balance - “never let your connectivity exceed your maturity.”

In the course of this case, we find individual agency animating, and often altering, bureaucratic structures. While some people will game the formal metrics of an institution for their own personal gain, others will game the same metrics in order to get the mission done. In a well-designed structure, that latter group will be able to find some avenue to conform those metrics to real measures of mission effectiveness. In some cases, the members of an institution might institutionalize their mission beyond their own bureaucratic incentives – as Secretary of the Treasury, Andrew Mellon held the Prohibition enforcement in contempt, but tasked the Coast

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Guard with it nonetheless. In the course of the campaign, Coast Guard members determined what it would take to win; they began to advocate for a panoply of measures well beyond their initial tasking, and beyond Mellon’s comfort level.

These efforts took them into the interagency and the international. In *Man, the State, and War*, Kenneth Waltz described three fundamentally structural theories of action – either the psychology of individual leaders, the institutions of the state, or the nature of the international system explained the shape of international relations.16 This is, then, a ‘first-image’ theory of sorts – instead of a ‘great man’ theory, it is a theory of people making something of their world together by jointly altering the constraints they were given. The strictures of the interagency and the international were certainly constraints, but these constraints stopped neither these service-members nor their opponents. If agentic individuals in community can route around structural impediments, then they can “shape and shove”17 structures right back. Institutions are made of people, and people are full of surprises. Theories that do not make space for these surprises are liable to be surprised nonetheless.

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SECTION 4: APPLICATIONS
CHAPTER 11, HISTORICAL CASE CONCLUSIONS: CIRCLING BACK.
THE STATE SPACE, THEORY TESTING RESULTS, AND OPTIMAL STRATEGIES.

In the first section of this monograph, we built a general theory of transnational illicit market suppression, which we have tested with the historical cases in sections two and three. In this final section, we will evaluate the theory’s ability to explain the historical cases. We then apply the theory to four present-day mini-cases – while these vignettes lack the span and within-case variation of the historical cases, they allow us to test the generalizability of the model. We then conclude with a general survey of transnational illicit market suppression attempts and policy recommendations.

As a refresher, we built the Boxer model by spiraling outward from a simple regime until we accounted for all possible interaction pathways between the illicit regime and the suppression regime. This yielded the ‘Complex Competing Regimes’ theory. We then transformed this theory into the ‘Dynamic Competing Regimes’ theory by abstracting out to two meta-variables – Efficiency and Support.

Finally, we implemented the imperatives from this model with the parallel Operational and Organizational Scripts. The organizational script predicts that the suppressor will flatten their organization in order to counter the relatively flat illicit market while buttressing support as much as possible. The operational script predicts that the suppression campaign moves through three phases: shutting down the high-volume ‘grey market’ by patrolling, suppressing the hardened ‘black market’ with interdictions, and breaking path dependencies in ‘demand shift.’ If the model proves robust, we would expect that suppressors would gravitate toward these scripts, given adaptive processes, competitive pressures, and time.

We will wrap up our historical cases by working back out from the applied scripts to the
general regime theory through three nested loops. First, four epochs parsed from the expansive historical cases – Early and Late Slave Trade Suppression, the ‘Dry Navy’ and the Coast Guard during Prohibition - fill the state space of Efficiency and Support. We perform a ‘macro’ test on the model by evaluating the coherence between the operational and organization scripts in these epochs. Finally, we explore the various pathways of the complex competing regimes model for a complementary ‘micro’ test.
The State Space.

<table>
<thead>
<tr>
<th>Relative Support</th>
<th>Relative Efficiency</th>
<th>Description</th>
<th>Example Dom. Strat.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Success</td>
<td>Late Slave Trade (RN, 1840-1860) Endgame</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strong Stalemate</td>
<td>Early Slave Trade (RN, 1820-1840) Endure</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>Weak Stalemate</td>
<td>Late Rum War (USCG, Circa 1930) Adjust Goals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failure</td>
<td>Early Rum War (Proh, Circa 1922) Reboot</td>
</tr>
</tbody>
</table>

The Boxer model’s two variables together carve out the classic political science four-square. A suppressor with both better relative efficiency and deeper relative support is winning – they can generate new cognitive models and act on them more quickly than their adversary. The goal of the suppressor should be to arrive in this success space. If they can occupy this space long enough to fully suppress the illicit market and restructure demand, their best strategy is to pursue an endgame to lock in those gains.

During late phase of slave trade suppression, the British abolitionist movement was still in full swing, providing ample social support. The slaver’s demand was collapsing, as industrialization and new constituencies reshaped the Brazil and Cuba polity. The Africa Squadron had become adaptive force of veterans, and the slavers were increasingly losing their access to coordination and technology. The British were able to bring force to bear quickly and repeatedly during this period, and were able to secure the eradication of the Atlantic Slave Trade.

Conversely, a suppressor with relatively inferior efficiency and support will find themselves in the failure space – an institution with no ability to bring force to bear, and no depth to buy
enough time to make it right. This space must be avoided. Should the suppressors find
themselves in this danger zone,\(^1\) they should reboot their objectives to something more realistic,
their choice of suppressing institution to something less incompetent, or both. The social
movement backing suppression may lose coherence if it remains in this ‘coffin corner’ for too
long.

The ‘Dry Navy’ of the Prohibition Era lived in this corner. The Prohibition cause suffered
from incomplete support, and overwhelming demand fueled the Rum forces. Rumrunners
innovated fairly efficiently at Rum Row and ashore; with unredeemably poor early manning
choices, the ‘Dry Navy’ could not sort out any sort of tactical adaptive processes. It was
appropriately put out of its misery.

The two most interesting spaces are the stalemates, where one variable is high but the other is
low. In both, the suppressor must convert their advantage in one into an advantage in the other
and thereby advance into the success quadrant. If they stall in these spaces for too long, their
advantage will decay and they will fall into failure.

The combination of low efficiency and high support constitutes the strong stalemate, so
named because the clock favors the side that retains support. Endurance is the strongest hand to
play here – spend support slowly as you flatten your organization and build efficiently.
Simultaneously, the ‘ratchet’ strategy reduces an opponent’s maneuvering room and hence
degrades his efficiency. In concert, these should improve relative efficiency and shift the
campaign into the success quadrant. If the suppressor does not improve their efficiency, they
will eventually spend down their support and fall into the failure quadrant.

\(^1\) Dan Kois, “Archer Heads Into the Danger Zone,” Slate, October 10, 2013,
http://www.slate.com/blogs/browbeat/2013/10/10/archer_season_5_trailer_promo_music_is_danger_zone_by_kenny_loggins_of_course.html. Just checking if anyone actually reads the footnotes.
Early British slave trade suppression exemplifies this quadrant. The abolitionist movement was deep and strong, even in comparison to the demand for slaves in the Americas. The Admiralty, though an institution with strong traditions and culture was unprepared for the rigors of West Africa. The West Africa Squadron’s early frigates stand as symbols of this, substantial but ill-suited to the mission at hand. But the squadron was learning, improving, adapting and flattening. On this trajectory, it would match its foe if given enough time. The judicious use of political capital during this period bought that time.

A strong suppression regime with weak support yields the weak stalemate. Without support, time favors the illicit market.\(^2\) This notwithstanding, a strong suppression network can lock in a partial set of demand shifts while it still retains the initiative. They should hold as long as they can maintain a position of strength, and then scale back the suppression regime’s goals in order to restore support. With increased support for the reduced goals, the suppressor can move to the success quadrant and secure their gains.

The Coast Guard endgame during Prohibition, especially in the period surrounding repeal, follows this pattern. The service was a very efficient institution, easily building ad hoc ties on a strong foundation of trust, but the bottom fell out of Prohibition and with it the budgets. They held a stalemate with low-cost force multipliers, especially SIGINT, but the initiative was increasing favoring the rumrunners. After repeal, support returned for a high-tax, highly regulated liquor regime, and the Coast Guard was able to disrupt the last round of rum-running and lock in this settlement.

Altogether, these historical sub-cases scope out the entire state space. Their conduct

\(^2\) Both of these variables shape each other in the course of time – strong efficiency can buttress support through results and credibility. However, support experiences time in longer cycles than efficiency. Therefore, for simplicity’s sake, I primarily see time in terms of support.
comports with what we would expect from the ‘Boxer’ model. The suppressors followed the strategic imperatives in each quadrant, which also turned out as expected. Our analysis of the state space supports the model. We now have *prima facie* evidence that the ‘Boxer’ model is a reliable heuristic with some predictive and prescriptive value.

**THE ‘MACRO’ TEST: THE SCRIPTS.**

We will now evaluate whether the trajectories of these four sub-cases cohere to the on a ‘macro’ level with the expectations of the model. We will use the organizational and operational scripts to do so. Since both scripts derive from common roots in the ‘Boxer’ theory, we should expect them to move roughly in parallel. Since the illicit network will contest both scripts, progress in the campaign should move in fits and starts through ‘sawtooth’ shock-response patterns. This parallel ‘shockwave’ signature differentiates the ‘Boxer’ model from competing alternate hypotheses. The chart of expected correlations from Chapter 4 is recapitulated below:

<table>
<thead>
<tr>
<th>Theory</th>
<th>Mechanism</th>
<th>Correlation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Boxer’ Model</td>
<td>(Structure+Support)→ ΔInnovation→ ΔMarket</td>
<td>Org -- Ops Scripts ('Shockwaves')</td>
<td>Progress happens in fits and starts through competitive sensemaking &amp; adaptation.</td>
</tr>
<tr>
<td>Regimes Model (Jojarth)</td>
<td>Structure→ ΔMarket</td>
<td>Org -- Ops Scripts (Monotonic Linear)</td>
<td>Since this model does not account for illicit adaptation, time is epiphenomenal, and org design solely predicts the outcome.</td>
</tr>
<tr>
<td>Norms Model (Keck/Sikkink)</td>
<td>(Ideas+ Structure)→ ΔDemand→ ΔMarket</td>
<td>Org Script -- Time</td>
<td>Networked movement causes widespread adoption, social change drives demand changes, regime construction ratifies effects</td>
</tr>
<tr>
<td>Power Model (Lieber)</td>
<td>(Capacity+Support)→ ΔSupply→ ΔMarket</td>
<td>Ops Script -- Time</td>
<td>Institutional design is secondary to capacity and will – power and time predict success.</td>
</tr>
<tr>
<td>Null (Becker)</td>
<td>ΔDemand→ ΔMarket</td>
<td>None</td>
<td>Policies epiphenomenal – price, but no ΔDemand. Demand changes independently.</td>
</tr>
</tbody>
</table>

The four sub-cases from the state space conform to these expectations. The clearest support comes from the late-phase suppression of the slave trade. The British successfully executed the organizational script by flattened their network (and by flattening the slavers’ network.)
Accordingly, they moved from the ‘black market’ phase of the operational script into the
‘demand shift’ end zone, remaining there long enough to permanently undo the moorings of the
illicit Atlantic trade. The suppressors took ground through a staccato sequence of seized
opportunities – examples include alliance building with the abolitionist Cuban Captain-General
Dulce, leveraging the Trent Affair for a treaty with the United States, or crossing the bar in
Lagos. The Power model might also explain this result, but that model would have a difficult
time accounting for the journey that led there.

Early-phase slave trade suppression also provides strong support to the ‘Boxer’ model. The
Preventative Squadron realized quickly that it needed to discard the strictures of the conventional
battle fleet. Economy of force was found at the razor’s edge of performance margins in
quotidian skirmishes, rather than through concentrating forces against an ephemeral decisive
point. Improved understanding of the slaver business model led to improved legal regimes and
improved cruisers. Altogether, this presented unacceptable risk to hovering slave ships, who
were previously free to browse for best prices along the African Coast. The improving West
African Squadron forced the slave trade to reboot as a black market. These results also support
the Regime model, as improvements in international legal frameworks explain much of these
changes.

The Rum War demonstrates a definite correlation between the two scripts. The Coast Guard
hit the ground running with deep trust networks, strong operators, and a culture of low power
distance. They spent the rest of the campaign building *ad hoc* partnerships with all manner of
institutions and expertise. They were profligate in spending social support, but this fit well the
zeitgeist of the larger Prohibition campaign. The service shut down the grey market of Rum
Row, and partially suppressed the networked Consolidated Importers black market. As predicted
by the operational script, they developed patrols in response to the grey market and interdiction in response to the black market. The Power hypothesis explains early success against Rum Row, and the Norms hypothesis explains the later stalled effort, but the ‘Boxer’ hypothesis predicts both.

Finally, the Dry Navy’s failure provides an example of negative variation. Flatlined organizational change left the operational script stagnant at a high-volume ‘grey market.’ This null finding could support any of the hypotheses, as none of the change mechanisms in any model were activated. Still, the dramatic change of conditions in the Rum War between the Dry Navy and the Coast Guard campaigns undermines the null hypothesis – since improved suppression was the only major change between these periods, it is difficult to write these shifts off to external causes. Altogether, the relationship between these scripts together is best explained by the Boxer theory.

THE ‘MICRO’ TEST: THE PATHWAYS.

We complete our historical hypothesis test by returning to the original ‘Complex Competing Regimes’ model. This model proposed influence pathways between the physical, social, and cultural spaces of the suppression regime and the illicit market. We would expect that a suppression regime with high leverage would activate a preponderance of these pathways against their adversary. Conversely, we should see the illicit market extensively employing its pathways against a low-leverage suppression regime. We will use this model to assess these four historical sub-cases and see if these expectations are confirmed. For review, the model from Chapter 3 is reposted below:
1. **Suppression Demand - Suppression Regime**
   Political mobilization catalyzes the construction and provides for the maintenance of a suppression regime through new or extant institutions.

2. **Suppression Regime - Market Conditions**
   Those institutions effect change in market conditions through patrolling and direct law enforcement in the market domain.

3. **Exogenous Norms - Suppression Demand**
   Norm entrepreneurship by activists creates and sustains the political salience of a desire to suppress an objectionable commodity or practice.

4. **Perceived Effect. - Suppression Demand**
   The effectiveness of the campaign, as interpreted by the regime and the public, leads to continued support if positive, or donor fatigue if negative.

5. **Illicit Demand - Illicit Regime**
   Demand for an illicit good or practice catalyzes the construction and provides for the maintenance of a provisioning regime.

6. **Illicit Regime - Market Conditions**
   That provisioning regime delivers the commodity or practice to the marketplace, where it is consumed.

7. **Exogenous Pref. - Illicit Demand**
   Illicit demand is socially constructed, and is created when illicit entrepreneurship links a primal desire to a socially provided outlet.

8. **Perceived Effect. - Illicit Demand**
   The effectiveness of the campaign, as interpreted by the illicit regime, shapes illicit demand thru deterrence which raises opportunity cost for demand.

9a. **Suppress. Demand – Illicit Demand**
   The mobilized suppression movement can directly impact illicit demand through moral suasion, which convinces former consumers to turn away.

9b. **Illicit Demand – Suppression Demand**
   Illicit support communities can directly impact the suppression movement through cooptation, which engages and alters the normative calculus.

10a. **Suppress. Regime – Illicit Regime**
   The suppression regime can directly impact the illicit regime through interdiction, which removes critical nodes in their networks.

10b. **Illicit Regime – Suppression Regime**
   The illicit regime can directly impact the suppression regime through corruption, which neutralizes key parts of the campaign.

The four charts below describe the pathways active during the various cases. In the early slave trade case, relatively few pathways were active on either side. Abolitionist demand fueled the growing suppression regime, and the demand for captives fueled continuing slave trade networks. The two networks met in the market commons, and would contest each other for control there, but neither clearly had the upper hand. The slavers, though, were better at
communicating their successes back to their supporting market; the market responded by assuming the future availability of captives and planning accordingly. This perception helped the slavers, as it was in part self-fulfilling. In sum, this is a picture of ‘grey market’ contestation.

Figures 57 - 6: Pathways Charts. *(Pathway Activated by Illicit Network, Pathway Activated by Suppressor)*

By the late phases of the case, things were far more interesting. Both sides attempted to activate all avenues against each other, but only the Royal Navy was successful in doing so. The slavers attempted bribery, but these had little effect on the suppressing cruisers themselves, and were effective primarily for securing passage into corrupt slaving ports. The slave trade as a whole would have benefited from the radical free traders’ attempt to defund the Squadron, but this too was defeated.

On the British side, cruiser captains were extending the net of coastal treaties down the African coast while diplomats patched the few remaining holes in the boarding treaty network. These efforts dismembered the slaving regime infrastructure and interdicted key nodes at sea and ashore. They fielded newer and faster cruisers, inflicting intolerable risk on any ships that attempted to linger in the market commons. With neither coastal focal points nor clandestine
coordination networks, the trade looked on increasingly shaky footing. This perception changed
demand over time, as entrepreneurs shifted to less risky free labor flows. This is a picture of a
suppression campaign deep into the ‘demand shift’ phase.

The early phase of the Rum War flipped this pattern in favor of the illicit market. The
rumrunners retained effective control of the market commons in the face of the feckless Dry
Navy. Moreover, they were easily able to corrupt crews, which kept the enforcement regime
occupied with their own internal problems. Support for Prohibition as a whole was still fairly
strong, but demand for liquor was stronger, and the rum forces were perceived by both sides as
the stronger. This pattern of pathways is consistent with a failing regime.
Finally, the late phase Rum War is the most ambiguous pattern, which is consistent with an ambiguous ending to the campaign. On one hand, the Coast Guard built a very strong regime, which strongly resisted rumrunner corruption bids. With this regime, the Coast Guard was able to dominate the coastal market commons and force the illicit market into clandestine coordination cells. The service was also adept at interdicting the communications of these cells. They held the balance of power on the seas.
However, the cultural balance of power was shifting due to the failure of Prohibition on land. This was a boon to the rumrunners, as it dried up funding for the Coast Guard. Following repeal, the balance in the field briefly shifted against the service, but the cultural balance shifted back in their favor. Following the 1934 revitalization, the suppression regime activated all pathways against the illicit network and routed the last round of rum running in 1936. This locked in the middling settlement of high liquor customs and excise taxes. Altogether, the pathway patterns of all four cases support the general ‘Boxer’ theory.

CONCLUSIONS.

These four historical cases fully explore the state space of the ‘Boxer’ theory. The relationship of organizational structure to operational progress is most coherently explained by the experimental hypothesis. The same holds for the pattern of pathways activated by the suppression regime against the illicit market and vice versa. These cases demonstrate the reliability of the fundamental ‘Boxer’ model.

Taken in their entirety, the historical swath of the two cases demonstrates the sweep of the theory. Both the suppression the West Africa Squadron’s campaign and the Rum War follow markedly similar trajectories. In both campaigns, the suppressor builds a low-power-distance learning organization enriched by ad hoc alliances. In both, they use support to break through logjams - Palmerston with the Portuguese and Brazilians in the first case, the Special Patrol Force off of Florida in the second.

Both campaigns follow the three phases of the operational script – the Royal Navy and the Coast Guard both shut down the offshore focal points of their respective ‘grey markets’ with patrols. They both attacked the networks of the resulting ‘black markets’ with intelligence. The British consolidated their demand shift, while the Coast Guard adjusted their goals after support
ran out, and then consolidated less ambitious goals.

Both campaigns clearly demonstrate the signature ‘sawtooth’ shape throughout, as seen in Figure 2 below, and the same fractal shape shows up in their regional sub-cases. They both share the ‘whack-a-mole’ pattern between regions, where one intervention displaces the flow to another. Altogether, the two cases together strongly support the ‘Boxer’ theory against its competitors. We can reject the null hypothesis, and select the experimental hypothesis of efficiency and support over alternative explanations.
Figure 58: Timelines of the British Suppression of the Slave Trade and the Coast Guard's Rum War.
Figure 59: Timelines of the Slave Trade and the Rum War, Disaggregated by Region.
Scope Conditions. Two further similarities between the two cases are somewhat less analytically advantageous. First, both cases primarily took place on the commons of the Atlantic Ocean, rather than along national borders or within states. On one hand, the nature of ocean transport lends itself to a limited number of discrete entities and frames on both sides of the conflict. Ships can be counted, and latitudes and displacements can be measured and compared with each other. A domestic human trafficking or drug trafficking ring might contain far more possible entities; further, those entities may be more difficult to name and measure.

It is possible that other dynamics might better account for outcomes in this added complexity. Therefore, these findings should be scoped to transnational illicit networks on a commons. The obvious member of this category is the sea, but also includes any internationally navigable open transit area, including international airspace, certain deserts, and the Internet. This scope condition can be softened to include any illicit enterprise that can be specified in discrete network terms, with the caveats that such a specification is likely to be an incomplete picture of an illicit market. With future research, the theory may be extended further.

Second, both the Atlantic Slave Trade and Rum War fielded remarkably resilient and adaptive markets, and both Abolitionism and Prohibitionism were tremendously determined and well-backed movements. To continue with the Boxer analogy, these two campaigns were ‘prize fights.’ Both sides threw everything they had at the other in both fights, and both sides took punch after punch without going down. While these protracted campaigns make for excellent case studies, they may not be ideal archetypes for all types of illicit market suppression.

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4 Whether or not the Internet is a commons, and who ‘owns’ it, is an issue of fierce debate which involves extensive arguments about the nature of information in national sovereignty. I do not stake a claim in this debate, but I do hold that functional control of actions on the darker parts of the Internet is less like community policing and more like fighting piracy.
campaigns.

If a market has a ‘glass jaw,’ or some sort of critical vulnerability, a well-built and targeted regime may take it down with a quick knockout. This is a good problem to have, but the final models from these full campaigns may be overkill in these cases. These cases, then, present the known maximum conditions of complexity for successful or marginally successful suppressions.

In conclusion, in this chapter we established the reliability of the general ‘Boxer’ model. We also scoped the model to international free associational spaces, especially commons. In the remainder of this section, we will test the robustness of the Boxer model with four contemporary ‘prize fights.’ We will then survey the universe of suppression attempts to identify which types of illicit markets tend to have ‘glass jaws.’ Finally, we will tie all of these pieces together in a Boxer strategy for combatting modern-day slavery. It seems fitting that a model built from the experience of suppressing the slave trade might be used to suppress the slave trade. Abante.
In this chapter, we extend the Boxer model to noteworthy contemporary cases in order to test the model’s robustness and generalizability. By doing so, we will determine if the model can support contemporary policymaking. We will also identify anomalies and pressure points in the model, which will provide a vector for future extensions and refinements.

Three criteria drive the modern case selection strategy. First, cases should be representative of broad and historically ubiquitous categories of transnational crime. This criterion ensures that the model provides analytical purchase for policymakers. Second, cases should be ‘wicked problems,’ in order to put the model through its paces. Finally, cases should stress the model with unique challenges. This provides a robustness check, assessing how well the model can adapt to new circumstances.

For instance, financial crimes take place on the home turf of the suppressing state; therefore, counterfeiting’s grey market phase should be dramatically different than in our previous cases. Conversely, the US Coast Guard’s 1970-1990 campaign against Colombian marijuana motherships bears striking parallels the Rum War at Sea.1 Though this case confirms our findings in the last chapter, it introduces no new stresses on the system, and is hence omitted.

We begin with a brief general taxonomy of crime. From there, we explore cases from four ubiquitous themes of transnational crime – piracy, financial crimes, drug trafficking and modern slavery. For each, we begin with a cursory historical survey of the theme, and then focus on a recent case with conclusive results. At the end of each case, we will note any extensions

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required in order to adequately explain the case with the Boxer model.

The first, Somali piracy, investigates large-scale theft against international businesses on an international commons. This case followed the early phases of the operational and organizational scripts, but the problem was reduced to a nuisance (at least for the time being) using counter ‘grey market’ patrolling alone. By hardening the merchantmen and building radio ‘hotlines’ between would-be targets and the naval patrols, the suppressors were able to deny a black market form to the illicit network.

The second, the Financial Action Task Force, explores international actions against organized money laundering. Financial crimes generally lack a ‘grey market,’ as the crime is based on deception, and is easily undone if attempted in the open. These generally move straight into the ‘black market’ phase. This is due to the universal norm against counterfeiting and state leverage over currency and financial institutions.

In the third case, we will apply the model to the Colombian-American campaign against cocaine. This case brings to light a particular vulnerability of weak states in transnational suppression campaigns – an illicit market in the agentic ‘black market’ phase can ally with insurgents or simply overthrow the state itself. In these cases where the illicit network can ‘break the ratchet,’ policymakers should count the cost before they provoke an illicit market to organize.²

In the last case, online trafficking and modern-day slavery, we find that illicit actors can generate new grey market focal points in emerging technologically constructed spaces – in this case, the Internet and cyberspace. Since state cyber-capabilities presently lag behind illicit players, this case foregrounds the problem of controlling a technologically-constructed

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commons. Whether sextants or TCP/IP servers, technologies unlock new fields of human interaction. Since states are generally slower to figure these spaces out, major changes in globalization or technology make spaces for novel grey markets. Policymakers must therefore understand the fundamental topographies of the market commons before they attempt to wrest control of it during the grey market phase. The Virtual Global Taskforce (VGT) is bright spot in this struggle. The VGT is an international effort to combat online sexual exploitation of minors; as a result of its success, online traffickers are forced to use burdensome black market security measures.

**A Brief Taxonomy of Transnational Illicit Markets.**

In the 2010 *Transnational Organized Crime Threat Assessment*,³ the United Nations identifies nine categories of contemporary transnational organized crime:

1) Human Trafficking,

2) Migrant Smuggling,

3) Heroin Trafficking,

4) Cocaine Trafficking,

5) Firearms Trafficking,

6) Environmental Resource Trafficking,

7) Product Counterfeiting,

8) Maritime Piracy, and

9) Cybercrime.⁴


I propose we parse this list into broad categories, in order to choose a few representative cases from this universe. A classic liberal state protects the life, liberty and property of its citizens; since a social liberal state does much more, we will use this basic classic definition for the three minimal categories of potential crimes. An organized crime group is criminal because it is trespassing upon one of these three basic categories.

![Figure 60: Targets and Victims of Transnational Organized Crime.](image)

(*War - not crime, but an organized form of the cross-border taking of lives.)

(*Hijacking - hijacking for theft alone, rather than symbolic, political violence.)

Crimes can be committed against individuals and against groups. Crimes against individuals are intuitive – a criminal network enslaving people or stealing their property is obviously wrong. Crimes against the collective are more abstract – the summation of a large amount of small harms, or the potential for a non-specific major harm, can counterbalance an individual right. For instance, an individual driving while intoxicated creates a present danger to others, but unless that individual actually hits someone, that danger remains abstract. Alternately, high levels of hard drug consumption in a neighborhood create negative social externalities for non-users. These non-users have a right to redress, but because of the distributed costs and concentrated benefits of the drug use, the negatively impacted non-users are structurally
disadvantaged from seeking remedy.

According to John Locke, “persons have a right or liberty to follow their own will in all things that the law has not prohibited, and not be subject to the inconstant, uncertain, unknown, and arbitrary wills of others.”\(^5\) Reckless endangerment and irresponsible social practices impose an arbitrary will on a general mass of non-consenting others, and therefore these two definitions come into tension with each other. Therefore, the state has some role in safeguarding citizens from these negative social externalities.

While this role is certain to be plagued with politics in practice, societies will reach some equilibrium between individual liberty and collective security on these issues. This will leave some basket of goods and practices outside the scope of the law. The contents of that basket are crimes against collective liberty. Since public revenue is similarly a collective good, defrauding it through smuggling or counterfeiting is an assault on public property.

Though transnational organized crimes against life have a place in this taxonomy, I exclude them from our analysis. Organized large-scale cross-border killing is necessarily a political act – theft and enslavement can directly turn a profit, and can be explained through solely economic means, while killing alone generally cannot.\(^6\) Systematic killings can support other forms of moneymaking – advancing petty corruption as ‘plomo o plata’ or advancing a sympathetic insurgency.

There is a fine and hotly debated line between terrorism as crime and terrorism as war, and I intend not to engage that debate. Elements of the ‘Boxer’ model should be useful in fighting political violence as well as economic violence, but as it currently stands, it is configured as a


\(^6\) This may not be true in the case of organized murder-for-hire rings.
counter to illicit markets rather than illicit movements. Therefore, I scope terror groups and insurgencies out of our model for parsimony’s sake. For the same reasons, we will assume that the nations leading the suppression campaign are liberal states; there is surely a category of state crimes against citizens, but these too are beyond our scope.

This leaves four categories, each covered by a mini-case. The classic example of organized crimes against individual liberty is slavery. Piracy is almost as old as shipping, and serves as our example of organized transnational crimes against individual property. Drug trafficking provides an archetype of crimes against collective liberty, and counterfeiting stands as a crime against collective property. In the combination of these four cases, we will determine the utility of the Boxer theory for present policy problems.

**Piracy: The Pirates of Puntland, 2008-2013.**

*Summary.* This mini-case investigates large-scale illicit activity against the property of individuals. This case is interesting in that it was concluded ‘grey market’ patrolling alone. Neither contestant desired to move toward black market forms. Though the international suppressing forces had information about villages that supported piracy, dangerous and collateral-damage-prone shore raids were not of interest. This was due to both political cost and the danger of further destabilizing Puntland and thereby indirectly helping al-Shabaab.  

As for the pirates themselves, while they excelled at efficient and profitable grey market operations, they had little capability or appetite for a true black market network duel against their haze grey counterparts. Simple small arms turned high-walled freighters into fortresses once

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8 Bahadur, *The Pirates of Somalia*.  

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merchantmen adopted the use of armed guards. With an increasing international naval presence in the area, vessels could call for reinforcements - SH-60 Seahawks easily outrun and outgun RPG-armed speedboats. The pirates astutely judged the suppressor’s opportunity cost for escalation, and wisely kept their operations below levels that would provoke a full-scale response. This allowed improved patrols to contain and erode the problem.

This case differs from the core Boxer model in that piracy is a non-cooperative endeavor. Where rum suppliers and rumrunners were allies against the suppressors, the pirated-upon are natural allies of the suppression forces. This solves a slew of intelligence problems during the black market phase, granting the initiative to the state in late phase suppression. Therefore, for illicit markets that predate against individuals, suppressors can deny black market forms by building connectivity with would-be victims.

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10 Ibid.
11 The closest analogy to the historical cases might be arming vulnerable people groups against predators, as in the British-backed Abouketian resistance to the armies of Dahomey during the West Africa Squadron campaign.
Narrative. The history of piracy intertwines with stories of state power in complex and contradictory ways. The line between pirates and privateers was often unclear – the Barbary Pirates served as an adjunct of a long struggle between the Ottomans and Christendom. The privateer Sir Francis Drake, renowned in England for his defense against the Spanish Armada, was very much considered a pirate by the Spanish. Both the Sea Peoples, foes of the ancient Egyptian Pharaohs, and the relatively more recent Norse Raiders were polities that practiced raiding and piracy. Pirate raiding has a long history as a tool of economic statecraft.

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12 Woodes Rogers statue, Nassau. Picture courtesy: http://www.traveladventures.org/continents/americas/nassau-old-town06.html
14 Ibid.
Much like arson, it is an unpredictable tool. Privateering was eventually done away with by the late 19th century, but proved difficult to manage far before. During the height of Spanish power in the Americas, competing powers set ambitious sailors against Spanish shipping with letters of marque and reprisal. In an early version of the Pakistani madrassas, the British were content to let raiders run amok amidst Spanish shipping, but as the English displaced the Spanish in the Americas these piratical elements became a problem for the British themselves. This problem was most pressing in Nassau.

The Crown appointed privateer Woodes Rogers as the first Royal Governor of the Bahamas in 1717, with the partially self-appointed task of suppressing the pirate epidemic of the early 18th century. Rogers presented the pirate ruling class of the city an ultimatum – either accept a general amnesty on the condition of abandoning piracy, or be hunted down and killed. Most of the pirates accepted the first option, but Rogers was merciless in carrying out the second against the remnant. His report upon the conclusion of this task, “Piracy Expelled, Commerce Restored,” became the national motto of the Bahamas until its independence. This marked the beginning of a terminal decline of large-scale piracy in the Caribbean.

The modern model of piracy similarly came about amidst state weakness, but in contrast, it responded readily to less-draconian forms of state power. These modern forms of private commerce raiding have less to do with economic warfare than their historical counterparts. The straits of Malacca and the Horn of Africa are modern focal points of marine piracy - both are areas of relatively weak governance near natural maritime trade transit chokepoints.

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15 Ibid.
16 Ibid.
18 With the possible exception of tanker-raiding during the Iran-Iraq war, which might be conceived in this way.
The collapse of the Somali state in the early 1990s created the conditions for all manner of banditry. While this state weakness was the ultimate cause of the rise of piracy in the region, there were a number of proximate causes. A combination of foreign overfishing off the coast of Puntland and the failure of the Puntland government to pay its employees led to a rise of informal pirate ‘coast guards.’ These organizations soon refined a piracy-based business model, where speedboats equipped with small arms would board vulnerable vessels, supported from a larger mothership. These pirates would then hold the vessel for insurance ransom. Ransomed vessels were often used as motherships while awaiting delivery to their owners, due to the economic illogic of attacking a ship that had already been purchased back.

These incidents took on increasing public note, especially in the wake of kidnappings and hostage taking. In the 2009 *Maersk Alabama* hijacking, the most notable of these incidents, US Navy special operators killed a number of pirates using sniper rifles in the course of rescuing the vessel’s captain. With the exception of these few mutually violent exchanges – generally provoked by a threat to the crew’s life - the general approach to the problem was containment and de-escalation. Paying off a pirate with insurance money was typically the least risky approach for most shippers, and for better or worse, it bought time for a more lasting solution.

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22 Ibid.

23 Ibid.
Increased attention on the issue led to the establishment of three cooperative multinational patrols - the US Fifth Fleet’s Combined Task Force 151, the EU’s Operational Atalanta, and NATO’s Operation Ocean Shield. These dramatically increased the risk for pirates and the availability of recourse for merchantmen. Self-help measures, especially armed guards, amplified to the increased risk to would-be pirates. Improvements in Puntland’s general security situation helped as well.

Steve LeVine of Quartz cites an anonymous “friend whose job it is to free captive ships” explaining the decline in piracy in 2013:

There are a number of reasons; primarily the use of armed guards on merchant vessels—no ship protected by armed guards has ever been taken. The Naval forces have got better at reacting to events and at interdicting pirate attack groups. Ship owners now route their vessels further east and north, therefore avoiding the main pirate hunting grounds. Owners order their vessels to travel at maximum speed in the

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26 2013, “It’s Been a Full Year Since Somali Pirates Hijacked a Boat.”
HRA (high risk area), which makes them harder to board. And every ship transiting the IOR (Indian Ocean region) has physical protection–barbed wire, electric fences, etc, etc.

Plus, the pirates have been greedy, preferring to spend their take on booze and hookers and Land Cruisers than on equipping attack boats and investing in better equipment.

I can’t see it recovering now. The anti-piracy industry–advisers, security guards, protection equipment, naval forces–is so well established now the pirates can’t cope.27

Somali piracy fizzled out with a whimper, not with a bang. Rather than reboot into a black market and challenge these new measures, the pirates ceded the ground to the suppressors and contented themselves in other ways.

**Model Fit.** The Somali pirating enterprise was nowhere nearly as committed or resilient as the rumrunners, and therefore this case saw both sides playing relatively few cards from their decks. The suppressors knew the locations of pirate bases, but the bases were simply coastal villages, and a raid risked civilian casualties.28 Puntland was a key player in the fight against al-Shabaab, and inland raids would have deeply damaged that cooperation.29 So a counter-network strategy was feasible, but it just wasn’t worth it when patrolling could adequately shut the market down.

Therefore, the organizational script holds in its entirety – piracy triggered a response, which

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27 2012, “All of a Sudden, Somali Pirates Are Losing the Fight for the Sea”; 2013, “It’s Been a Full Year Since Somali Pirates Hijacked a Boat.”
28 Bahadur, *The Pirates of Somalia*.
29 Ibid.
generated support. That support led to improvements in coordination and efficiency, tactical innovation, and increases in available forces. These improvements in efficiency went unchecked by the pirates, who were forced out of the market commons.

The case follows the operational script only in part – this case ended as successful patrolling shut down the grey market. Nothing further was required beyond simply increasing the risk for captures in the high threat area. Pirate experience and expertise decayed, and the path dependency was broken.

In this relatively straightforward two-round fight, we find two additional considerations for extending the ‘Boxer’ model. First, since the grey market phase is the market’s preferred and most efficient mode, shutting down the grey market has a deep impact on the illicit market on its own. For some markets, the near-entirety of the illicit market’s potential might be in this ‘grey market’ phase. Some enterprises do not run well, or do not run at all, underground. Therefore, when considering policy interventions, we should consider the depth of this ‘ledge’ between grey market volume and black market volume. If this ‘ledge’ is drastic enough, the best course of action may be to simply improve the quality of patrolling rather than investing in interdiction.

Second, as opposed to rumrunning, where both smugglers ashore and smugglers at sea both cooperated to get their goods through, piracy is by its very nature non-cooperative. Therefore, the target ships themselves can serve as effective spoilers. Generalizing this trend, a non-cooperative illicit market should be particularly vulnerable to improvements in patrolling, as the would-be victims readily provide intelligence to the suppressors and resistance to the illicit actors.

Further Extensions. These insights on non-cooperative crime and target hardening may

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30 I consider traps, fraud and ‘inside jobs’ as non-cooperative.
generalize beyond transnational illicit markets. The *New York Times* ascribes a decline in auto theft to increasing automated automotive defensive technologies such as engine immobilizer systems.\textsuperscript{31}

The graph on the left marks this dramatic transition – Honda Accords introduced these immobilizer systems in 1998, and cars of that model year or later are correlated with much lower incidences of theft.\textsuperscript{33}

The increasing prevalence of these systems led to a self-reinforcing decline in auto theft networks. With declining auto theft, illicit ‘chop shops’ became less profitable; this led to a decline in ‘chop shops,’ which reduced the potential profitability of auto theft.\textsuperscript{34} Simultaneously, fewer thefts left more investigators free to investigate these ‘chop shops,’ magnifying these effects even further. The black market could no longer feed itself, and while fragments of a grey market remained – title-less cars can be sold to scrapyards for $1,250 or less – these approaches


\textsuperscript{32} Ibid.

\textsuperscript{33} Ibid.

\textsuperscript{34} Ibid.
offered little profit for the risk involved.\(^{35}\)

This question of target hardening becomes more ethically freighted when considering captive resistance in slaving networks. On one hand, resistance induces costs on the slaving network. On the other hand, active resistance may bring violence upon the resister. Rescue hotlines and other resistance-enabling technologies are powerful tools, but any expansion of these hotlines should be matched by an expansion in rescue capabilities, lest a victim come to harm by reaching out to no avail.

**Laundering, Counterfeiting and the Financial Action Task Force.**

**Summary.** In this second case, we explore international actions against organized money laundering. Counterfeiting and laundering relax the Boxer model’s assumptions about illicit production, as states hold the commanding heights of fiat currencies and the world financial system. The suppressor can inflict costs on the counterfeiter by designing new security features or changing regulations, and states in good standing share a universal anti-counterfeiting norm due to simple self-interest.

The case bears out these advantages, as there is no viable grey market phase for forgery. The Secret Service, built in the aftermath of the Civil War to control counterfeiting, began as a black market investigative service.\(^{36}\) FinCEN, the US Department of the Treasury’s financial crimes enforcement network, similar focuses on intelligence. According their own mission statement:

FinCEN’s mission is to safeguard the financial system from illicit use and combat money laundering and promote national security through the collection, analysis, and

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\(^{35}\) Ibid.

dissemination of financial intelligence and strategic use of financial authorities.\textsuperscript{37}

Therefore, \textit{for illicit markets that predate upon the state, suppressors can easily deny grey market forms within any space under sovereignty through simple coordination.} To this point, while there may be known focal point in a given area for illicit drugs, prostitution, or even stolen goods, it strains the imagination to picture a corner known for selling fake currency.\textsuperscript{38} The exception to this rule is when a state supports or ignores counterfeiting or laundering against an adversary state as an adjunct to hostilities, such as Philadelphia merchant Sam Upsham’s counterfeiting enterprise against the Confederate economy during the American Civil War.\textsuperscript{39}

\textbf{Narrative.} Laundering and counterfeiting provide interesting extensions of the model, as the state itself owns the intellectual property commodity in question – fiat currency. This contrasts to illicit substances or illicit captivity, where purveyors attempt to minimize the time they spend in state-owned spaces. Going beyond smuggling, which defrauds the government of tax revenue, counterfeiting attempts to simulate the authority of the state and thereby defraud citizens.

Since the success of counterfeiting depends on the attempt going unnoticed, there is no initial ‘grey market’ form of counterfeiting. Similarly, money laundering attempts to move illicit finances into normal licit financial flows. Laundering has more of a ‘grey market’ than forgery, but this form is still quite fragile compared to narcotics or liquor. Both might be imagined as moving back through the operational script, beginning in with black market transactions, moving through a grey market of fences, and ending in the general pool of money.\textsuperscript{40} The point of the enterprise is to break resources out of the black market and all its concomitant rents, and free ride

\textsuperscript{37} “Mission.” \textit{Financial Crimes Enforcement Network, Dept of the Treasury Website.} Online: \url{http://www.fincen.gov/about_fincen/wwd/mission.html}.

\textsuperscript{38} This is different from grey market money changing, which is common in much of the world.


\textsuperscript{40} Conversely, with successful enforcement, would-be launderers are forced to stop free-riding off the state.
off the state by re-entering normal financial flows.

The state holds a major initiative advantage in these fights. In other criminal endeavors, the illicit market moves first, and the state then has to respond. In counterfeiting and laundering, the criminal needs to enter into a space created, shaped, and monitored by the state. A counterfeiter is forced to respond to currency security measures; a launderer has to navigate financial institutions that respond to general regulatory pressures.

The exception to this trend is non-state-regulated financial flows such as bitcoin or hawalas. These ungoverned financial spaces create an ‘air-gap’ along the trail of transactions. By generating a space that has little legal liability for the financial guarantors and little traceability for a state, the illicit network does not need to enter the state’s regulatory home turf. These non-state commodities follow more traditional models of illicit market suppression.

The rise of the US Secret Service serves as a counter-counterfeiting mini-case. During the American Civil War, the United States government turned toward fiat currency as a means of financing the conflict. These ‘greenbacks’ proved a major draw to would-be counterfeiters. The Treasury Service believed that the best defense against counterfeiting was a good offence, and built its own investigative agency.

The Secret Service, founded in 1865, was the result of this search. The agency initially had difficult getting off its feet. The agency’s initial hires included many of the sorts of criminals the service was intended to investigate. While an ex-con might make an excellent detective, in this case the supposed pre-employment conversions to law-abiding citizens left something to be

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41 Johnson, Illegal Tender.
desired. The service was racked with corruption, and was re-built in the 1870s.\textsuperscript{43} This professional restructuring was far more successful, and the Secret Service used a mix of technical and human intelligence to identify and suppress counterfeiters. In keeping with the operational script, the service used an interdiction strategy against a black market. American counterfeiting ceased to be a large-scale problem around the turn of the century.\textsuperscript{44}

Just as the move to fiat currency generated opportunities for counterfeiters, the move to an effectively global financial system created avenues for money laundering. Since a weak nation or a weak financial institution could provide entry points for illicit actors into licit money flows. This problem became particularly acute from 1980 onwards. As opposed to the counterfeiting mini-case, the problem was a ‘grey market’ of weak accounting systems and known, repeatedly exploited enclaves.

The 1989 Group of Seven (G-7) summit chartered the Financial Action Task Force (FATF) in response.\textsuperscript{45} According to the organization’s history page:

The Task Force was given the responsibility of examining money laundering techniques and trends, reviewing the action which had already been taken at a national or international level, and setting out the measures that still needed to be taken to combat money laundering. In April 1990, less than one year after its creation, the FATF issued a report containing a set of\textit{Forty Recommendations}, which were intended to provide a comprehensive plan of action needed to fight against

\begin{footnotes}
\footnote{\textsuperscript{43} Johnson,\textit{Illegal Tender}. 91.}
\footnote{\textsuperscript{44} Ibid.}
\end{footnotes}
money laundering.\textsuperscript{46}

These recommendations included a risk-based coordination schema, confiscation rules, powers and responsibilities of the member states, as well as a slew of preventative measures. Amongst these were the reporting of suspicious transactions, improved internal controls in multi-national banks, due diligence and record keeping and ‘know your customer’ measures.\textsuperscript{47} The organization continued to expand in 1991 and 2000 until it encompassed the pillars of the world financial system.\textsuperscript{48} According to the organization’s website: “the FATF currently comprises 34 member jurisdictions and 2 regional organisations, representing most major financial centres in all parts of the globe.”\textsuperscript{49}

Altogether, these measures enacted a patrolling strategy that suppressed the much of the laundering grey market. In the Secret Service’s case, they faced a counterfeiting black market, which was disrupted through interdiction. While the dominance of the state in fiat currency financial market shifts the operational script’s focus toward its end phases, both cases support the foundations and basic mechanics of the Boxer model. Both support the organizational script – once the affected states became serious about suppression, network building became the order of the day. In the Secret Service’s case, this was through informants and investigation; in the FATF’s case, this was through treaties and best practices.

\textsuperscript{48} “History,” FATF.
Organized counterfeiting and laundering schemes obviously continue. Still, the shock spikes in these practices due to fiat currency and globalization and the countervailing institutional responses fits the Boxer model well. Malign emergence led to the social demand for suppression, which led in turn to institutional creation and experimentation. After a suitable period of organizational learning, the governmental institutions effectively contested the same spaces as the illicit networks and reduced the problem to socially acceptable residual levels.

**Drug Trafficking: The Rise and Fall of Colombian Cocaine, 1970-2010.**

*Summary.* The third case, drug trafficking, is an inescapable fixture in any discussion of transnational illicit markets. While I still hold that alcohol prohibition and the American-led hemispheric counter-drug effort make poor direct analogies for each other, there are some flashes of similarity between the logistics and the tactics of the two anti-smuggling campaigns. For instance, Aldous Huxley once uncharitably described Belize:

> If the world had any ends, British Honduras [modern-day Belize] would certainly be one of them… when Prohibition is abolished, the last of its profitable enterprises – the re-export of alcohol by rum-runners, who use Belize as a base of operations – will have gone the way of its commerce in logwood, mahogany and chicle.50

Despite effective liaison with the U.S. Drug Enforcement Agency, the nation presently reprises this role as a transit country for the inter-American narcotics trade.51

Similarly, the Bahamas-to-Florida smuggling route serves drug-runners as it once served rum-runners. Drug pirates terrorize drug runners into service, similar to the ‘go-through guys’ of Prohibition. Past and present runners saw suppression patrols as obstacles to be navigated, while

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51 Ibid. 81.
confidential informants presented a bogeyman to both groups.

The most significant parallel, in terms of the Boxer model, is the waxing and waning social support for suppression. Musto and Jonnes describe drug suppression in ebb and flow over time, as a society balances the negative externalities of consumption with the negative externalities of suppression in order to find equilibrium. Building on this idea, I focus on the specific case of Colombian cocaine, which was generally perceived as a ‘party drug’ until the overdose-induced death of Len Bias in 1986. This changed public perception, which generated demand for suppression, which in turn eventually brought consumption back into check.

The case begins with the hunt for Pablo Escobar of the Medellin Cartel, which matches expectations for an intelligence-driven black market suppression campaign. With the death of Escobar, Colombian production shifted to the Cali Cartel. Eventually, these were suppressed as well, which led to a loose affiliation of semi-independent cells. These became increasingly tied to paramilitary groups and the FARC communist insurgency. Demobilization of the paramilitaries and victories against the FARC reduced the hold of these groups, and cocaine production shifted to Mexico.

This case focuses on black markets, but the addition of a weak state changes the calculus. With a strong state, the suppressor does well to drive the illicit market into an organized but costlier black market. In a weak state, however, the illicit market can ‘break the ratchet’ by allying with insurgents or taking control of areas from the state. In these cases, a would-be suppressor should consider whether they have the governance capability to actually attack the

53 Ibid.
54 Jonnes, Hep-Cats, Narcs, and Pipe Dreams.
illicit market. It may be possible to disrupt a grey market only to find that the resulting black market is too much to handle. Therefore, *for weak states, a suppressor must reinforce governance lest the black market overpower the state itself.* We proceed with an overview of the drug war and the narrative of the Colombian campaign.

**The Drug War, in General.** The United States-led international ‘War on Drugs’ generates a tremendous amount of controversy, along with results ambiguous enough for any and all sides of those controversies to claim certitude for the necessity of their preferred policies. This is understandable given the stakes of the Drug War debates. On one side, enforcers have built their careers in the campaign and can call on the federal government’s bankroll.55 On the other side, George Soros’ Open Society Institute has funded more than $15 million of legalization-friendly research and advocacy.56

The campaign lacks effective counterfactuals, so both sides speak to hypotheticals – reformers cite mounting social costs amidst an inability to eradicate drug use as evidence that the campaign failed. They posit that a ‘harm reduction’ approach would have yielded better results, but in this they take the prerogative of the challenger in positing an alternate future. The supporters of the campaign have the bruises of an incumbent, but they too can claim that suppression has not yet been funded in earnest, and a world without suppression would have been far worse. The discussion should become more interesting with the varied liberalization of marijuana laws in different regions of the United States, but until the results of these changes stabilize, the counterfactual problem remains amidst a morass of conflicting interests.

In one benefit of our ‘back to the future’ historical case approach, we escape from these

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55 Musto, *The American Disease.*
56 Ibid.
forces, except insofar as contemporary Drug War debates have colonized our understanding of Prohibition. This is also a weakness – the short space remaining is inadequate to establish the requisite empirical context to make authoritative pronouncements on the success or failure of the decades-long campaign. We can still identify signatures of the Boxer model, and explore scope conditions. In order to do so, it serves well to select an interpreter from amongst the various factions of the Drug War debates, and build on their understanding of events.

The debates over the drug war break down into three major camps – a reformist camp critical of the policy itself, a pro-suppression camp critical of a lack of will and cooperation, and a ‘long cycle’ camp which identifies overshooting ‘long cycle’ of abuse and suppression. First, critical approaches generally hold that the United States narcotics policy is counterproductive and should be abandoned in favor of a ‘harm reduction’ approach, which treats addiction as a public health problem rather than a law enforcement issue. Extreme members of this camp promise an economically and socially bountiful “green revolution” with the advent of legalization, and discount residual enforcement problems and negative consumption externalities – Doug Fine’s pro-marijuana Too High to Fail exemplifies this sort of punditry.57 More sober members of this camp weigh the negative externalities of some amount of increased consumption against the negative externalities of suppression, and finding the suppression-to-reduction ratio unsatisfactory, determine the enterprise fatally flawed.58

Were this camp correct, it would undermine the integrity and the utility of the Boxer model, which treats these exchange ratios as variables that can be improved over the course of suppression. However, this camp fails to adequately account for the utility of stalemates in law

enforcement – crimes reach an equilibrium level where the social demand for crime reduction meets societal resistance to the impositions of law enforcement.\textsuperscript{59} For instance, murders could be further reduced with more invasive surveillance and tracking methods, but these would likely come at a high cost to the quality of life for innocent citizens; extant surveillance methods could be further curtailed, but this might result in politically unacceptable increases in the murder rate.

The durability of drug suppression policies demands an explanation more satisfying than sustained stubborn wrong-headedness – in Krasner’s memorable phrase, “stupidity is not a very interesting analytical category.”\textsuperscript{60} Path dependency is a more satisfying explanation; while escalation in the Drug War may be partially due to the political logics of partisan escalation,\textsuperscript{61} it is presumptive to assume the failure of suppression and then go about explaining the irrationality of continued support. In a common statistical problem, the direction of the trend lines for suppression depends greatly on the cut-points. According to the University of Michigan’s Monitoring the Future dataset, drug use amongst college students declined from a peak in 1980 to a nadir around 1990, and then plateaued at an intermediate level during the 2000s.\textsuperscript{62}

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\textsuperscript{60} Stephen D. Krasner, “State Power and the Structure of International Trade,” World Politics 28, no. 03 (1976): 317–47. That said, path dependency is an interesting category.
\textsuperscript{61} Sharpe, Drug War Politics.
\end{flushleft}
The aggressive anti-drug policies of the 1980s align with a marked reduction in drug consumption, and the overall pattern shows a lasting overall decline from the extremes of the 1970s. These trends make a *prima facie* case for at least some effect of suppression, and they bear intriguing resemblance to the patterns of alcohol consumption during Prohibition. As before, the question is not whether or not suppression works, but rather ‘at what cost.’ The balance between the social costs of drug consumption and the social costs of enforcement impositions should be struck in normative space. That said, the relative inefficiency of the government against illicit narcotics networks increases the impositions required to achieve a given reduction in consumption.

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64 Ibid.

65 Complicating this further, most ‘harm reduction’ models implicitly propose dramatic market shifts. A licit market, complete with restrictions and taxes, must outcompete an illicit market in order to displace it. Presumably, the deeply entrenched illicit drug suppliers would resist such a change, and would derive some sort of countermeasure. Just as Macs suffer less viruses than PCs, due to smaller user base and hence less benefit for illicit code, exploitation strategies for legalization approaches may still be in primitive stages compared to traditional drug running. At the very least, the consumer base will find ways to game the regulatory structure. For instance, legalized marijuana in Colorado yielded disappointing early tax revenue, due to the continuing exploitation of
In direct counter-point to these critical approaches, a number of suppression supporters argue that this stalemate could be broken through increased funding, stronger political will at home or abroad, or improved regime structure. These approaches discount the resilience of adaptive illicit markets by assigning blame for the present stalemate to some correctible defect in design. Much like the critical approaches, this reduces to a balance between the social cost of suppression and the social costs of consumption, though the preferred weighting is reversed in the case of pro-suppression scholars.

The last camp synthesizes elements of these two views within a theory of social change. First articulated by David Musto, this ‘long cycle’ theory identifies overshooting waves of suppression and liberalization, each rooted in the excesses of the last cycle. In this model, inadequate enforcement leads to a wave of addiction and excess, which generates resistance and countervailing social forces. These forces lead to political changes that put aggressive suppression policies into place, which brings consumption back into check, but spark resistance as they infringe on civil liberties and indirectly support illicit producers.

This pendulum continues due to policy lag and generational lag. As to the former, policies take time to implement, but bureaucracies are tenacious, so suppression will generally lag behind the societal demand. Generational lag has more to do with formative experiences – since these cycles last for decades, a cohort that grew up amidst police excesses is unlikely to support exceptions for ‘medical marijuana,’ which is taxed at a lower rate. Valdez, Linda. “Colorado recreation marijuana taxes below expectations.” AZcentral.com. http://www.azcentral.com/story/lindavaldez/2014/08/14/colorado-recreational-marijuana-taxes-below-expectations/14033583/


Musto, The American Disease.

In aeronautical engineering terms, the tendency to correct toward center reveals a system with ‘positive static stability,’ but the constant overshoot indicates ‘neutral dynamic stability.’
enforcement, while a cohort that spent their formative years in fear of drug-related crime is less likely to see drugs as benign. Since polices change much faster than these perceptions, the policy response continues to overshoot.

**Meta-stability.** This idea of a long social homeostatic cycle might be incorporated into the Dynamic Competing Regimes cycle, as below. According to Musto’s model, the ‘social homeostasis’ function see-saws over time, and moves to oppose whichever side is currently dominant. This change would make the model more deterministic, as homeostatic preferences would tend to check norm entrepreneurs on either side.

However, we might envision this centering impulse as meta-stable, as in Figure 7 below – seeking a certain equilibrium unless pushed past a certain point, at which point it seeks a different equilibrium. In this case, an extremely successful suppression attempt or an extremely aggressive illicit market might move conditions past such a threshold and establish a new ‘set-point.’ This squares with Atlantic slave trade suppression, but counter-narcotics efforts have not been successful in finding such a tipping point.
Jill Jonnes applied this model to the American experience with narcotics in *Hep-Cats, Narcs and Pipe-Dreams*. She finds three long cycles in the American use of illegal drugs. In the first of these, from 1885 to 1925, opiate use migrated from medical prescribers and elite users to the streets and marginalized groups. This created a demand for suppression, which was realized in a slew of laws and the incorporation of the Federal Bureau for Narcotics. These measures held until the second major wave, from 1950 until 1975. This wave mixed with the counter-culture of the 1960s, but ultimately generated and was checked by the suppression-demanding ‘Parent Movement’ in the 1980s. Finally, the large-scale expansion of cocaine led to a third epidemic beginning around 1980 that lasted until approximately 1995.

**Colombia.** This third wave of cocaine consumption provides the best window into the international effects of suppression. In his account of cocaine-trafficker Larry Lavin’s capture, Mark Bowden describes an intentional shift on the part of drug-runners toward cocaine. This was driven by the drug’s small size, high price and relative ease of transport. Colombia supplied almost the entirety of American cocaine during this period.

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69 Jonnes, *Hep-Cats, Narcs, and Pipe Dreams*.
70 Ibid.
71 Notably, this timeline does not synchronize well with the aforementioned *Monitoring the Future* study. Data on these trends are fragmentary by the very nature of the topic.
72 Mark Bowden, *Doctor Dealer: The Rise and Fall of an All-American Boy and His Multimillion-Dollar Cocaine Empire* (New York: Grove Press, 2000).
Around this point, the Medellin Cartel held a commanding lead in the market. Crime kingpin Pablo Escobar took an early leadership role in the drug market, consolidating much of the market and building smuggling trans-shipment networks. The struggle with Escobar itself reflected the operational script – the Colombian government attempted to manage the killing sprees of the drug lord, going so far as to build a luxurious prison (and/or personal fortress) for Escobar named La Catedral. Eventually, when it became clear that no accommodation with Escobar could be reached, the government turned toward signals interception technologies and elite strike forces.\textsuperscript{73} Escobar was found and killed in 1993.

The Cali Cartel was the most immediate beneficiary of the kingpin’s death. This is consistent with the two historical cases – until the very end of suppression, there is a backlash in defeating any given criminal network, as doing so creates a vacuum for other networks unless filled by demand restructuring. This cartel proved extremely resilient, as it was structured in small self-contained cells. While this structure prevented any one cell from giving away the network, it also proved the network’s undoing. Authorized or no, people tend to make mental maps of their world, and eventually Colombian law enforcement found a source who could map out much of the cartel’s leadership structure. Since the government could coordinate action more readily than the disconnected cells, a series of raids captured a majority of the group’s leadership within a space of two months.\textsuperscript{74}

Criminologists Decker and Chapman, in their \textit{Drug Smugglers on Drug Smuggling} interviewed a number of convicted smugglers in federal prisons whose offenses dated from

\textsuperscript{74} Bunck, \textit{Bribes, Bullets, and Intimidation}.
around this period. These individuals describe a shift to decentralized organization in the wake of the collapse of the cartel.

It’s more spread out now. Ever since all those major groups had either been arrested or turned themselves in or retired… all those employees they had, all those people who worked for them, they knew what they were doing… they had the gift of all these connection [sic]. So what happened? It all spread around… Now you got people everywhere, you know?

Decker and Chapman describe this new form of social organization as a core-periphery network, reliant upon “brokers [who] allow the offices to function independently, typically in isolation from one another.” These forms provide resilience, as the “real bosses are in Colombia… fragmentation makes law enforcement more difficult… [and] there is considerable flexibility, adaptation and ability to learn and adapt quickly to changes in law enforcement tactics.”

This shift seems to challenge the ‘black market’ progression, but the outsized role of brokers is consistent with the late-phase slave trade defensive organizational structures. Since these brokers are still internal players, rather than external ‘focal points,’ I interpret this shift as a change in the internal structure of a black market. In this post-cartel organizational form, larger transactions garnered greater degrees of formal control, so the illicit market was striking some balance between the advantages of coordination and the liabilities of communication. We will explore these decentralized ‘super-black-markets’ further in the conclusion of this case.

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76 Ibid.
77 Ibid. 36.
78 Ibid. 159.
These brokers’ continuing need for sanctuary led to the final major slog in the campaign, as the Colombian paramilitaries and the Marxist FARC insurgency increasingly aligned with elements of the drug economy. The Colombian government offered the FARC an enclave (‘zona de despajé’) in hopes of peace negotiations, but this proved ineffective. With the space to re-establish a ‘grey market,’ the group was able to regain economies of scale in command, control and production. That said, the FARC tended toward regimental structures, so the model does not hold perfectly. During this period, the narco-traffickers paid ‘taxes’ to the FARC but were themselves “horizontally aligned” in small semi-independent networks so as to reduce this ‘mapping’ risk.

The election of President Uribe, who had little sympathy for the FARC, led to the closing of the enclave and moves back toward ‘black market’ structures. These created ‘mapping’ vulnerabilities – since all structures were knowable, discovering an individual with such a ‘map’ created major problems. The Colombians found this map in the form of hard drives after an air strike into Bolivia killed the FARC chief of foreign affairs. The data from this hard drive supported a large number of raids, along with the famous Operacion Jaque helicopter hostage rescue. Altogether, these measures debilitated the FARC and destabilized the narco-economy of the country.

As before, this created a criminal beneficiary. Mexican criminal networks had been in the employ of Colombian cartels for the duration as smugglers. As the balance of power shifted away from the Colombian cartels, the Mexican groups were able to take an increasing share of

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81 Ibid.
82 Bunck, Bribes, Bullets, and Intimidation; Uribe, No Lost Causes.
83 This ‘mapping’ vulnerability for the illicit network parallels the corruption vulnerability for the suppressors.
84 Juan Carlos Torres, Operación Jaque/ Checkmate Operation (Bogotá, Colombia: Planeta, 2009).
profits. In the collapse of the Colombian drug networks, the Mexican networks rapidly overtook the space, which is the situation at present.

Intriguingly, the Mexican naval infantry force has proven a particularly effective combatant in the resulting drug-fueled civil war.\(^85\) Since the marine force’s mission was initially orthogonal to drug suppression, there is no organization logic explaining why this should be so. Given the spotty record of purpose-built counter-narcotics forces, this success speaks to the importance of competence, trust, and security, and the oftentimes arbitrary places where one finds that combination. Unfortunately, the same proved true in the converse, as a number of Mexican commandos proved chillingly effective after switching sides and becoming the *Zetas* crime group.\(^86\)

**Model Consistency and Implications.** While our understanding of the internal mechanics of narcotics networks are fragmentary, the snippets we do see are generally consistent with the Boxer model. Musto’s account of cyclical social demand for suppression squares with the model’s conception of support. Intelligence-led counter-network targeting strategies fit well within expected approaches to black markets. The establishment of the ‘*despaje*’ and the resultant reversion to grayer market structures is also consonant with the model’s core insights. Beyond basic model concurrence, we can build three extensions from Colombia’s experience.

**Flexibility, Optionality, and Predictability.** First, a survey of American drug smuggling trends reveals a tremendous diversity in modes of smuggling, but a fairly strong commitment to a few sorts of product. For instance, under the initial terms of the Colombian-Mexican smuggling

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cooperation agreements, Mexican drug networks were allowed pre-eminence in marijuana and heroin smuggling in exchange for Colombian cocaine dominance. These broad-brush decisions hint of central planning rather than market forces – a network under stress is limited in its repertoire, even as it is adaptive in its delivery. This is consistent with late phase slave trade suppression, where slavers were utterly committed to one general model, but found many ways to optimize and adapt the specifics of that model.

Since these networks can internalize most calculable costs, uncertainty presents a greater threat to these counter-measures than certainty. If an intervention can generate effects rapidly and unpredictably, the smuggler network will have a far more difficult accounting for these costs and adapting accordingly. This hearkens back to transaction cost theory – these forms of uncertainty require greater risk pooling, which in turn demands a more robust supporting institutional structure. Since loose brokerage-based structures operate on tighter tolerances, they might be swamped by an uncertainty-based strategy.

‘Breaking the Ratchet.’ Second, following Vanda Felbab-Brown’s research on counter-drug campaigns in fragile states, the case studies of Colombia and Mexico provide a cautionary tale about market suppression. A strong state can impose its will directly on an illicit market within its borders, as the Captain-General of Spanish Cuba did against slave purchasers in the 1860s. An illicit market in a weak state may be able to ‘break the ratchet’ and shake off any laws

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88 This also calls into question the use of ‘dropping street price’ as a measure of the ineffectiveness of suppression – while the price of cocaine decreased over the last two decades, the price of opiates and marijuana increased. This may be evidence of shifting tastes and shifting drug production rather than solely a failure to interdict or impose costs. “Cocaine and Heroin Prices,” et al. *UN Office of Drugs and Crime*. Dataset online: https://www.unodc.org/unodc/secured/wdr/Cocaine_Heroin_Prices.pdf

89 This in some ways parallels B.F. Skinner’s theories of operant conditioning, specifically variable-schedule negative reinforcement. I see it more as an expression of transaction costs, however.

applied to it, to the detriment of the imposing state. In these cases, great care must be taken prior
to entering the ‘black market’ phase to not create a competitor to the state. During the ‘black
market’ phase, the illicit network is reduced in size, but it becomes more formally agentic. A
criminal network might side with the enemies of a state, as in the narco-FARC alliance, or it may
try to carve out swaths of the state itself, as Pablo Escobar managed to do during his reign.

Advanced ‘Black Market’ Structures. Finally, present evolutions of Mexican drug trafficking
networks describe a highly advanced stage of ‘black market’ organization. A government with
territorial control should have little problem patrolling known focal points in the ‘grey market’
phase. Governments generally can manage against formal criminal organizational structures
through intelligence and interdiction. But these horizontal loosely affiliated networks present
major problems to a traditional counter-organized-crime model, which looks for kingpins and
hierarchy. These cells can maintain some degree of security, they can coordinate ‘off the grid,’
and they can also achieve a swarming effect by reducing the utility of any one government
source or intelligence coup. The kind of ‘mapping’ problems that brought down the Cali Cartel
and the FARC are much less of a threat to these distributed groups.

The increasing ability to target senior leaders within Colombia presents one plausible
network-based explanation for this advanced defensive form – the illicit market would prefer to
retain fixed structures in sanctuary, but due to threat it cannot. Typically, a black market will
seek out linked sanctuary in order to retain a supporting grey market somewhere. This allows
the black market to migrate vulnerable functions upstream, while concentrating risk in the
relatively replaceable lower tiers of the network. Sanctuary also provides a luxurious standard of
living for senior network members. This presumably provides lower-ranking network members
something to aspire toward, as described by Sudhir Venkatesh in his analysis of inner-city drug
markets. If a suppressor effectively contests the sanctuary, these luxuries and relatively vulnerable fixed structures come to risk. If the Canadian government had effectively targeted the Bronfmans and the Hatches during Prohibition, the rum-running rings might have also evolved toward a decentralized brokerage-focused structure as well. Domestic enforcement in Cuba during late-phase slave trade suppression resulted in a similar diminished brokerage-based loose structure. Therefore, I view these sorts of networks as a defensive black market form, adapted to operating without sanctuary.

Since these cells use a mix of tacit and formal communications, we might imagine them as a synthesis of the black and grey markets. Therefore, in order to dismantle these structures, the suppressor should identify and render liable any virtual or tacit focal points, such as websites, common meeting locations, or known illicit communications media. Removing these secure focal points should force the market back up into hierarchy, where it can be attacked as a whole. Alternately, effective interdiction or interception of formal communications methods should force the network back down into splintered local networks, where it can be destroyed in detail.

This ‘deny the sweet spot’ strategy echoes network theorist Sean Everton’s insights from *Disrupting Dark Networks*. Everton recommends attacking the brokers of tightly clustered networks, thereby making them “too cloistered” and therefore inefficient. He also alternately recommends attacking the clusters of looser networks, in order make them “too cosmopolitan” and therefore inefficient. The combination of these two strategies keeps an adversary away from an optimal mix of clusters and brokers. This denies scale-free, small-world and other

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92 Dr Sean F. Everton, *Disrupting Dark Networks* (Cambridge University Press, 2012).
93 Ibid.
highly efficient network topographies to the dark network.\textsuperscript{94}

In conclusion, this case demonstrates the frustrating outworking of the Boxer model, and the essential role of rapid organizational learning. In the words of a U.S. State Department official in 2003:

Battling the international drug trade is a complex, dynamic process. Contrary to expectations, it does not get easier with time. Every time we score a major success – a and over the last decade we have scored many – the drug trade learns from it… As successful counter-narcotics operations eliminated the less agile drug syndicates, those that survive get smarter and more sophisticated, adopting ingenious new strategies for concealment and survival. We have seen this already with the emergence of hundreds of small, less targetable syndicates that filled the void left by the destruction of Colombia’s Medellin and Cali cartels.\textsuperscript{95}

Culling stragglers leaves the herd stronger. The Boxer model’s policy objectives seek to change the ecosystem. This is a function of relative organizational fluidity and time.

\textbf{MODERN-DAY SLAVERY, TRAFFICKING AND THE INTERNET, C.2003-PRESENT.}

Slavery remains a tragically ubiquitous transnational crime. Before we begin, definitions often prove a difficulty in discussing this the topic. I use the term ‘slavery’ to describe the systemic use of fraud, force, or coercion for the systematic exploitation of persons through debt bondage, commercial sex or commercial labor.\textsuperscript{96} I use term ‘human trafficking’ to describe the

\textsuperscript{94} Ibid.
\textsuperscript{95} Bunck, \textit{Bribes, Bullets, and Intimidation.}, 67.
\textsuperscript{96} This definition is synthesized from United States interagency definitions, including the Department of State, Health and Human Services, Homeland Security, and the Department of Justice. It is not my intent to generate another definition, only to use a working version of the current consensus. My intent is most akin to the State
movement of people with the end of slavery in mind. The research and policy focus on
trafficking and modern slavery is still fairly new, and therefore data and trends on trafficking
should be considered provisional.97

The word ‘slavery’ also connects these modern practices to the execrable historical
manifestations of inhuman bondage.98 By the end of the British suppression of the slave trade,
the continuing demand for cheap labor resulted in schemes that dodged the legal definition of
chattel slavery, but yielded comparable effects. Roughly speaking, these evolved into modern
forced labor practices. The trafficking of women for the purposes of sexual exploitation became
an issue of increasing concern during this timeframe, continuing into the early 20th century under
the problematic title of ‘white slavery.’99 These practices roughly map onto the modern concept
of sex trafficking.

The Global Slavery Index estimates that 29.8 million people are presently enslaved
worldwide.100 Slavery has three main contemporary manifestations – debt bondage, sex slavery,
and forced labor. Debt bondage describes exploitative labor contracts designed to trap
economically vulnerable people through the use of fraud, such as exorbitant interest rates or
hidden charges. According to Siddharth Kara, this bonded labor accounts for 63% of the total of

Department’s expanded definition. “What is Modern Slavery,” DoS J/TIP,
97 The landmark legislation on the topic, the Victims of Trafficking and Violence Protection Act, dates back to
98 David Brion Davis Sterling Professor of History Yale University (Emeritus), Inhuman Bondage : The Rise and
Fall of Slavery in the New World: The Rise and Fall of Slavery in the New World (Oxford University Press, 2006).
99 For an instance of this usage, and the analytical problems associated with it, see: W. A. Coote et al., Fighting the
Traffic in Young Girls, or War on the White Slave Trade, 1st edition (G. S. Ball, 1911).
100 http://www.globalslaveryindex.org/findings/
world slavery, the majority of which reside in India. The bulk of the debt bondage slavery transpires internally within countries, though may include movement across sub-national boundaries. As described by the Index:

The 2013 US TIP Report that suggests ninety per cent of trafficking in India is internal. Some of this results from internal migration, as migrants can originate from poor rural communities, lured to relatively wealthier cities by brokers on the false pretense of employment. Internally trafficked men, women and children make up significant shares of the workforce in construction, textiles, brick making, mines, fish and prawn processing and hospitality. However it is important to note that many of India’s enslaved have not been moved from one place to another – they are enslaved in their own villages. Many are trapped in debt bondage to a local landowner or born into slavery because of caste, customary, social and hereditary obligations.

The continued existence of these practices hinges on the support or indifference of local authorities. The slavers are generally known by locals, and often seen as pillars of their community; their industries occupy easily-located fixed sites. Due to this embeddedness in local social networks and the specificity of their assets, they generally cannot profitably displace or reboot. Accordingly, these forms of exploitation should lack a viable ‘black market’ organizational form. Encouragingly, this means that structural transformation – repairing and reinvigorating local justice systems – yields high-leverage results against these practices.

NGO reporting generally supports these findings, though measurement and evaluation remains a

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Forced labor or involuntary servitude accounts for another 27.2% of the total. According to the International Labor Organization’s 1930 definition, forced labor includes “all work or service which is exacted from any person under the menace of a penalty and for which the said person has not offered himself voluntarily.” While the definitions of bonded labor and forced labor overlap, forced labor focuses more on the use of violence to coerce labor. According to Anti-Slavery International, forced labor is “most frequently found in labour intensive and/or under-regulated industries, such as: agriculture [including fishing and shrimping], domestic work, construction, mining quarrying, manufacturing, processing and packaging.” Though some of these enterprises might be structured on a fly-by-night basis, strengthening domestic governance should also yield strong results against these practices. However, as experience in the United States has revealed, small-scale forced domestic labor and sexual exploitation rings can operate in black market forms.

Kara estimates three million slaves (9.8%) have been trafficked across national borders, approximately half for sexual exploitation and half for other forms of forced labor. As in the 19th century, slave trafficking is more fluid and hence more resilient than slave exploitation. In the modern global marketplace, traffickers can supply regions where governance is weak and exploitation remains possible. Trafficking therefore supports some of the most severe forms of exploitation, as distance itself creates more vulnerability – the farther a person is from their

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104 Haugen and Boutros, *The Locust Effect.*
105 Kara, *Bonded Labor.*
108 Forced Labour.
109 Kara, *Bonded Labor.*
supporting social networks, the less recourse they have. Since trafficking can readily adapt and take on black market forms, the Boxer model provides the most analytic purchase against this form of modern slavery.

I would place the present global anti-trafficking campaign in the high-support, low-efficiency quadrant of the Boxer model. There is substantial bipartisan social support for strong, coordinated action against trafficking. However, due to a fragmented interagency response and NGO coordination difficulties, the campaign suffers from low efficiency. Data and innovations move slowly, if at all, between the various organizations in the space. There is some cause for optimism, though – a number of novel data initiatives are beginning to transform the space. These include the Global Slavery Index, as well as a global anti-trafficking hotline backed by the Internet giant Google and intelligence enfant terrible Palantir Technologies. Given the newness of these efforts, it is difficult to assess their impact as of yet.

We can, however, assess the effectiveness of local partnership networks. In Cambodia, Helen Sworn founded the organization Chab Dai in 2005 to build a voluntary space of collaboration and common standards for the myriad NGOs working in the nation. This effort culminated in 36 major Cambodian anti-trafficking organizations committing to meet regularly and share best practices for “protection, collaboration, participation, and transparency.”

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Members of the Chab Dai network reported increased communication and data sharing,\textsuperscript{114} yielding general improvements in the overall campaign.\textsuperscript{115} Overall, the increased attention paid to Cambodia forced illicit networks to take countermeasures:

As early as 2007, research was suggesting that the environment of sex trafficking and exploitation in Cambodia was beginning to shift out of standard brothel settings. Brown [of the International Organization for Migration] commented, “recent alterations in the social structure of the commercial sex trade are posited to have resulted from concerns to evade counter-trafficking monitoring systems.”\textsuperscript{116}

These results at least hint at progress.

Local partnership networks throughout the United States have also shown promising results. The Bay Area Anti-Trafficking Coalition (BAATC) in San Francisco and the Coalition to Abolish Slavery and Trafficking in Los Angeles (CAST) have worked to link citizens, non-profits, and law enforcement for more than a decade. New groups in Cincinnati, Boston, and other cities are building on these models, and are collaborating with each other as well. These local partnerships, conducted through conversation rather than committee, create ‘market-like’ structures for efficient information flow and ideation. The spread of these organizations fits with Boxer model strategies. Moreover, these efforts complement the global data initiatives in building a ‘synthetic market’ for abolitionism to counter the trafficking market.

\textit{Cyberspace as the new Atlantic.} The central role of data in modern slavery and anti-slavery

highlights a core challenge of illicit market suppression. Due to their innovation advantages, market actors can master certain emerging technologies faster than states.\footnote{Generally those with low barriers to entry and innovation such as cyberspace, rather than ones that require major capitol outlays, such as lunar landings. In one common pattern, a state will build the enabling technologies that unlock a space – the Royal Observatory, the DARPA\textregistered Net, orbital launch facilities. Once unlocked, individuals or small groups will make best use of these spaces – the various voyages of exploration, Page and Brin, and Burt Rutan respectively.} A dark network has innovation and survival incentives to become early adopter of these technologies. This becomes a particular vulnerability when technologies unlock new fields of human endeavor – for instance, the Royal Observatory for sea navigation, or Internet Protocol\footnote{Transmission Control Protocol / Internet Protocol (TCP/IP) and the Domain Names System (DNS), more precisely.} for cyberspace.\footnote{Following Gen. Hayden, I treat cyberspace as a domain built upon ideas and abstractions for the purposes of this discussion.}

If the state exerts control over extant grey market focal points, the illicit market may be able to unlock new grey market focal points in new spaces. During the Rum War, when the Coast Guard took control of the littorals, rum-runners moved their rendezvous points to the airwaves and hid them behind walls of cryptography. Similarly, as cyber-policing found its footing, illegal e-commerce migrated in 2011 to the ‘deep web’ ‘Silk Road’ site, hidden behind a maze of routers and encryption.\footnote{N. Anderson and C. Farivar, “How the Feds Took down Dread Pirate Roberts,” \textit{ArsTechnica, October} 3 (2013): 2013.} This capability requires a further extension of the Boxer model: \textit{when a new technical space is in play, the state must contest mastery of the space lest the illicit network re-establish secure grey market focal points and metastasize.}

Coordination and rendezvous are equally essential for cross-border trafficking, and in order to move beyond cloistered trust networks, traffickers need to access the world of data. Whether email, cellphones, or ATMs, networked electronic data is a ubiquitous element of modern international business. In this, cyberspace today parallels the Atlantic of the late slave trade era. Like the Atlantic, there are places to hide and ways to move quickly enough to avoid capture.
I predict that cyberspace will be a core domain for an expanded fight against trafficking – an effective suppression campaign should both deny (or at least contest) traffickers’ use of these space, and use of the space itself to facilitate communications and support. Policymakers are increasingly thinking along these lines – addressing the Clinton Global Initiative in 2012, President Barack Obama stated: “We’re turning the tables on the traffickers. Just as they are now using technology and the Internet to exploit their victims, we’re going to harness technology to stop them.”121 A slew of recent law review articles echo the British abolitionist strategy debates of the 1820s,122 imagining new international frameworks for excluding sexual exploitation from the cyber commons, learning early lessons from initial online trafficker countermeasures, and attempting to come to terms with what might be required to see the campaign through.123

While the online anti-trafficking campaign remains in its infancy, initial reflections are consistent with the Boxer model. Traffickers quickly gravitated toward online marketplaces as grey market focal points. Cook County Sheriff Thomas Dart remarked in 2009 that:

Craigslist is the single largest source of prostitution in the nation... Missing children, runaways, abused women and women trafficked in from foreign countries are routinely forced to have sex with strangers because they’re being pimped on Craigslist.124

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122 ...And fortunately bear little resemblance to the strategy-less Prohibitionist pontification...


124 Kunze, “Sex Trafficking via the Internet.”
The Polaris Project, an anti-trafficking organization that runs the US National Human Trafficking Hotline, echoed these findings, identifying “online sex ads as the number one platform for the buying and selling of sex with children and young women [in the US.]… An FBI investigation found that more than 2,800 ads of prostituted children were posted on Craigslist in 2008 alone.”

Pressure from anti-trafficking groups and law enforcement led Craigslist to discontinue their erotic services section, but illicit traffic migrated quickly to other sites. New sites and other online marketplaces took up the slack – refused to take similar actions, Backpage.com became one particular focus of controversy. In response, an act criminalizing the online facilitation of child prostitution passed the US House in May 2014 by a vote of 392-19. Presently under consideration in the Senate, this bill brings online free speech advocates into conflict with anti-traffickers. If the British abolitionists’ rancorous debates with Hutt’s radical free traders are any guide, these arguments are likely to continue. That said, since new websites are much easier to build than new West African harbors, a blockade of modern trafficking will require some content-based rather than site-based means of staunching these lateral moves.

One particularly intriguing tack uses the contours of technology itself against the traffickers. Treating the detection of minor sex trafficking as a “data mining problem,” algorithms can detect probable trafficking victims by their online signature. For instance, a public-private-non-
profit collaboration between MIT, Thorn (an anti-trafficking tech NGO), the Polaris Project, Palantir, IBM, the Royal College of Surgeons produced a series of ‘big data’ tools in 2013.\textsuperscript{129}

One of these uses a genetic algorithm searching for key words to identify probable child victims of sex trafficking through online descriptions. While all sex service ads on Backpage.com list a nominal age of 18, traffickers use code words to communicate actual ages to prospective buyers.\textsuperscript{130} If a buyer can decode these ads, then a genetic algorithm should be able to do so as well, especially if the algorithm can the connect phone numbers and other metadata of suspected child traffickers. Another tool uses online photo analysis to determine whether the person depicted in an ad is underage.\textsuperscript{131} Networks are damage-resilient but virus-prone, and these tools act as social viruses, infecting the natural contours of the network itself rather than attacking specific nodes.

As trafficking networks are increasingly pushed out of these grey market focal points, the Boxer model predicts that some portion of them will demobilize, and some portion will continue into black market forms. These would likely occupy the dark and difficult to trace ‘deep web,’ but in doing so they would incur costs and friction on potential users.

The success of the Virtual Global Taskforce (VGT) speaks to this trend. Founded in 2003, the VGT is a public-private-non-profit collaboration intended to combat online child sexual abuse. VGT includes INTERPOL, EUROPOL, and the federal cybercrime police forces of 11 nations, along with Microsoft, Blackberry, World Vision, the National and International Centers


\textsuperscript{130} Presentation, White House Tech against Trafficking Forum, May 2013.

\textsuperscript{131} Ibid.
for Missing and Exploited Children and a half-dozen others. Rather than dealing with online crimes in physical space - magnetic states on hard drives – the virtual partnership provides allows these organizations to contest these crimes in cyberspace itself. This has proved remarkably successful. The VGT website lists a number of successful joint operations, including:

Operation Endeavour (Jan 2014) – an organized crime group that facilitated the live streaming of on-demand child sexual abuse in the Philippines was dismantled after a joint investigation by the U.K.’s National Crime Agency (NCA), the Australian Federal Police (AFP) and U.S. Immigration and Customs Enforcement (ICE). Operation Endeavor which began in 2012, has to date resulted in: 29 international arrests, of which 11 were part of the facilitation group in the Philippines; 15 children in the Philippines aged between 6-15 identified and safeguarded from sexual abuse; and over £37,500 ($60,000) identified as having been paid for the live abuse of children by the customer network.

Operation Rescue (March 2011) - a global paedophile network consisting of thousands of online members was shattered, resulting in more than 200 children being safe-guarded and 184 offenders arrested across the globe. This operation started in 2007 and involved cooperation between seven of the VGT member agencies, including the Australian Federal Police, the Child Exploitation and Online Protection (CEOP) Centre in the United Kingdom, the New Zealand Police, U.S. Immigration and Customs Enforcement, The National Child Exploitation Coordination Centre, as part of the Royal Canadian Mounted Police, the Italian Postal and Communications

Police Service and Europol.\textsuperscript{133}

In response, child sex trafficking rings were forced to use onerous layered security procedures and extremely costly trust signaling strategies.\textsuperscript{134} This is entirely consistent with the Boxer account of costly countermeasures, and the progress of the historical suppression cases.

\textbf{A Working Theory of Commons Control.} Since the anti-trafficking case is still relatively new, reliable fine-grain data remains scarce. What we do know is generally consistent with the Boxer model. The model offers a set of falsifiable predictions about the probable progress of this case, should suppressors continue to pursue it in earnest.

The rise of new grey market spaces leads to further research questions on the dialectic between risk and privacy in technologically constructed spaces. Ernie Allen, the president of the International Center for Missing and Exploited Children, proposes a difference between “privacy and anonymity” on the Internet.\textsuperscript{135} He argues that anonymity invites malign actors, whereas privacy secures the space with a registration bargain – like a license plate, individuals remain unknown unless there is probable cause for unmasking a registration.

A technologically encountered space is a domain that exists as a ‘brute fact’ but is unknown to humans until technology makes it accessible. The Atlantic Ocean was inaccessible prior to navigation, but sextants opened the space to both licit trade and illicit actors – the British suppression of the slave trade involved a conquest of the commons that culminated in a registration bargain. In the Coast Guard’s suppression of Prohibition, they encountered the new commons of radio waves; after cryptanalytic battles, they similarly arrived at a registration bargain.

\textsuperscript{135} Allen, Ernie, Speech given at Naval Academy Foreign Affairs Conference, 2014.
bargain.

In both of these cases, we find a five-phase process: first, technology unlocks a new space, which is inhabited by civil actors well before it becomes legible to the state. Second, illicit actors generate risk from the space, creating demand for the state to move into the space. Third, the state attempts to gain positive control over the space. Fourth, the state’s expansion causes a reaction from the civil actors in the space. Finally, the state and the civil actors reach a bargain where the state retains ‘negative control’ over the space but agrees to bounds on its power and knowledge. This broadly supports Allen’s proposition, but further research is required for such a theory of registration bargains and commons control.

**CONCLUSION: FOUR EXTENSIONS.**

Each of these four cases generally support the Boxer model. The model does not predict outcomes, as these are a function of ‘how bad you want it,’ and the backers of suppression generally come to terms with that fundamentally normative question only in the course of the campaign. But it does predict progress and ‘bang for your buck.’ When the suppressors encountered major impediments to the Boxer scripts – partner state weakness in the case of narcotics, inadequate cyber policy in the slavery case – they experienced frustration. When the illicit market encountered impediments, such as the lack of a laundering grey market or the lack of a modern piracy black market, the suppressors easily progressed through the Boxer scripts.

These cases also identify extensions to the Boxer model that may be of use to policymakers. The history of piracy points to the importance of understanding the ‘drop-off’ between the grey market and black market phases of an illicit market. If disrupting the grey market through effective patrols and governance permanently eliminates the vast majority of a problem, then policymakers should concentrate on that phase. This could result from two scenarios. If a trade
is particularly dependent on vulnerable fixed infrastructure, or if has high asset specificity, then it may not be able to make the leap to black market structures – this is the case for much of the illicit market for bonded labor.\footnote{Ethan A. Nadelmann, “Global Prohibition Regimes: The Evolution of Norms in International Society,” \textit{International Organization} 44, no. 04 (1990): 479–526; Haugen and Boutros, \textit{The Locust Effect}.} Alternately, in a non-cooperative illicit market, the state can pre-emptively lock out black market forms by hardening the targets and connecting them to ‘hotlines.’ This was the case with automated car theft prevention and anti-piracy.

The financial crimes case demonstrated that certain types of illicit markets have no viable grey market forms. When the nature of the crime depends on deception, known focal points serve little use. In effect, the nature of laundering and counterfeiting begins in black market forms and attempts to sneak ill-begotten flows back into the ‘white market’ money stream. For both laundering and counterfeiting, governments did well to employ networked, intelligence-led forces – the Secret Service against counterfeiting, and FinCEN and the FATF against laundering. The fact that states own the form of their fiat currency and the regulatory gates of global currency flows grants the initiative to the suppressors in these cases. This finding should generalize to all illicit markets based on fraud and deception.

The American-led counternarcotic campaign identifies a key threat to a Boxer strategy – if a state is too weak, a determined black market can ‘break the ratchet’ by overthrowing the state itself. This is a particularly intense form of the corrosive effects of corruption in these campaigns, and may yield a worse situation both for the suppressor and for the society as a whole. Therefore, the suppressor must count the cost prior to setting out on a suppression campaign, and make sure they have adequate governance to survive the attempt. In this, we find some of the complexities and moral difficulties of the British slave trade suppression campaign – West Africa was already unstable in the midst of the Oyo Civil Wars. As they applied additional
pressure to the region through suppression, the resulting governance vacuum drew them further inland. Therefore, the Boxer model relies on a strong assumption of stable governance.

Finally, it is still too early to draw conclusive results from the modern anti-slavery campaign, but initial reflections conform to the general expectations of the Boxer model. The increasing role of cyberspace in trafficking anticipates future black market forms once abolitionists find effective means of denying online marketplaces to slavers. This case highlights the illicit network’s ability to generate new grey market focal points in technologically constructed spaces. They do so by exploiting the relative slowness of the state to come to terms with these spaces. If the case follows the template of the British mixed commission courts or the Coast Guard’s plan to register small craft, the state will seek some sort of ‘registration bargain’ to balance privacy and hazard in these spaces.

In this chapter, we revved the Boxer model to redline with cases that presented unique challenges to the core model. This identified areas in need of structural reinforcement. In the next chapter, we will downshift the model in order to explain as many cases as possible as simply as possible.
CHAPTER 13, LARGE-N SURVEY: DOWNSHIFTING AND LOOSE ENDS.
A GENERAL SURVEY OF TRANSNATIONAL ILlicit MARKET SUPPRESSION ATTEMPTS.

The Boxer model is built intentionally to explain difficult cases. Therefore, it is over-engineered for less challenging cases, which might be explained more simply. In this chapter, we will briefly survey the universe of illicit market suppression attempts. Certain complex illicit markets require the full Boxer model, but many illicit markets have structural vulnerabilities that can be exploited through the application of force, norms, or regimes alone. By understanding these boundary conditions, we better trim the model for policy applications.

This chapter takes a brute force approach – since the universe of major transnational illicit market suppression cases is fairly limited, we will briefly explore as many as possible.\(^1\) We begin each case with a short narrative description. We then evaluate relative efficiency and support within the case, as well as progress through the operational script. Each entry concludes with a discussion of unique conditions and viable simpler explanations.

This universe is something of a fuzzy set – smuggling networks are often multi-mode, and one campaign might involve the disruption of multiple rings of different constitution and character. I have attempted to organize these overlapping and complex cases to capture a structured *gestalt* of transnational suppression over time.\(^2\) Due to dissimilarities in scale, scope and context between these themed cases, I do not see them as equivalent units of analysis.

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\(^1\) Statistical inference relies on a fixed ontology, which I view as inappropriate for evaluating complexity and stability. Instead, I use a very brief version of structured, focused comparison, and evaluate whether progress and adaptation fits with the Boxer model’s scripts. Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (The MIT Press, 2005).

\(^2\) There are myriad valid ways to subdivide the history of illicit market suppression. In my explorations of the topic, finer grained lenses and coarser lenses tell similar general stories about the nature of transnational market suppression. A critic may, of course, prove me wrong by dividing the dataset in a way that I have not found which leads to a different *gestalt*. 
suitable for quantitative inference.³

I have excluded most cases that are clearly subsidiary to interstate warfare or insurgencies. For instance, child soldiers are a particularly heart wrenching expression of modern-day slavery, but the process of enslavement is typically an adjunct to the primary conflict rather than a network of its own. On a less tragic note, every blockade begets smugglers. Most insurgencies and civil wars are backed by some sort of trans-border smuggling network. These cases resolve themselves with the end of the war, and are typically logistical adjuncts of the main campaign. While objectively interesting, they tell us little about transnational crime, as their demand functions are rooted squarely in wartime needs.⁴ I do include wartime counterfeiting campaigns, however, as these are generally resolved through law enforcement rather than military channels.

In addition, I exclude most steady-state transnational law enforcement efforts. Every state has myriad customs laws that they attempt to enforce and others attempt to break. For instance, illegal fishing is an enduring steady-state management mission for most coast guards. This is not to devalue these efforts – excessive speed kills far more people than mafia hit-men in any given year, but traffic violations are static, predictable and therefore banal from a networks perspective. The dataset focuses on deliberate efforts to alter a status quo.

Further, I exclude cases prior to the treaty of Westphalia, as the idea of transnational crime assumes a modern conception of states. This excludes the Caliphate’s campaign against alcohol, which is probably for the best, as historians of Islam vary greatly even on the facts of when and

³ I have not yet found a coding scheme that can make these episodes both commensurable and nontrivial. Perhaps some future quantitative scholar can correct this failing.
⁴ That said, there are some interesting parallels between wartime smuggling and simple criminal smuggling. During the Civil War, the United States was furious with British for producing ‘Clyde built’ Confederate commerce raiders. The British returned the same plea of helplessness that the United States had given them regarding the Baltimore and New York produced African blockade-runners. Eric J. Graham, Clydebuilt: The Blockade Runners, Cruisers and Armoured Rams of the American Civil War (Edinburgh: Birlinn Ltd, 2008).
how the prohibition transpired.⁵ That case shares some commonalties with other prohibitions—
for instance, the role of marginal groups in provisioning contraband,⁶ the importance of strong
domestic enforcement, and the ease with which a popular market can survive by turning grey.
However, the illiberality of first-millennium governance and the differences in political structure
make it impossible to attempt a real comparison.

These campaigns break down into six broad categories. Financial crimes include laundering
and counterfeiting. Alcohol and drugs comprise the category of illicit psychoactive substances.
Piracy is the archetype of systematic transnational grand theft. Slavery⁷ is the primary crime
involving the commodification of humans, but the category also includes semi-consensual organ
trafficking, human smuggling and prostitution. Environmental crime suppression campaigns
focus on preventing trafficking of endangered species. International arms trafficking rings,
which I differentiate from wartime blockade-running logistics efforts, constitutes the last
category of transnational suppression targets. Mafias typically participate in multiple categories
of suppressible practices.

A universal survey attempt is bound to overlook some cases. For that I apologize in advance,
and I apologize as well as for the extremely coarse brush used to describe these cases. We
proceed chronologically.

⁵ For two conflicting perspectives, see Kathryn Kueny, The Rhetoric of Sobriety: Wine in Early Islam (Albany: State
Addiction 76, no. 3 (September 1981): 233–43.
⁶ For instance, production of alcohol migrated toward religious minorities who lacked the prohibition on drink,
while consumption of alcohol was not confined to these minorities. Echoes of this can be seen in Christian
ownership of Iraqi liquor stores, who supply Iraqi Muslims with drink as well as other Christians. “Alcohol Is
Flowing Again in Baghdad | Iraq | McClatchy DC,” accessed August 20, 2014,
⁷ Including natal chattel slavery, debt bondage, forced labor, and sex trafficking.
<table>
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<tr>
<th>Case</th>
<th>Years</th>
<th>Illicit Item/Practice</th>
<th>Starting Network</th>
<th>Resulting Network</th>
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<td>US Civil War Counterfeit Flood</td>
<td>1861-1865</td>
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<td>Largely Effective Maintenance Effort. &lt;0.003% USD effective counterfeits.</td>
</tr>
<tr>
<td>Case</td>
<td>Years</td>
<td>Illicit Item/ Practice</td>
<td>Starting Network</td>
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<tr>
<td>Contemporary Slavery: Europe &amp; Middle East</td>
<td>(Est.) 1990-Pres</td>
<td>Slavery</td>
<td>Grey Market</td>
<td>Ongoing (Grey/Blk)</td>
<td>Discussed in Chapter 12.</td>
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</table>
PIRATES: *EXPULSIS PIRATUS/RESTITUTA COMMERICA, 1839-1860.*

*See Chapter 12.*

OPIUM WARS: ROYAL PUSHERS, 1839-1860.

*Narrative.* Opium had some presence in China since the turn of the first millennium or earlier, though high prices kept use in check until the 17th century.8 The growth of world trade upset this equilibrium, as decreased prices led to increasing consumption. As this trend reached epidemic proportions, it created “an empirewide crisis that spread among an ethnically diverse populace and created regionally and culturally distinct problems of control for the … state.”9 The ruling Qing Empire attempted to prohibit opium consumption. They failed, due to a combination of imperial governance problems and British military intervention.

According to the UNODC:

Opium use spread rapidly along the coastal areas of China in the 17th century, and the first wide-scale opium addiction problem was detected in the port of Amoy (Xiamen) in Formosa (Taiwan) in 1683. In response to rising addiction levels, Chinese emperor Yongzheng issued a decree banning the import and sale of opium in 1729… The ban was initially vigorously enforced, and had the effect of both slowing the spread of the problem and dramatically increasing prices. It also marked the beginning of the opium smuggling industry… These bans encountered tremendous resistance from European traders intent on penetrating Asian markets.

Chinese addiction did not reach epidemic proportions, however, until the end of the

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18th century, when the lion’s share of the trade fell into the hands of the British East India Company… Opium proved to be the wedge the Western powers had been seeking to pry open the Chinese market, which had heretofore proven nearly impenetrable.10

Corruption created avenues for the continued illegal import of drugs. The British East India Company took full advantage of these avenues. This led to an escalation of tensions between the Chinese government and the British, resulting in the Opium Wars. UNODC again:

In 1839, the emperor issued an edict ordering the seizure of all the opium in Canton, including that held by foreign governments… The British response was to attack the Chinese coast, with the navy taking Canton and other towns up the Yangtze river. Defeated, the Chinese were forced to sign the Treaty of Nanking (1842) … Opium remained officially illegal in China, but the Chinese authorities were left with very little scope to combat the trade, particularly where foreign interests were concerned. The Chinese smugglers quickly took advantage of this awkward situation, having their vessels registered in Hong Kong as British ships in order to deter official interference.

This charade was the basis for the second Opium War, when, in 1856, a Chinese craft flying the British flag was seized for involvement in piracy and smuggling. Once the ship was taken to port, the Chinese crew was arrested and the English flag was torn down. The British navy, supported by French troops, retaliated, ultimately taking Beijing… in the resulting treaty of Tientsin (1858), China was, inter alia, forced to

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10 Ibid, 173-175.
fully legalize the importation of opium.\textsuperscript{11}

In the century that followed, the Chinese government unhappily accepted the continuing presence of opium, and taxed the drug.

Nationalism saw a return to suppression - Chiang Kai-shek attempted a “Six-Year Plan to Eliminate Opium” in 1935. This established a governmental monopoly on the sale of opium, and attempted to wean addicts off of the drug through controlled doses and rehabilitation clinics.\textsuperscript{12} After the Second World War, Chiang and Mao Tse-tung brought these efforts to pass in their respective realms around 1950 – the latter by threatening the summary execution of addicts.\textsuperscript{13}

\textbf{Evaluation.} The Opium Wars stand out as a disgraceful anomaly amongst transnational suppression campaigns. External powers often quietly profit off of corruption during a suppression campaign. In this case, another nation openly used national military power in order to pry open doors for pushing drugs.

If we consider the British Empire part of the illicit network, which in this case seems warranted, the model still holds. The Qing Empire was relatively fractured and suffered from corruption, the smugglers and the British intervention forces were in league, and opium demand was strong – the suppressors were outclassed in both efficiency and support. Power alone provides a more straightforward and elegant explanation, though.

\textbf{NORTH AFRICAN PIRATES: THE SHORES OF TRIPOLI, 1801-1817.}

\textbf{Narrative.} Shortly after the War of Independence, the United States had a major merchant

\textsuperscript{11} Ibid, 175.
\textsuperscript{12} Alan Baumler, \textit{Modern China and Opium: A Reader} (University of Michigan Press, 2001). 151.
fleet but a relatively weak navy. The threat of Barbary corsairs to American shipping demanded a policy response. Rather than pay tribute, President Jefferson elected to fight. According to naval historian Robert Turner:

The Barbary regencies had preyed upon European commerce—and were generously rewarded for having done so—for two centuries before the United States arrived on the scene as an independent actor. The revolutionary victory deprived American ships of the protection of the British flag—like other European powers, the British were paying tribute to secure unmolested transit on the high seas. This lack of protection, combined with the increase in American commerce and the fact that American merchant ships “carried not an ounce of shot” to defend themselves, made the new nation’s commerce particularly attractive for plunder. Jefferson’s response to the Barbary threat was to use the nation’s new naval forces to face down and destroy the pirate threat.14

According to Gerard Gawalt, Jefferson manuscript specialist at the US Library of Congress, the extended campaign achieved its ends after much time, effort, frustration and controversy:

The American show of force quickly awed Tunis and Algiers into breaking their alliance with Tripoli… The aggressive action of Commodore Edward Preble (1803-4) forced Morocco out of the fight and his five bombardments of Tripoli restored some order to the Mediterranean. However, it was not until 1805, when an American fleet under Commodore John Rodgers and a land force raised by an American naval agent

to the Barbary powers, Captain William Eaton, threatened to capture Tripoli and install the brother of Tripoli’s pasha on the throne, that a treaty brought an end to the hostilities…

… it was not until the second war with Algiers, in 1815, that naval victories by Commodores William Bainbridge and Stephen Decatur led to treaties ending all tribute payments by the United States. European nations continued annual payments until the 1830s. However, international piracy in Atlantic and Mediterranean waters declined during this time under pressure from the Euro-American nations, who no longer viewed pirate states as mere annoyances during peacetime and potential allies during war.15

Evaluation. As with the previous case, the Boxer model holds, but state power on its own is adequate to explain this outcome. The Boxer model provides additional analytical leverage for the extended period of the US Navy’s organizational learning from 1803 until 1815. As a complex unconventional campaign, the adaptation and acculturation process takes time.

As with the Opium War case, power provides the simplest explanation for campaigns against state-backed illicit markets. Specifically, this is likely when a nation or group of nations sponsor the illicit market as a matter of overt national policy. Therefore, we would expect to see these sorts of behaviors in a multi-polar world, where contests of power are not pre-determined. As the Brazilians encountered in the British slave trade suppression case, hegemons do not generally brook open defiance lightly.

BRITISH SUPPRESSION OF THE ATLANTIC SLAVE TRADE, 1808-1867.

See Chapters 5, 6, and 7.


Narrative. We discussed the controversies surrounding the ‘Coolie Trade’ in Chapters 6 and 7. Human trafficking through fraud from Asia replaced trafficking through force from Africa – these practices resembled debt bondage schemes. The interests of the British East India Company, who profited by these flows, clashed with British abolitionists, who saw them as a relabeled form of slavery. The latter eventually prevailed, and the British suppressed the trade from their holdings in China and India.

Evaluation. The Boxer model is unnecessary to explain this case. British abolitionists were successful in norm entrepreneurship, and this trade was considered an appendage of the slave trade. Since the British held territorial control over the source regions for this trade, they were able to effect a straightforward ban and suppression. There was little ability to run either a grey or a black market out of a tightly-controlled trading enclave, so the suppression campaign concluded quickly.

NORTH AFRICAN SLAVERY: THE BOMBARDMENT OF ALGIERS, 1816.

Narrative. Though we briefly discussed this case in Section 2, I will briefly excerpt Pocock’s Breaking the Chains, which casts more light on this campaign. Building on the momentum of the abolitionist movement, Vice-Admiral Sir Sidney Smith built the dramatically named ‘Knights Liberators and Anti-Piratical Society.’ This particularly bellicose expression of the freedom impulse found purpose in the nominally Ottoman North African corsairs’ practice of

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taking hostages as slaves.\textsuperscript{17}

Smith managed to kindle the public imagination toward military intervention against this ‘white slavery.’ An 1816 diplomatic mission under the renowned Admiral Edward Pellew set out for Tripoli, Tunis, and Algiers to request the release of any held slaves and the disavowal of slaving. While the two former regencies agreed to the request, negotiations with Algiers broke down and a number of captives were killed.\textsuperscript{18}

Pellew returned in the summer of that year with an Anglo-Dutch fleet of 27 ships and more than 800 guns. In the course of a pitched battle, Pellew’s fleet destroyed the Algerian shore fortifications. The Dey of Algiers surrendered, released his captives, and foreswore future slaving.\textsuperscript{19} This sole set-piece battle of the overall suppression campaign cost the British more than a hundred lives, and the Algerians an order of magnitude more.\textsuperscript{20} Though this clash came to a conclusive end, it helped to steer the British and the Ottomans toward a collision course with each other that would culminate in the Greek wars for independence.\textsuperscript{21}

\begin{itemize}
  \item \textsuperscript{17} Tom Pocock, \textit{Breaking the Chains: The Royal Navy’s War on White Slavery} (US Naval Institute Press, 2006).
  \item \textsuperscript{18} Ibid.
  \item \textsuperscript{19} This ban held through the threat of force for a time, but showing weakness cost the Dey his life – he was killed and replaced shortly after the battle. Ibid.
  \item \textsuperscript{20} Seymour Drescher, \textit{Abolition: a History of Slavery and Antislavery} (Cambridge; New York: Cambridge University Press, 2009); Pocock, \textit{Breaking the Chains}.
  \item \textsuperscript{21} Pocock, \textit{Breaking the Chains}.
\end{itemize}
**Evaluation.** This campaign fits the trend of anti-pirate intervention against state-backed illicit markets. An identifiable political structure both materially supported and had the means to end the illicit market. Force alone is an adequate explanation for this campaign. However, it is interesting how these interventions set complex forces into motion, which spiraled well beyond the original visions of the early abolitionists - Granville Sharp would have been surprised indeed to learn how the abolitionist narrative came to encompass Greek resistance to Ottoman rule.

**US Civil War Counterfeit Flood, 1860-1865.**

**Narrative.** As described in Chapter 12, counterfeit currencies flooded both the North and the South during the civil war. This was not the first American encounter with economic warfare – "during the American Revolution, the British counterfeited U.S. currency in such large amounts that the Continental currency soon became worthless. ‘Not worth a Continental’ became a
popular expression of the era.\textsuperscript{22}

The 1860s wartime surge came about through a mix of individual profiteering and economic warfare, but the counterfeiting problem outlasted the war. According to the US Secret Service:

During the Civil War, one-third to one-half of the currency in circulation was counterfeit. At that time, approximately 1,600 state banks designed and printed their own bills. Each bill carried a different design, making it difficult to detect counterfeit bills from the 7,000 varieties of real bills.

While a national currency was adopted in 1862 to resolve the counterfeiting problem, it was soon counterfeited and circulated so extensively that it became necessary to take enforcement measures. As a result, on July 5, 1865, the United States Secret Service was established to suppress the widespread counterfeiting of the nation's currency.\textsuperscript{23}

The description of the Secret Service in Chapter 12 picks up the story from this point.

\textit{Evaluation.} Interestingly, prior to the adoption of a national currency, counterfeit networks used the inefficiency of the fractured banking system to establish a grey market. National currency control served the same effect as patrolling. Therefore, regimes in the form of a unified currency explain progress in this case. However, if we link this case with the following Secret Service case from the last chapter, the Boxer model best explains the overall trajectory.

Like piracy, economic warfare is an adjunct to a conflict, but it tends to remain a problem afterwards as well. Where piracy is very similar to commerce raiding, economic warfare tends to move more as a cloud or a swarm. Like a virus it is difficult to defend against, and difficult to

call back. Hardening (or at least unifying) the currency provides basic defenses, as do border control procedures, which could prevent the cross-border introduction of these counterfeits. Therefore, regime theory has the best leverage against these sorts of threats.

**BRITISH CAMPAIGN VS. EAST AFRICAN SLAVE TRADE, 1870-1890.**

*Narrative.* This campaign was briefly discussed in Section 2. Following the initial surge of abolitionism, historian Howard Temperly described the evolution of the anti-slavery movement, as “transformed into a number of streams, some flowing strongly, some weakly, some turning into sluggish backwaters, some disappearing altogether.”24 The East African campaign was a weaker stream that strongly intermingled with imperial objectives.

Suppression of the East African trade is covered in depth by Raymond Howell in *The Royal Navy and the Slave Trade,* and George Sullivan provides a first-hand account of the effort in *Dhow Chasing in Zanzibar Waters.*25 In quick overview, the East African slave trade shipped captives to the Middle East. The British attempted naval suppression, which led to complex colonial and imperial engagements with Zanzibar. These yielded an effective end to the sea trade, while deeply embedding the British in the area. After the sea trade was suppressed, the campaign had a more difficult time identifying and addressing remaining deeply culturally embedded forms of slavery in inland colonial holdings. The British abolitionist lens was calibrated for the West African forms of slavery, and the imperial imagination was increasingly

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focused on other issues by the turn of the 20th century.26

_Evaluation._ The East African sea trade had fewer degrees of freedom than the West African trade, but followed a generally similar course. A combination of the continued application of force and imperial regime arrangements with source regions contained and eventually disrupted the trade. These events can be explained by the Boxer model well, though force and regime theories give a strong account as well. The follow-on difficulties with the collision of slave labor and colonial governance are best understood through the normative lens’ focus on the contestation of meanings.

‘**White Slavery’ and Anti-Prostitution Campaigns, 1885-1930.**

_Narrative._ This campaign was briefly discussed in Chapter 12. The narrative of slavery and the narrative of anti-prostitution increasingly co-mingled around the turn of the 20th century. These two concepts exist in a tension-ridden relationship that dates back to Wilberforce’s two ‘great objects’ – the abolition of slavery and the reformation of manners.27 This reformation included a slew of social reforms, including opposition to prostitution, alongside the prevention of animal cruelty and other expressions of public morality.

The concept of ‘white slavery’ synthesized the two concepts by positing a route into forced prostitution through abductions and captivity. This compelling narrative rested upon empirically shaky ground; historian Mary Ann Irwin describes the campaign as a “moral panic.”28 In the United States, this synthesis spurred the 1910 White-Slave Traffic Act,29 better known as the Mann Act. This law made the interstate transport of women “for the purpose of prostitution or

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26 “The Windmill of Slavery.”
27 Adam Hochschild, _Bury the Chains: Prophets and Rebels in the Fight to Free an Empire’s Slaves_, Reprint (Mariner Books, 2006).
29 Better known as the Mann Act.
debauchery”\textsuperscript{30} a federal felony. In the international, the 1904 International Agreement for the Suppression of the White Slave Traffic promised information sharing agreements along with repatriation and support for victims.\textsuperscript{31} This treaty built an international legal foundation for later efforts against human trafficking.\textsuperscript{32}

\textbf{Assessment.} This act of norm entrepreneurship and narrative framing was successful in reaching its legislative goals, but it is difficult to empirically assess the magnitude of the early slavery-prostitution link or the effect of this legislation in suppressing these practices. Unfortunately, the Mann Act was imprecise in its framing and deeply problematic in its application.\textsuperscript{33} Still, the amended version of the act provided a means of prosecuting child traffickers prior to the Victims of Trafficking and Violence Protection Act of 2000.\textsuperscript{34}

The relationship between the conceptions of prostitution and trafficking remains problematic.\textsuperscript{35} These campaigns hinge on issue linkage and meanings, and therefore can be best explained through a normative lens. Insofar as the issue linkage is successful, this campaign can be considered an adjunct to the larger anti-slavery project, which is better explained through the Boxer model.

\textbf{INTERNATIONAL PROHIBITION EFFORTS, 1914-1988.}

\textsuperscript{30} \textit{The Statutes at Large, the United States from ...} (U.S. Government Printing Office, 1911).
\textsuperscript{35} This is especially true with the rise of a minority sex worker legalization opinion within the larger abolitionist movement. Legalization as a solution for trafficking remains a minority opinion within the abolitionist movement. As argued by anti-trafficking activist Norma Ramos, approximately 89\% of American sex workers are un-free and desired to leave, and legalization would dramatically increase the legal protections of their captors. Moreover, legalization has not served well in reducing trafficking when tried in Italy. http://www.catwinternational.org/Content/Images/Article/140/attachment.pdf
Narrative. We briefly discussed the Canadian provincial prohibition campaigns in Chapters 9 and 10. The global prohibition movement found some success during this period in the Nordic States and the English-speaking world during this period. Much of this resulted in administrative impositions and local dry laws, but a handful of nations attempted full prohibition. Mark Lawrence’s *The Political Power of Bad Ideas* describes and explains this wave, and I borrow the short trajectories of these cases from his action.36

![Figure 68: Prohibition Countries, 1912-1935. (Lawrence, *Political Power of Bad Ideas*.)](image)

Russia, 1914-1925. Russia’s Tsarist prohibition campaign was catastrophic, supporting political upheaval and all other sorts of mayhem. Since liquor taxes financed much of the government, the campaign cost the treasury one-third of its revenue.38 One commentator linked

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37 Schrad, *The Political Power of Bad Ideas*.

38 Ibid.
it to the fall of the Tsar himself.\textsuperscript{39} Intriguingly, it was one of the few Tsarist carryovers into Soviet policy.\textsuperscript{40} As in the United States, homemade liquor filled the gap. This \textit{samogon}\textsuperscript{41} was derived from stills or repurposed industrial products. Despite Soviet authoritarian law and a propaganda campaign, the practice continued. In the search for revenue, the Soviet Union re-legalized and sold alcohol from state stores.

Russia’s paradoxical history with alcohol prohibition is a case in and of itself. According to legend, Grand Prince Vladimir of Kyiv selected Christianity over Islam based on its allowances for drinking – “Drinking is the joy of the \textit{Rus’} [early Russians], we cannot do without it.”\textsuperscript{42} Whether this is true or not, the Russian experience speaks to the power of illicit markets and chemical dependency in governance. Like the Tsar, Gorbachev’s bid to wean the Russians off of vodka in favor of beer cost him sorely needed public support.\textsuperscript{43} The hard-drinking Yeltsin fit better within the Russian comfort zone. Strangely, the Russian prohibition model better approximates drug wars in weak states than it does other alcohol prohibition models.

\textit{Nordic States, 1915-1932.} Iceland, Norway, Finland and Estonia attempted forms of national prohibition. The Norwegian example is representative. According to University of Oslo Criminologist Ole Johansen, “the prohibition generated several ‘internal’ problems, like organized crime, black economy, ‘untraditional’ policing methods, and negligence of social

\textsuperscript{39} Ibid.
\textsuperscript{40} Ibid.
\textsuperscript{41} Russian for self-distilled alcohol. Literally “Self (\textit{sam}) Fire (\textit{ogon’}),” the sense in Russian is that the liquor came into existence on its own, as opposed to having been procured through licit means. The same ‘\textit{sam}’ root is used in the underground \textit{samizdat} press, which means literally ‘self-printed.’
\textsuperscript{42} Prof Kate Tranchel, \textit{Under the Influence: Working-Class Drinking, Temperance, and Cultural Revolution in Russia, 1895-1932}, 1 edition (Pittsburgh, Pa: University of Pittsburgh Press, 2006).
issues other than alcohol consumption."44

While these problems parallel the American experience, the Norwegian tale has an interesting twist. The ‘wine countries’ of France, Spain and Portugal refused to buy Norwegian fish in retaliation for the Norwegians outlawing their preferred wares.45 Therefore, the pressures of a foreign trade war accelerated repeal.46

Finland’s prohibition lasted the longest, from 1917 until 1932. Their experience most closely parallels that of the United States. Outlawing liquor led to a 70% drop in consumption, which eked back up over the course of the campaign.47 Complicating matters, the ‘wine countries’ levied retaliatory tariffs on Finnish lumber products.48 While prohibition gave birth to Finnish liquor smuggling, repeal in 1932 did not bring it to an end – a point made by the US Coast Guard in their prognosis of post-repeal illicit liquor traffic.49

Iceland provides one final note to these campaigns. Prohibition lasted there between 1915 and 1933 for wines and the traditional Icelandic liquor. However, a still-resilient temperance coalition kept a ban on beer in place until 1989.50

**Evaluation.** Like the American prohibition campaign, the Boxer model best explains progress through these campaigns. They are each complex systems with many leverage points,
and therefore require a model that deals with well complexity. As it was the longest and most adaptive case, Finland’s prohibition best fits the Boxer model. Russia fits the model as well, though its experience falls into the drug war weak state extension from Chapter 12. The Boxer model explained the rest of the Nordic cases well, though regime theory might account for the outcome through the ‘wine country’ trade war alone.

**American Prohibition and the Rum War at Sea, 1920-1936.**

*See Chapters 8, 9, and 10.*

**European Opium and Heroin Policy, 1800-Present.**

*Narrative.* While Indian opium flowed into China during the 1800s, Turkish opium flowed increasing toward Europe. During that century, opiates were taxed and developed as pharmaceuticals, resulting in the invention of morphine and heroin. In the early 1900s, attitudes shifted from tolerance toward suppression. The UNODC gives a favorable account of the campaign that followed. As with any ‘drug war’ analysis, without a strong counterfactual, partisans are free to calibrate to comparisons that suit their ends. Still, Italian economist and former UNODC Executive Director Antonia Maria Costa presents a plausible statistical case for containment.

In 1906, 25 million people were using opium in the world (1.5% of the world population) compared with 16.5 opiate users today (0.25% of the world population). In 1906/07, the world produced around 41,000 tons of opium – five times the global level of illicit opium production in 2008. While opium used to be produced in a huge belt, stretching from China to Indochina, Burma, India, Persia, Turkey and the Balkan countries, the illegal production of opium is now concentrated in Afghanistan.
(92%)… International drug control can take some of the credit…

The first steps [of international drug control] were taken grudgingly. Despite a major opium epidemic in China at the end of the 19th century, there was little interest in suppressing a business that was so profitable for opium merchants, shippers, bankers, insurance agencies and governments. Many national economies were as dependent on opium as the addicts themselves. Indeed, what Karl Marx described as ‘the free trade in poison’ was such an important source of revenue for the Great Powers that they fought for control of opium markets.

But by the beginning of the 20th century, the global trade in drugs was becoming a global problem which required a global solution. With the prodding of anti-opium activists, the first international conference on narcotic drugs was held in Shanghai in 1909, paving the way for the International Opium Convention of the Hague in 1912. Over the next fifty years, a multilateral system to control production, trafficking and abuse of drugs was developed.51

Costa builds an implicit counterfactual by comparing the impact of regulated drugs (alcohol and tobacco) to illicit drugs, arguing for successful containment and the effectiveness of the regime.

Illicit drug use (mostly on an occasional basis) has been contained to around 5 percent of the adult population… a much lower prevalence than less regulated drugs like alcohol and tobacco. Deaths due to drugs are... one tenth of those killed by alcohol and twenty times less than those killed by tobacco.52

**Evaluation.** I do not assess whether Costa’s counterfactual presents the best of all possible

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51 “100 Years.” UNODC
52 “100 Years.” UNODC
worlds. But it presents a *prima facie* case that the consumption externalities of certain drugs exceeded societal tolerances, a suppression regime was put in place, and that regime had some effect in decreasing consumption. This century-long campaign required much reciprocal adaptation and organizational learning. Since the Boxer model has a theory of change and adaptation, it presents the best heuristic for this trajectory.

**Hungarian & Russian Counterfeit Rings, 1925 & 1928.**

*Narrative.* In the wake of the First World War, Stalin’s Soviet Union attempted to fill national coffers by counterfeiting American currency. The Hungarians attempted to avenge their loss in the First World War by participating in a plan, with some uncertain level of involvement with Germany, to devalue the French Franc through counterfeiting. Hungarian-American Andor Clay tells the story in *Slavic Review:*

Stalin’s little-known 1928 caper, the production and distribution of bogus hundred-dollar bills, was preceded by an even less known venture of the same sort. Specialists in East European history have left it unexplored during the decades which have passed since it occurred, and several aspects of the plot behind it, as well as some of its most powerful supporters, remain unknown. It happened in 1925, and involved a string of high-ranking Hungarian civilian and military personages, with a prince at one end and a bishop at the other.

The ultimate fiasco of the bizarre Hungarian enterprise was not caused by the kind of general mismanagement which plagued the Russian action. Its collapse came as a result of weak nerves and ill luck on the part of a single individual. The principal motives were also different. The Russian project, with its approximately 10 million forged U.S. dollars, arose out of the Soviet Union's economic plight at the time. The
Hungarian undertaking, on the other hand, with its reported 1.5 billion bogus French francs, had been designed to embarrass the French government politically, damage it economically, yield funds for irredentist propaganda and intelligence activities, and serve on the whole as partial revenge for blows dealt by the post-World War I Treaty of Trianon (1920), which had truncated Hungary and for which, in Magyar eyes, France had been mainly responsible.53

Evaluation. Large-scale state-led currency crimes are difficult to carry out successfully. There are generally too many single points of failure. I consider both failures as functions of the defenses of a target currency’s currency regime, and the inherent complexity of these schemes. There is a generalizable lesson here: state-backed crime suffers from all the impediments as state-backed suppression. Without innovative market structures, these schemes are on equal footing with state defense mechanisms. Without the market’s native adaptive advantages, they tend to be fragile and failure-prone.


Narrative. Operation Bernhard was the single most ambitious attempt at state counterfeiting. During the Second World War, the Nazis planned to hyper-inflate allied economies by releasing mass-produced high-quality forged currencies. Czech master counterfeiter Adolf Burger tells the story of this scheme in *The Devil’s Workshop.*54

Using known counterfeiters and concentration camp labor, SS Officer Bernhard Kruger produced “£150,000,000 in counterfeit notes of various denominations – in the neighborhood of

$7 Billion by today’s standards.”55 Initially, the plan was to drop this currency over Britain using the Luftwaffe in hopes of undermining the pound. The loss of the Battle of Britain made this a dubious prospect, so the money was used instead to “finance various Nazi clandestine activities outside the United Kingdom.”56 From there, the false money flowed into historical speculations of varying plausibility.

**Evaluation.** As with the previous schemes, this state-run counterfeiting plan did not turn out as planned. Still, a well-built counterfeiting enterprise managed to make large volumes of passable notes. Eventually, the British took draconian measures with their remaining currency to remove the fakes from circulation, so this episode can be explained through a regime model. There is not enough back-and-forth to justify the added complexity of a Boxer explanation.

**WILDLIFE CRIME & ENDANGERED SPECIES: 1948-PRESENT.**

**Narrative.** For the sake of parsimony, I have included multiple endangered species and environmental campaigns in one narrative of wildlife crime. Wildlife crime has existed as long as poachers and gamekeepers. Traditionally, efforts to prevent wildlife crime were maintenance-level resource protection actions directed against individuals or small groups of offenders. An increasing realization of the severity of extinctions in the 20th century led to a series of international agreements on the preservation of endangered species, which reshaped the general campaign against wildlife crime. These agreements created to the International Union for the Conservation of Nature (IUCN), and from the 1960s onward, IUCN Red Notices highlighted species at particular risk. The Convention on International Trade in Endangered Species

56 Ibid.
(CITES) extended these concerns into the realm of international trade.\textsuperscript{57}  

These efforts were largely observed in the breach. According to a 2000 article from a UC Davis Journal, cited in the UNODC Wildlife Crime toolkit:

Wildlife protection legislation remains a low priority in most parts of the world, and non-existent in the rest of it. Enforcement of the few international treaties aimed at preventing trade in this macabre biological bazaar ranges from delinquent to derelict. In fact, Customs officials in many nations are not inspecting for biological contraband or are untrained in detecting it. Similarly, wildlife inspectors and permit authorisation agencies in member nations often lack the training necessary to discharge their responsibilities… The odds of getting caught are extremely low, and the possibility of being convicted is virtually non-existent.\textsuperscript{58} 

The International Whaling Commission stands as an example of this. This body charged with managing the world whaling population is split down the middle between pro- and anti-whaling members. The commission serves as a platform for norm contestation between these two groups, but it has little enforcement power due to its voluntary nature.\textsuperscript{59} 

However, wildlife crimes have increasingly garnered attention through an ‘organized crime’ lens in the last few years. Since 1984, a small organization named the Environmental Intelligence Agency began focused investigations into environmental crimes. According to the Guardian:

The EIA was set up by people who had worked for big conservation charities, and felt

\textsuperscript{57} http://www.cites.org/eng/disc/what.php  
\textsuperscript{59} Jean-Frédéric Morin and Amandine Orsini, \textit{Essential Concepts of Global Environmental Governance} (Routledge, 2014).
there was a need for a more flexible, fast-moving operation, which could get evidence of environmental offences by working undercover on the ground, and then lobby governments for change... The team has fought dozens of global environmental battles, from playing an instrumental part in the banning of the ivory trade in the late 80s to helping stamp out the illegal sale of ozone-destroying CFC chemicals in the US in the 90s.\textsuperscript{60}

Illicit market suppression campaigns go hand-in-hand with the ideas of networks and organized crime, and increasingly the response to wildlife crime is taking these forms. As early as 1994, INTERPOL began issuing ‘eco-messages’ share information on environmental crime amongst national law enforcement.\textsuperscript{61} A series of 2014 editorials increasingly used words like “kingpin” and “network” to describe organized wildlife crime.\textsuperscript{62} Given the recentness of the counter-networks turn in wildlife crime, it is difficult to assess whether this frame is a good fit to these problems.

\textit{Evaluation.} Small-scale wildlife crimes fall under the rubric of maintenance actions. The international treaty network can be explained through regime theory. Any movement on the International Whaling Commission is conversely primarily due to norms. However, if the new wave of network approaches prove a good match for the current form of the problem, the resultant campaign would fit the Boxer model.

\textbf{Modern Anti-Counterfeiting, 1950-Present.}

\textit{Narrative & Evaluation.} Increasing sophistication in currency printing and minting

\textsuperscript{61} “Ecomessages.” \textit{INTERPOL}. http://www.interpol.int/Crime-areas/Environmental-crime/Ecomessage
technology makes life difficult for modern counterfeiters. On one hand, printing and imaging technology continues to improve, which offers something of a counter for poorly-made counterfeits. However, production of passable counterfeits requires a number of expensive signature technologies. Since counterfeits are aggressively investigated and traced, the expected return of counterfeiting is heavily outweighed by cost and risk.

The recent ‘superdollars’ provide an exception to this rule. These extremely well-made counterfeit $100 bills were first detected by the Secret Service around 1990. In a 2008 Congressional Research Service report, the United States accused North Korea of producing these notes.63 Modifications to the United States $100 note were designed to counter this threat, but the challenge of sanctuary-protected counterfeiters remains.

Still, the anti-counterfeiting regime for the U.S. dollar is highly effective – while it is difficult to assess the true amount of fake currency, the Secret Service consistently detects less than $200 million of counterfeit currency annually,64 out of a total of $1.24 trillion circulating dollars.65 The same pattern holds for other global reserve currencies. Online financial crime is a far more lucrative avenue for would-be forgers. These status quo maintenance efforts are well explained by regime theory, though the previous competitive adaptation cycles that achieved this end better fit the Boxer model.


Narrative. Pakistani nuclear scientist A.Q. Khan built a network from the 1980s onwards for smuggling nuclear material and proliferating nuclear technology. He was apprehended and

64 From 1987 to 1994.
confessed in 2004 to nuclear smuggling. According to the Council on Foreign Relations:

The Pakistan-based network traded everything from blueprints for centrifuges that enrich uranium--creating fuel for nuclear weapons--to weapons' designs and parts. It also included a sophisticated transportation system to move the goods from the supplier to the buyers [which included] Pakistan, North Korea, Libya, and Iran.

Experts say that before Khan, proliferators bought bits and pieces of nuclear components from private middlemen, then had to assemble them to set up functional nuclear systems. Khan changed all that, experts say, by creating a centralized "one-stop shop" that offered technical advice, parts, and customer support. The network's efficiency led Mohamed ElBaradei, head of the IAEA, to call it the "Wal-Mart of private-sector proliferation."

Experts had suspected Khan for a long time, but couldn't confirm their suspicions until October 2003, when Italian authorities seized a German ship carrying 1,000 centrifuges headed for Libya. The parts were made in Malaysia and shipped through the Middle East, according to news reports. Libya was able to get nearly complete centrifuges through the network, as well as blueprints for a Pakistani-designed nuclear warhead.

A Proliferation Security Initiative, announced by President Bush on May 31, 2003… between 11 developed countries to stop and search vessels in their territories suspected of carrying banned weapons or technology in order to "stop the flow of such items at sea, in the air or on land." The initiative gives countries broad powers to board vessels and seize illicit cargo. It was under this initiative that authorities seized

\textbf{Evaluation.} These campaigns, both on the demand side and the suppression side, are almost entirely functions of state power. The throughput function for these sorts of networks is extremely ‘chunky’ – a very small number of high intensity events account for the known universe of nuclear proliferation cases. The Boxer model is not particularly helpful for these highly specific networks – Khan was the “father of the Pakistani nuclear program,”\footnote{Ibid.} and the pool of such individuals is finite.

Since a true nuclear program requires extensive capital investment and fixed facilities, there is little ability to achieve the sorts of fluidity characteristic of an adaptive model. These cases are best explained with the combination of the non-proliferation regime and the application of power in the form of intelligence. However, simple radiological weapons such as ‘dirty bombs’ do not require the fixed capital investments of a true nuclear program; these might be modeled as a very-low throughput arms market. Given the small amount of flow, intelligence power would still be the best lens for these problems.

\textbf{ANTI-ORGAN TRAFFICKING CAMPAIGN, 1970s-PRESENT.}

\textit{Narrative/Evaluation.} In \textit{The Red Market}, Scott Carney describes the state of the world organ trade. In short summary, there are two general expressions of this trade. First, a quasi-legal voluntary trade in non-lethally-extracted human body parts (for instance, kidneys) exchanges these organs for profit. This varies greatly by region, despite the World Health Organization denouncing the practice. Due to areas of widespread toleration, this expression takes on a ‘grey market’ form. Control and suppression of this quasi-legal can be explained with
regime theory.

The second trade is far darker, involving murder and the lethal extraction of body parts. In a horrific headline, the Daily Mail reported in March 2014 that:

Cartel member accused of kidnapping children to harvest their organs is captured in Mexico. Manuel Plancarte Gaspar, 34, is an alleged member of the Knights Templar cartel, who is suspected of kidnapping children for their organs. He is also the nephew of Enrique Plancarte Solis, a top Knights Templar leader. The cartel are taking more of an interest in organ harvesting as drug trafficking is no longer the top source of income. Children are taken from school and transported in refrigerated containers to have their organs removed and then sold.68

This trade, insofar as it is organized, would take on a deep ‘black market’ structure. As with other forms of murder, this has no social sanction and therefore can be attacked with force. Therefore, the force lens would provide an adequate answer, as the practice is ghastly enough to provide the suppressor all the support they should require. Accordingly, this becomes a targeting and intelligence problem.

THE US-LED WAR ON DRUGS IN THE AMERICAS, 1973-PRESENT.

See Chapter 12.

HUMAN SMUGGLING INTO UNITED STATES, C. 1994-PRESENT.

Narrative/Evaluation. In Border Games, Peter Andreas points out the paradox of increasing

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border control during a time of increasing trade liberalization. The North American Free Trade Agreement (NAFTA) created deeper links between the economies of the United States and Mexico. Simultaneously, increasingly militant attitudes toward human smuggling across border led to a greater focus on enforcement. Andreas argues these two forces met in a synthesis of high-profile but nominal enforcement. September 2001 led to further increases in the focus on border security, but even during this period, major swaths of the border remained porous. During this period, the border was functionally a ‘grey market,’ checked through maintenance efforts and and tacit bargains.

The current situation on the American southern border (as of August 2014) presents an interesting challenge to the Boxer model. While border enforcement had previously held a loose equilibrium, with strong efficiency on the part of the Customs and Border Patrol checking strong demand for economically motivated cross-border smuggling. A complex cocktail of hotly-disputed factors led to a surge in smuggling demand and a massive spike in cross-border smuggling. This swamped the capacity of the existing ‘grey market’ suppression regime, which could no longer maintain the previous equilibrium. The prospect of an uncontrolled border catalyzed countervailing demand, but the form that demand will take is unclear due to a political dispute about the nature of the crisis. Further, a deadlock between the executive and the legislative branches stymies demand pressure for a solution.

According to the model, there are two possible ways this tension resolves itself. First, the conventional Boxer solution: the strategic imperative of the low support/low efficiency quadrant

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of the Boxer model is to ‘reboot,’ enlisting intact and currently unengaged institutions in order to stabilize the situation. This seems to be taking place through ‘self-help’ processes on the part of the border state governors, who are deploying their own forces to meet their citizens’ demand for border control. In the longer term, these forces might resolve the executive-legislative blockage through political pressure or the electoral system.

However, a second potential exists: if these efforts do not check the new volume, the border flow may exceed an inflection point. In this case, the expectations surrounding border security would experience stepwise change, normalizing some aspects of the new status quo. The same meta-stability that promises to lock in suppression success also stands to lock in defeat if the illicit market remains unchecked for long enough. That said, these realignments are rare – the long-standing social equilibria of a strong state generally resist both clear successes and clear failures in suppression campaigns.

**Falcone Campaign vs. Cosa Nostra, 1980-1995.**

*Narrative/Evaluation.* Judge Giovanni Falcone led a massive campaign against the Sicilian Mafia, and paid a price in blood for it. Falcone disrupted the Cosa Nostra as much in his death as he did in life, as the public outrage resulting from his assassination triggered major crackdowns on the group. From that point forward, the Cosa Nostra were no longer seen as invincible, and the Italian government has been much better able to keep them in check.

This campaign has been extensively documented, and serves as a strong example of a campaign against standing organized crime networks. These groups tend to be multi-mode, trafficking in different types of illegal goods. Moreover, they provide contract services and

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protection for other criminal organizations.\textsuperscript{73}

According to Falcone’s Time Magazine obituary:

The parallel destiny of Palermo prosecutors Giovanni Falcone and Paolo Borsellino began and ended in Sicily’s capital, where the two were born — and killed in 1992 in successive Mafia bomb assassinations. In between, the pair nearly brought Cosa Nostra to its knees with a new methodical approach, as brilliant as it was brave, to unlocking the Mob’s code of silence.

And so that smile shared one day on the job — captured by a photographer just months before they were killed — now hangs in nearly every Italian judicial office (and in schools and city halls across Sicily) alongside the usual portrait of the standing head of state. That apparently serene moment was taken in a brief pause amid the passion and inbuilt risk of their life’s work.

Inspired by an idea of Falcone's from the early 1980s, the pair forged a strategy of rounding up scores of Mafia associates, including the small fry, as a way to chip away at the organization's foundations, while coaxing key suspects to turn state's evidence. Their efforts culminated in a series of "maxi-trials" in a bunker-like courtroom in Palermo, which led to hundreds of convictions.\textsuperscript{74}

These lethal measure-countermeasure contests fit well within the Boxer model, though Falcone’s


campaign might also be seen through the power lens. This application of the Boxer model approximates theories about insurgencies.

**LAUNDERING: FINANCIAL ACTION TASK FORCE, 1989-PRESENT.**

*See Chapter 12.*

**BLOOD DIAMONDS & ILLICIT CONFLICT MINERALS, 1990s-PRESENT.**

_Narrative._ Global Witness, an NGO that focuses on preventing the use of natural resources to fund human rights abuses worldwide, successfully led a coalition that advocated for action against ‘blood diamonds’ in the mid-1990s. Violent substate actors in West Africa and Angola used coerced labor to mine alluvial diamond deposits, using the profits to fund their campaigns. Zimbabwean elites under Mugabe similarly used coerced diamond extraction to fund systematic violence.

A series of United Nations Resolutions and a growing consensus amongst diamond-producing nations resulted in the 2003 Kimberley Process certification scheme. This process required proof-of-origin certification along with assurances that the resources were not used for funding rebel groups or other violent non-state actors. Despite initial optimism, the Kimberly Process has proven bribable and game-able, and has failed to repair major structural flaws. Charter member Global Witness left the process in 2011, and the current efficacy of the scheme is debatable.

Global Witness similarly engaged on ‘conflict minerals,’ used to fund human rights abuses from violent militias and insurgent groups, in 2006. These minerals from parts of the

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Democratic Republic of Congo and a few other central African states, are sources of tin, tungsten, and tantalum and gold, are essential in the production of electronics. An alliance between corporate, civil society, and government actors yielded a promising suppression regime. Section 1502 of the 2010 Dodd-Frank Act placed reporting and due diligence requirements on any corporation that used these minerals. This led to internal audits and improved understanding about resource origins, which would in turn led to demand for conflict-free smelters to mitigate financial and reputational risk. An attempt to do the same with conflict timber was less successful.

Al-Qaeda also used minerals and natural resources to finance its operations, including diamonds and honey. However, terror threat financing generally falls under the rubric of financial intelligence rather than the human rights-oriented conception of conflict minerals. Accordingly, I treat natural resource-based terror threat finance as a subsidiary black market under the larger rubric of laundering.

**Evaluation.** Both the Kimberley Process and the conflict minerals regime are compliance-based approaches for disrupting a grey market. The former suffered from collective action problems, and due to widespread cheating proved less effective than hoped. The latter involved a finite number of major electronics firms, all deeply embedded in American tax reporting systems, and may therefore work through these collective action problems. Moreover, since tin, tungsten, and tantalum require fixed smelters, the conflict mineral supply chain has a natural chokepoint for auditing. The one exception to this pattern was gold, which is easily extracted,

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80 Rodgers 2014.
requires little processing, and proves profitable in small quantities.\(^{81}\)

These campaigns fit well within regime theory, especially given the strong focus on compliance in the regime literature. Given the fixed natural chokepoints in these supply chains, state and corporate compliance drastically reduces the problem. These single-point-failure illicit networks generally fit well within a simple regimes construct.

One uniqueness of this case is the nature of the offense relative to the product in question.\(^{82}\) The objection to conflict resources has to do with the violence driving and profiting from extraction, rather than to the nature of good (as with narcotics) or the method of arrival (smuggling to avoid duties.) Though conflict minerals come from specific regions, the majority of the supply chain tends to reside in licit markets. Further research is required to assess if illicit activities ‘upstream’ in the supply chains are uniquely vulnerable to regulatory pressure.

**LORD OF WAR: VICTOR BOUT AND SMALL ARMS TRAFFICKING, 1990-2008.**

**Narrative.** Victor Bout’s arms trafficking network, subject of Braun and Farah’s *Merchant of Death*, represents the worst of recent small arms trafficking.\(^{83}\) Bout took advantage of the loose arms controls in former Soviet states during the early 1990s to build an arms smuggling empire. A December 2000 United Nations report on ‘sanction-busting’ into Angola describes the geometric growth of Bout’s networks:

Landing heavy cargo planes with illicit cargoes in war conditions and breaking international embargoes such as the one on Angola requires more than individual effort. It takes an internationally organized network of individuals, well funded, well
connected and well versed in brokering and logistics, with the ability to move illicit cargo around the world without raising the suspicions of the law or with the ability to deal with obstacles. One organization, headed, or at least to all appearances outwardly controlled by an Eastern European, Victor Bout, is such an organization.\textsuperscript{84}

Bout sold everything from small arms to heavy weapons, including 2S1 \textit{Gvozdika} self-propelled 122mm artillery vehicles, ZU-23 anti-aircraft auto-cannons, and \textit{Strela-2} shoulder-fired missiles.\textsuperscript{85}

According to the \textit{Economist}, Bout eluded prosecution for two decades of operations through a labyrinth of paperwork, registrations and covers.\textsuperscript{86} Bout was known to the UN and national authorities, but was able to avoid charges being filed against him through his continuous movement and these byzantine legal schemes. All of this was in spite of efforts from the Clinton administration to bring him to heel.\textsuperscript{87}

The post-September 11\textsuperscript{th} world had even less patience for a marauding arms dealer, especially one that was suspected of arming terrorists. An INTERPOL Red Notice led to Bout’s arrest in Thailand in 2008.\textsuperscript{88} He was sentenced by a Manhattan federal jury to 25 years in prison for selling arms to the FARC, a designated terrorist group.\textsuperscript{89}

\textit{Evaluation.} Bout’s network was personality-driven, developed opportunistically from post-

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\textsuperscript{85} Ibid.
\textsuperscript{87} Braun and Farah, \textit{Merchant of Death}.
Soviet arms and maintained by Bout’s ability to throw gravel in international legal machinery. While he was a hard legal target, his network still had a single point of failure. An increasing focus on international arms transfers catalyzed political will against his activities, which led to his arrest and the collapse of his network. Therefore, the power hypothesis explains this result.

The Boxer model gives some added fidelity. Since his companies were publically registered, but his activities were generally clandestine, Bout’s organization was somewhere between a grey and a black market. His Capone-like ability to ‘play both decks,’ navigating tacit spaces while defending himself in formal space, allowed him to flout international law for a decade and a half. To this point, the Washington Post describes the frustration of an arms control professional “Kathi Austin, executive director of the Conflict Awareness Project… expressed frustration that it ‘had taken a sting operation to bring him to justice’ when the international community has ‘had the evidence against him for 15 years.’”90


See Chapter 12.

CONTEMPORARY SLAVERY & HUMAN TRAFFICKING, 1990-PRESENT.

See Chapter 12.

CONCLUSION: HORSES FOR COURSES.

Boxer Model – What is it Good For? In our survey of the breadth of transnational illicit market suppression, we have found a number of key cases where the Boxer model is especially helpful. Protracted campaigns with many degrees of freedom tend to swamp the capacity for complexity of simple power, regime or norm models. The Boxer model was built for these

90 Ibid.
‘prize fights.’

Amongst these is the grand suppression of the slave trade, though the North African subsidiary campaign can be explained through simpler models. The Boxer model gives the best account of the long adaptive struggle of American prohibition, as well as the extended Finnish prohibition campaign. It is the most promising lens for both modern anti-narcotic and anti-human trafficking campaigns. With the extensions from the last chapter, the Boxer model also gives a strong account of campaigns against counterfeiting, money laundering, and piracy.

In the two main historical cases, the Boxer model skirts around the edges of counterinsurgency theory. The interplay of competitive population support and network attack echoes lessons from the last decade of conflict. In the introduction, we discussed how the insights behind the Boxer model came from the world of counter-terrorism and counter-insurgency. Falcone’s campaign against the Sicilian Mafia fits well with the Boxer model, and that fight straddled the border between crime-fighting and counter-insurgency. Therefore, through future research, the insights of the Boxer model may prove enlightening for aspects of the worlds from whence it came.

**When Simpler is Better.** These extended cases can also be understood using regime and power explanations, respectively. Following Occam’s Razor, if a simpler model can account for the variation, then it should be preferred over a more complex model. The Boxer model gives insight into the adaptive processes of most cases in this universe, but in many cases the relevant variation can be explained using the regime, norm or power hypotheses.

The power hypothesis works very well for cases where an illicit network has an overt state backer, such as North African piracy. It also works well against networks with a discrete cadre without whom the network cannot function – Viktor Bout or the leadership of the Sicilian Mafia,
for instance. Finally, it works well against violent dark networks that lack any sort of social sanction or cover, such as lethal child organ trafficking rings. The Boxer model could conceive of these campaigns as black market suppression efforts, but since there is no meaningful grey market, it makes more sense to select a lens that focuses on that later stage.

The regime hypothesis is uniquely useful for illicit markets with fixed vulnerabilities, especially if those vulnerable points can be shut down through compliance. For instance, conflict minerals and wildlife crime involve supply chains or socially embedded practices that deeply intermingle with the licit economy. If licit holdings can be held at risk due to illicit participation, these illicit markets can be radically reduced. The Boxer model envisions this as the grey market suppression phase, but if there is no black market phase, then the regime lens provides the most purchase on the problems at hand.

Finally, the norms hypothesis can work directly through moral suasion or indirectly through transnational activist networks. Moral suasion, an attempt to convert participants in the illicit market to another course of action through normative arguments, yields disappointing results as an independent mechanism for suppression. It does work well in the early stages of grey market suppression to peel off marginal members of the illicit market, especially ones who are deeply socially connected to groups that hold these norms. However, it does not deal with the moral ‘race to the bottom’ characteristic of deep underground markets.

Transnational activist networks work well to energize regimes, as demonstrated by wildlife crime. In the case of whaling, some compliance likely resulted from normative shifts in previously offending states. In most other circumstances, these activist networks serve as the ‘second deck’ of tacit knowledge, providing initiative and support to formal regimes. Similarly, norms can catalyze force-based mechanisms – for instance, when Sir Sidney Smith advocated for
military intervention in Algiers in the name of fighting ‘white slavery.’ Norms work as a background process in the whole of the Boxer model, but I envision normative mechanisms largely as catalytic background processes for the power and regime hypotheses as well.

In sum, the simpler models should be preferred over the Boxer model for discrete short campaigns and for campaigns with limited degrees of freedom. Three types of cases in particular favor simpler models. First, the ‘Glass Jaw’ contests against an illicit network with an inherent known structural vulnerability lack the space to adapt and evolve. Therefore, since these campaigns can end in one round, it is best to use a simpler model to get that round right. Second, ‘One-Off’ campaigns against specific networks or individuals do not require the Boxer model’s theory of market mechanisms. Finally, ‘State Power’ contests approximate interstate warfare closer than they do counter-market campaigns. These should be considered as such.

**What the Boxer Model Can’t Do.** For one, the Boxer model does not have any analytical leverage on very low throughput or extremely ‘chunky’ campaigns, such as the A.Q. Khan nuclear smuggling network. Since work in the Boxer model is done through iterated adaptation, ‘one-shot’ conspiracies offer no space for learning and growth. The Boxer model therefore has little utility for these cases, and static network analytic lenses should be preferred.

We have not spoken much of the null hypothesis. Most of these cases lack a true null, as the existence of a countervailing campaign assumes the existence of some initial impulse. Critical approaches serve as a helpful reminder of the possibility of ‘moral panics’ and other rashness with the potential to generate outsized responses to minor problems. They also highlight the costs of such campaigns, and how they may become self-perpetuating over time.

But in order for the null hypothesis to fully obtain, a campaign should come about in response to erroneous perceptions and sustain itself through maintaining those perceptions, while
demand moves on its own accord. In a very few of these cases, a campaign may have come about based on misperceptions or self-reinforcing fears rather than an actual illicit market. This set might include the scares about ‘white slavery’ networks or the contemporary idea of wildlife crime kingpins, but these are debatable as well. Some partial version of the null obtains in all of the cases, however, as deep social forces seek equilibrium independent of the suppression regime.

Far more often, the critical perspective raises questions of costs and benefits, rather than describing progress or the lack thereof in the campaign itself. Accordingly, most of these perspectives are orthogonal to the Boxer model’s core concerns. The model cannot weigh the value or cost of a suppression campaign; it only evaluates the sorts of structures and behaviors that lead toward victory.

This brings us to the most important thing that the Boxer model can’t do: predict success or failure. The Boxer model predicts progress within a case, given certain initial conditions, but it does not theorize as to whether interventions will be successful or unsuccessful overall. I see that determination as a fundamentally normative question, as it rests on whether expenditures were ‘worth’ whatever level of progress was achieved. However, I do believe that these cases show varying degrees of progress or frustration. And in this is the value of the model.

As we said at the outset, the Boxer model is made for the ‘Admiralty,’ not the ‘Prime Minister.’ The model assumes that one is in the middle of a suppression attempt, and evaluates what things are most likely to bring that attempt to a successful conclusion. It makes few claims as to the chances of success itself, and no claims whatsoever as to the value of success.

If the core premises of the Boxer model holds – coordinated and communicated individual initiative and continuing public support are the most important factors in complex adaptive
contests – then the idea of structurally deterministic outcomes is meaningless. Given a choice
between improving unknown odds and actually knowing the odds, a combatant already
committed to a fight should choose the former. Since the enemy gets a vote, fighting might be
the only way to actually discover the actual odds of winning.91 These are inherently messy
enterprises.

91 Referencing the idea of revealed private information and converging in the bargaining model of war. James D.
CHAPTER 14, CONCLUSION & POLICY APPLICATION:
A MOVEMENT TO DEFEAT A MARKET.
BOXER-BASED TOOLS AND STRATEGIES FOR TURNING TECHNOLOGY AGAINST HUMAN TRAFFICKING.

TECH AGAINST TRAFFICKING: THE FIGHT FOR THE FAST ROAD.

In this final section, we evaluated the historical footing of the Boxer model, applied and extended it to challenging contemporary cases, and scoped it to particularly complex and adaptive illicit networks. In this chapter, we will conclude the work by build a Boxer-inspired policy framework for fighting human trafficking. The initial impulse behind the model was to help policymakers address challenges such as these, so this is a fitting way to conclude.

The technology turn in the anti-trafficking movement presents an excellent study for the Boxer model. As we discussed in Chapter 12, cyberspace is increasingly valuable ground for human trafficking networks. As improving enforcement efforts make real-world focal points more dangerous, virtual coordination hubs will become relatively more important. For this reason alone, anti-traffickers should seriously consider comprehensive cyberspace strategies.

*The Fast Roads.* If the analogy between contemporary cyberspace and the Atlantic of the slave trade era holds, there are more reasons that modern abolitionists should take notice of the online world. Mastery of the seas was crucially important for the suppression of the Atlantic slave trade because the sea was the ‘fast road.’ That is to say, once a slaver made open water, they could go to a wide range of places and quickly. Since the British had the infrastructure and the expertise to contest these ‘fast roads,’ they could both complicate the slavers’ tasks and simplify their own. Just as the water connected the slavers to their markets in the Americas, it connected captives aboard captured slavers to safety in Sierra Leone. The same waves that served slavers also served the Royal Navy, allowing the Africa Squadron to mass or disperse at will. Mastery of the commons provides a measure of control over these ‘fast roads.’
In the same way, the aspects that make cyberspace increasingly attractive to modern slavers should make the space attractive to modern abolitionists as well. Slavers can use chatrooms and web boards to connect sellers to buyers, but abolitionists can use the same technologies to connect activists to allies. The free encryption software that insulates online exploiters can also guard secure collaboration amongst anti-trafficking players.

These ethereal ‘fast roads’ have utility even against slavers who have no presence in cyberspace. For instance, consider an internal trafficking ring between two Indian states conducted solely through offline social trust networks. Law enforcement and NGOs in the ring’s area of operation could still piece together the situation quickly using online collaborative tools. Groups that can coordinate in both real-space and cyberspace can envelop those that only operate in one or the other.

*Technology’s Share of the Task.* As previously discussed, the majority of people in modern slavery are held in debt bondage, which typically relies far more on local privilege than on communications technology. Technology can play a supporting role against these practices by allowing activists and enforcers to collaborate and share best practices. Additionally, crisis mapping might find ways to identify signatures of slave labor in brick kilns. Harvard Humanitarian Initiative’s Satellite Sentinel Project attempts to do this by through remote sensing satellites.¹ Crowd-sourced analytics might scrub a high-risk area for slavery signatures. These efforts do not themselves address the problem, but they accelerate and amplify solutions on the ground.

Technology plays a more direct role in some forms of forced labor and illegal sexual

¹ “Satellite Sentinel Program: Making the World a Witness.” *Harvard Humanitarian Initiative*, June 2012. [http://hhi.harvard.edu/sites/default/files/In%20Line%20Images/programs%20-%20crisis%20mapping%20-%20satellite%20project.pdf](http://hhi.harvard.edu/sites/default/files/In%20Line%20Images/programs%20-%20crisis%20mapping%20-%20satellite%20project.pdf) This may be a case where efficiency can drive support, as crowd-sourcing these sorts of analytics might bring attention to atrocities.
exploitation, and the technology turn in anti-trafficking begins to challenge these models on their home ground. In early exchanges circa 2010, a small number of traffickers employed harassment cyber-attacks against a few anti-trafficking NGOs.2 A network of IT professionals volunteering cyber security expertise could turn the tables on these tactics. On a much larger level, high-end cybercrime and law enforcement analytic technology stand to revolutionize the struggle against these forms of trafficking.3

While technology is not in and of itself an adequate solution to the whole of trafficking, these ‘fast roads’ are already an important field of contestation between modern slavers and abolitionists. This campaign for cyberspace fits well within the wheelhouse of the Boxer model – complete with innumerable degrees of freedom, fast-paced adaptation and diffusion, and a high probability of becoming protracted. In order to apply the Boxer model, we will cash out the model’s policy principles as operational concepts, which we will then apply to the present social geography of the anti-trafficking movement.

**POLICY PRINCIPLES AND OPERATIONAL CONCEPTS.**

While framing the Boxer model in the first section of this work, we identified two policy implications of the efficiency and support core variables. We will return to these concepts, using them as platforms from which to build operational concepts. We will then apply these concepts toward an online ‘fast roads’ strategy against human trafficking.

In order to achieve a relative efficiency advantage, the anti-trafficking regime needs to build a ‘synthetic market.’ This is a place for shared tacit knowledge and low-friction information

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exchange along the lines of the successful ‘market-like’ networks in the historical cases. This concept is actualized in a ‘data ecosystem,’ a place of common information flow amongst all the networks in the anti-trafficking movement.

To ensure that support remains strong, abolitionist norms should be deeply embedded in habitual, reciprocal social relations. This requires large numbers of people engaging each other as complementary partners in common cause, or more simply, a movement. Three tiers of the movement – full-time anti-traffickers, skilled professional allies, and broad-based activists – should be connected by robust conversation and data exchange. This lowers barriers to entry into the movement and makes large-scale reciprocal action possible, thereby allowing abolitionist norms to self-reinforce.

**Efficiency.** The instinct behind the efficiency variable considers how easily good ideas can be put into practice. ‘Information friction’ is a measure of the roadblocks between innovators and implementers. As described in Chapter 3:

> *Information friction* describes regime efficiency in practice. This is a function of 1) data connectivity, 2) information synthesis and 3) adoption incentives. Market-like structures provide an institutional strategy to reduce information friction; networked communications provide a complementary technological strategy to reduce information friction.

In a highly ‘market-like’ structure, implementers and innovators conduct a continuing, robust conversation; they may often be one and the same. In a highly compartmentalized bureaucracy, thinkers and doers are typically connected only through a series of high-friction formal pathways.
These sets of gates are not without purpose – they work well to regress inputs toward an organizational mean. This reduces radical errors but also numbs radical innovation. When a problem can be adequately reduced and solved, this is a good approach – determine the objective function and approximate it as well as possible. However, when a problem refuses to be reduced and modeled, this friction serves as an impediment. The key for these sorts of problems is to attract and retain people innovative and mature enough to handle increased freedom, and decrease information friction between them.

In practice, information friction results in ‘trapped’ ideas, where the cost of routing and processing exceeds the value of the idea. As the pop culture phrase goes, ‘the juice isn’t worth the squeeze.’ A good idea, a piece of intelligence, or a potential relationship is worth some value if it finds its way to a place where it is needed. However, the idea incurs some friction in the course of transit. Emails that go unread or unanswered, circular phone tag, overmany veto players, and basic misunderstanding can increase the cost for that potentially valuable resource to make the journey to a place of use. If the cost of that ‘information friction’ exceeds the potential value of the information, then the information is unusable.

One way to make the ‘juice worth the squeeze’ is to get a better juicer. In the evolutionary learning organizations of our historical cases, we found that ‘market-like structures’ increasingly reduce information friction as time went on. I extend this idea with the ‘synthetic market,’ a social space that addresses the connectivity, ontology, and incentive aspects of information friction.

**Synthetic Markets.** Natural market structures allow illicit networks to effectively coordinate.

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4 This concept is derived from the Second Law of Thermodynamics, especially the idea of trapped energy that is unable to do work.
They serve as a massive implicit data aggregator, connecting potential buyers to potential sellers in a language both can understand.\textsuperscript{5} These structures create convergent incentives – since results trump perception, there is an incentive to innovate and replicate whatever works. The market acts as a natural computer, allowing information to converge around a common truth source.

The market serves three primary informational functions. First, it creates connectivity – players in a market are implicitly connected to each other. As long as they have access to the same price information, any two players have functional access to each other. Explicit communicative ties require far more social and organizational bandwidth, but through the implicit connections in a market, all players converge on a consensus on price information. This convergence, in turn, builds shared situational awareness. Market structures connect a huge number of people and factors together in an elegant way.

The language of price provides the second informational function, a functional shared ontology. In computer science terms, and ontology is a ‘name map’ of the world – the names contained in a system for things in the world, how those categories of names are built, and how they relate to each other.\textsuperscript{6} Since different organizations will parse the world differently, functional integration typically involves an ‘ontology problem.’ If organization A describes a Toyota Hilux as a ‘vehicle,’ and organization B describes the same Hilux as a ‘truck,’ the two organizations will need a shared ontology or a translator to realize they are talking about the same thing. While humans do this implicitly through conversation, the formal logic in computers or bureaucracies cannot intuit its way out of these problems in the same way.

Price is an elegant ontology, which converts the multitude of individual firms’ inputs and outputs into a simple number suitable for decision-making. The illicit market can register shared meanings by using these price signals – if something is working, they will make money, and if not, they will lose money. The measures of effectiveness within a bureaucracy are rarely this elegant, and are eminently game-able.

Thirdly, markets create incentives to replicate successful behaviors. Since all players are communicating, and since all of them roughly agree on what the simplest form of success looks like, effective practices should diffuse quickly throughout these networks. Since this is not a zero-sum game, firms profit more from value creation than from infighting. Meanwhile, competitive pressures in the system free resources from unsuccessful models through ‘creative destruction.’

Unfortunately, the logics behind bureaucratic politics and NGO fundraising run counter to all three of these elements. Zero-sum competitive pressures for grants and donors inhibit the ability to communicate or coordinate in the field. Since these organizations do well to present

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the problem to their funders in terms that paint their model (and their results) in a favorable light, these organizations typically have divergent ontologies. The grant structure may result in a ‘winner-takes-all’ game, where the first successful player locks out a pool of resources for all others – in this structure, infighting pays off and there is less incentive to replicate success. This leads to divergent information flows, and yields an ‘anti-market’ (Fig. 1, Center.)

The illicit network, at least in its tacit phase, has the advantage of natural market structures. In order to blunt this advantage, the suppressor needs to accomplish explicitly what the natural market does implicitly. The market-seeking script shapes connectivity, ontology and incentives with organizational structure, culture and technology.

The missed information exchange between the CIA and the FBI described in The Looming Tower that preceded the September 11th attacks is an example of such an information friction-induced breakdown. Lack of effective connectivity due to different legal mandates provided the foundation of information friction. Different perspectives resulted in incompatible ontologies; organizational mistrust disincentivized collaboration. Information was slow to route from one organization to the other, hard to translate when it arrived, and devalued due to competition-driven mistrust.

Many of the innovations we find in our cases are organizational ‘friction reducers.’ Improving communications technologies can solve the connectivity problem. Redesigning organizational culture can create the conversations that ultimately synchronize ontologies. Changing payoff structures can change incentives from destructive to constructive competition. A ‘synthetic market’ is a combination of these three features.

**Data Ecosystems.** The ‘data ecosystem’ implements this ‘synthetic market’ concept. I

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define a data ecosystem as a place through which information can flow from one network to another efficiently, and where all resources can be accessed given proper permissions. It is a network-of-networks, rather than ‘one network to rule them all,’ in that organizations all still own their own data and share only what they wish. The ecosystem, however, allows them to share very efficiently when they wish to do so.

The essence of the ecosystem is the interface between the data on various cooperating networks through common practices built around a shared social focal point. While the multitude of public and private organizations that comprise the anti-trafficking movement would maintain their own websites, databases, and the like, this posited ecosystem would provide ligaments and linkages between these sundry networks. In order to do so, the ecosystem must solve the three information friction problems with connectivity, ontology, and incentives.

Connectivity is far easier to theorize than to actually achieve, but much of the anti-trafficking movement already has a strong online presence, and the natural contours of the Internet lend themselves to these efforts. Ontology is a bit more of a challenge, as organizations often structure data in accordance with their own internal processes and sub-divisions rather than according to the form of the subject itself. This can be overcome by novel approaches to data sharing, or by simply using minimal definitions to establish conversational links between two humans who can sort things out together.

Incentives present the most challenging problem, as the very nature of the grant system tends to discourage cooperation. Government and perceptive donors can play a role as convener in this

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regard by highlighting, encouraging, and rewarding instances of cooperation between members of this ecosystem. Ideally, upon solving the collective action problems inherent in gathering and assembling the pieces of the movement, trust-based iterative interactions would be their own incentive. An organization that could identify potential partners and share information of mutual utility would build up social capital in time, which it could apply to its priorities across the shared space.

In sum, in thinking about the problem of modern slavery, I interpret the efficiency variable of the Boxer model in terms of ‘information friction.’ Cashing that idea out through the ‘synthetic market,’ I look to information technology to create a ‘data ecosystem’ for the movement. This ecosystem grants the movement many of the advantages of the market enjoyed by the traffickers, moving information quickly through shared ontologies with convergent incentives. Therefore, the ‘data ecosystem’ comprises one element of the proposed Boxer strategy. We now turn to the support variable.

**Support.** The sense behind the support variable looks for the stubbornness of suppression in the social embeddedness of norms. Beliefs that are deeply entrenched and habitually acted upon are likely to prove durable. The fundamental unit of this embeddedness is a reciprocal relationship between two individuals sympathetic to the cause. This, too, can suffer from friction and entropy:

‘Normative friction’ describes regime support in practice. This is a function of 1) social connectivity, 2) compatible frames and 3) norm coherence. Since norms are reinforced through repeated social action, spaces of habitual meaningful interaction

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produce deeply embedded norms. These self-catalyzing spaces of normative flow provide for low normative friction.

The British abolitionist movement that sustained the campaign against the Atlantic slave was tied together by friendship, action, and kinship. The repeated social interactions in a social movement form the basis for suppression campaigns – ideal movements exhibit ‘market-like’ structures. However, these frictional problems can frustrate or deaden these self-reinforcing social loops.

As before, there is logic in certain types of friction. Movements that try to do too much may end up doing nothing. Movements with too many ‘weak ties’ and too few ‘strong ties’ may burn out quickly. Movements that fail to maintain focus might be co-opted by an outside actor. Still, in general, reducing this normative friction builds a movement, and the movement provides the momentum for the campaign. Reducing this friction allows the reciprocal interactions that deeply embed the values supporting suppression. In order strengthen support, ensure clarity and conviction around core tenets, and increase the social embeddedness of these tenets within networks of supporters.

The issue of trafficking increasingly mobilizes large numbers of would-be activists, but the movement at present suffers from a scarcity of ways in which to integrate these individuals into meaningful anti-trafficking tasks. While this is a good problem to have, at least for a time, people who are not integrated effectively through meaningful action tend to become disaffected or drift away to other causes. This disconnect stands to undermine support in the long run.

Reductionist approaches to NGO fundraising exacerbate this problem – pro bono offers from skilled individuals require upfront training costs and recurring relational maintenance costs, while simple funds transfers do not. However, funds transfers tend to be more sterile and less
likely to produce the iterative reciprocal social relations crucial to a deep movement. NGOs rightly seek financial resources for continued operation, but *pro bono* offers generally are not in lieu of funding; a more engaged individual may actually be willing to contribute more to the cause. The scrap metal drives during the Second World War stand as evidence of this, meaningfully engaging a populace in social action and thereby further embedding the value of victory.\(^{16}\) These parallel the broad engagement achieved by the British abolitionist movement.

These sorts of crowd-sourcing offer two advantages beyond the resources themselves. For one, they deepen a movement. They also might uncover uniquely useful unconsidered resources, such as Josiah Wedgwood’s innovative ‘Am I Not a Man and a Brother’ viral messaging for the British abolitionists.\(^{17}\) This unplanned emergence is the stuff of movements, and movements demonstrate the same sorts of unplanned vibrancy and vitality as markets. Accordingly, I hold that at least in this case, it will take a movement to beat a market.

**The Three-Tiered Movement.** Different aspects of that movement should be in different sorts of conversations with each other. Respecting the value of crowd-sourcing, but also respecting the sorts of costs this imposes on extant organizations, we might sub-divide the movement into concentric circles of epistemic communities. Full-time practitioners, specialized skilled allies, and broad social supporters all have different sets of skills, constraints and needs. If each tier can build broad shared understanding, and remain in conversation with the other tiers, the movement can best match resources to needs for meaningful action.

**Professional Tier.** The Boxer model primarily focuses on learning organizations of state

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officials employed in suppression campaigns, though by way of grants, NGOs increasingly fill roles that were occupied by government agents during our two historical cases. These full-time operators comprise the first tier of the movement. They operate in shared spaces of specialized knowledge, with high security requirements due to the vulnerabilities of victims. The conversation in this tier would focus on tactics and best practices, would require high-fidelity data, and would have the most restrictive access requirements.

Specialist Tier. In the Rum War case, the Coast Guard made excellent use of highly skilled specialists from the interagency process and the general populace. These individuals solved unique problems or introduced novel tactics, oftentimes beyond what the institution even knew to ask for. In the case of modern slavery, these allied specialists include academics, information technology professionals, counselors, and law enforcement and intelligence professionals not directly engaged in anti-trafficking. Since these individuals operate in the movement in a focused pro bono model, online collaboration spaces allow them to relax constraints of time and space. These systems also capture and encapsulate their unique skills in a searchable manner. Their conversation would be more general, and therefore require less security.

Supporter Tier. Finally, the suppression of the Atlantic slave trade saw a major role for mass mobilization in shaping economic incentives and political trends. This role is reprised today in campus and civil society mobilization, which similarly generates resources for the movement and engages the various national expressions of power toward movement goals. This broadest tier has no real security requirements, and speaks primarily in generalities. Additionally, this tier provides a broad recruiting base for the specialist and professional tiers.

19 Adam Hochschild, Bury the Chains: Prophets and Rebels in the Fight to Free an Empire’s Slaves, First (Houghton Mifflin Harcourt, 2005).
All three tiers should be able to speak to each other, especially when they encounter information more appropriate in another tier. For instance, a supporter might happen across an important intelligence tip in the course of their daily life. A professional might realize that traffickers are using a technology well known by members of the specialist tier, and so on. Therefore, the three tiers should be in conversation with each other. These groups would therefore balance breadth, security and administrative burden while engaging a large number of people in meaningful social action.

The support-derived ‘three-tiered movement’ is the second element of the proposed Boxer strategy. Synthesizing this element with the efficiency-derived ‘data ecosystem,’ I propose that a ‘three-tiered data ecosystem’ would prove transformational in the fight against human trafficking. Toward that end, I offer a notional cyberspace framework that builds on these principles, built upon the topography of the current anti-trafficking movement.

**Boxer Application: Notional Three-Tiered Data Ecosystem.**

The following are excerpts for a proposed structure for fighting modern slavery, adapted from a previous work by the author, intended to provide a sense of a Boxer strategy campaign against an illicit market on a commons.

Cyberspace is a key part of the business cycle of modern-day slavery. Traffickers use digital data directly, using major web arteries to find buyers and identify victims. Indirect use of cyberspace is ubiquitous; like any small business, online banking and digital communications serve as key enablers for illicit markets. Simultaneously, cyberspace is key terrain for trafficking’s enemies – law enforcement and NGOs increasingly use the web to share data and collaborate. Traffickers have already targeted anti-trafficking websites, a trend likely to increase as more anti-trafficking work moves online. In order to counter this ‘wicked problem,’ state and
interstate leadership needs to make cyberspace more secure for the anti-trafficking movement and far less secure for traffickers.

As to the former, the anti-human-trafficking (AHT) movement faces an endemic challenge in the inability to collaborate. The AHT movement has been plagued by data problems and unsynchronized (and even counter-productive) efforts. Cyberspace offers a solution – an online collaboration environment would provide the movement an intranet, a fusion node, and a focal point, thereby solving the coordination problem. Such an environment would be a target for hacking, and security is paramount. This is not to discount the role of real-space social ties; to the contrary, this collaboration space is intended to catalyze and stabilize real-world partnership.

Concerning the latter, traffickers find online collaboration far too easy – they openly use open websites and chatrooms to share information and conduct business. By targeting and prosecuting the cyberspace elements of the trafficking business model, the law enforcement elements of the AHT movement make life far more difficult for traffickers. This induces friction, reduces profits, and ultimately protects victims by disrupting trafficking networks.

In short, the traffickers have a market, which serves as a massive data aggregator transmitting both prices and best practices to each other. The AHT movement has an anti-market, as structural incentives inherent in the struggle for grants and donors causes groups to view each other as competitors and hence hoard resources. So long as we are an anti-market fighting a market, it is unrealistic to expect significant impacts. However, information technology (IT) and a shared data backbone can serve as a ‘synthetic market’ for the movement, allowing coordination amongst major players, and many more people to take part in the movement in meaningful ways.
**Key Elements.** Rather than building one single network, the movement has many players with diverse needs and skills; moreover, the expression of slavery varies from area to area. We need to build a network structure fluid enough to let organizations innovate from the bottom up, in response to local conditions. This structure includes three elements: local ‘barricade networks’ connected by a dynamic ontology and nexus peering. This combination yields a data ecosystem for the movement.

**Barricade Networks.** During the later French Revolutions, people would throw whatever was on hand together into *ad hoc* fortifications.\(^{20}\) A defensive structure made from whatever is on hand that allows normal people to protect whatever is behind it, seems in keeping with the best traditions of the movement. Rather than mandating a structure or a model, we use whatever is there. An information backbone would solve organizational problems by building a cyberspace layer atop the ‘real space’ relationships that already exist. Additionally, this should make IT tasks easier for poorly resourced organizations.

These barricades are synchronized across the larger data ecosystem. This model makes it very easy to stand up new networks domestically and internationally. In practice, this looks like a local server under the supervision of coordinating bodies such as the Bay Area Anti-Trafficking Coalition (BAATC) in California\(^{21}\) or Chab Dai in Cambodia.\(^{22}\) These barricade networks are the body of the secure online space.

**Data Ecosystem.** Rather than one single network, which is at best inflexible, I propose a ‘data ecosystem,’ or a compact between all major networks in the movement to structure data such that

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any data point can migrate from any system to any other system in the ecosystem. This allows organizations to share data points with one-click, which is key for time-critical situations and data aggregation. This is brought about through IT partnerships amongst the major players in the movement, as well as by the grantors and donors, who place ‘data riders’ in their donations which encourage data sharing and common standards. This ecosystem is the backbone of the secure online space.

Dynamic Ontology and Nexus Peering. Dynamic ontologies overcome the classic data structure problems inherent in data sharing.23 Rather than making one central list of categories, by simply linking entities to each other, networks can ingest data and let the data define its own structure. A dynamic ontology allows disparate organizations’ data to interface without demanding that they follow a common set of defining characteristics. Similarly, nexus peering24 allows a whole set of diverse networks to synchronize their data with each other rather than forcing a central network structure. By using these networks as a cloud rather than a hub, there is no requirement for a centrally controlled data repository. These technologies provide the ligaments of the secure online space.

These three elements allow coordination and collaboration in local spaces, as well as global data sharing. The willingness to actually share data is more of an organizational problem than a technology one. If the structures are in place to allow data sharing, the benefits of shared situational awareness will trump this resistance over time, provided organizations observe Data Reciprocity rules. If an organization shares data, any benefit from the data needs to be shared with them. The key to this structure is collaboration amongst players’ IT staffs, under rubrics established and maintained by effective conveners.

24 “Nexus Peering.”
Key Roles. In order to synchronize the movement on this data ecosystem, four key roles must partner.

Benchmarking and Best Practices. A data ecosystem can share best practices and enable collaboration. Organizations can help each other by benchmarking what works and what doesn’t, and passing on what works to other members. This becomes all the more effective with ‘do-it-yourself’ online resources, such as an Application Programming Interfaces (APIs). These tools will allow organizations on the network or skilled allies to generate new applications, which can then be shared amongst the community. In this structure, the community would welcome new players to the movement with a ‘starter pack’ of web applications, information and contacts.

Time-Critical Data Routing. This structure moves data rapidly to whoever needs it the most. In the most direct application, a time-critical tip would move to law enforcement in enough time to rescue a trafficking victim; in a more banal form, offers of assistance, resources and information would efficiently move into the ecosystem and to whatever partners could best use them.

Social Movement Support. The long-enduring British abolitionist movement points to the critical need for social support for social justice campaigns. This network must include access for social movement actors and civil society in order to maintain the long-term health of the campaign.

Big-Data Analytics. With all data in compatible formats, all players could operate in a space of shared situational awareness insofar as players are willing to share information. There is a security-driven tradeoff between resolution and access. Therefore, law enforcement could maintain the highest-resolution picture, and compile digest versions at lower resolutions and

26 Hochschild, Bury the Chains.
refresh rates for the other tiers of the network. These releasable versions would communicate general trends without compromising sources and methods.

**Structure: Balancing Security and Access.** In managing the fundamental tension between access and security, we must consider the objectives behind collaboration. Not all communities engaged in the AHT effort require the same degree of access or are capable of the same level of security, and many are simply doing different things with the same overall dataset. For instance, an academic or policymaker may need only round number estimates by region, whereas a police department requires specifics on sources and locations. Fortunately, the organizations that require the most specific data are usually the ones with the strongest security procedures.

By scaling the resolution of these data, we resolve this security-access tension – all organizations contribute to the same overall pool of data, and the precision of information they can draw from the shared pool varies according to their data handling standards. Any organization can draw low-fidelity scrubbed data, but organizations that wish to pull high-fidelity raw data need to undergo security vetting.

**High-Security Tier: The Data Fusion Network.** The highest security tier connects law enforcement and national security professionals, cleared for access through a security benchmarking process. This would examine the full cycle of vulnerabilities, including social engineering and physical data processes. This network hosts potentially damaging information with court-admissible handling procedures, and is the only tier in the construct capable of doing so. Individual agencies may retain sources and method information at higher levels of security internally within their organization, but this network should be the primary avenue for state-level data storage and fusion regarding human trafficking.
The primary use of this tier is investigations and data fusion. This tier would also serve as a ‘black box’ for the lower-security tiers – all data gathered on victims, traffickers or current operations would reside on this tier, and lower resolution aggregated ‘digest’ versions of the dataset would be provided to the lower-security tiers daily (balanced tier) or monthly (high-access tier.) Players from lower security tiers would retain access to any data they submitted to the database, and could build accessible private enclaves the high-security network to protect victim information. Additionally, lower-security tier players can request IT assistance in the case of direct cyber attack or threats.

**Balanced Tier: Practitioner Collaboration Network.** The second tier balances access and security in order to enable collaboration amongst practitioners. While the first tier is expected to be fully secure, the second tier recognizes that most field practitioner NGOs do not have the resources to achieve the rigorous prerequisite benchmarks for this. Realizing that most NGOs do not need the highest-fidelity data about trafficker networks, but can effectively collaborate with an accurate general picture of the problem, this tier relaxes the security requirement somewhat in order to include more players. The intention for this tier is for organizations to jointly develop regional strategies and share best practices and lessons learned. This tier also supports ‘hand-offs,’ such as when an after-care organization gets a tip on victims still in captivity.

The expectation for data on this tier is that information would be brutally honest but not potentially dangerous to victims. The information must still be guarded to protect organizational equities. However, this requires less security than protecting victims, and therefore more organizations can be included in this collaboration. A vetting process would examine whether a group or an expert truly has equities in the anti-trafficking world, a legitimate need-to-know, and
rudimentary security processes.\textsuperscript{27} The security expectation of the middle tier is that no actual traffickers would be on the network itself, though the risk of possible corruption means that information might be rarely compromised. Access controls measures can control this risk by retroactively tracing any interaction with leaked information.

In many ways, this is the most critical tier. The middle tier provides access for the vast majority of stakeholders in the movement. This transforms the anti-market of the NGO scramble into a ‘synthetic market,’ where organizations gain social capital and leadership authority by producing common value through processes and data. Moreover, this tier connects the vast amount of information collected from member NGOs to the top tier of robust analytics. No less importantly, it links the general situational awareness of the movement’s operators into to social-political capital of the low-resolution ‘Social Movement’ tier.

\textit{High-Access Tier: Social Movement.} Finally, the ‘Social Movement’ tier focuses on breadth of membership at the expense of security and resolution. This tier is openly available to all, and requires no vetting. It primarily layers on extant platforms such as Facebook and Twitter, along with the open web presence of the leading organizations in the movement. There is not a formal architecture for this tier, but a commitment instead for organizations to connect their social networks together as a movement. Data shared with this tier should be fit for wide consumption, giving the public a sense of the scope and the span of the trafficking problem, as well as the effectiveness of different approaches to the problem. It should include datasets with round numbers, pooled regions and approximate dates. The purpose for this tier is awareness and recruiting.

\textsuperscript{27} The volunteer crowd-sourcing model described later could provide pro bono IT & cybersecurity assistance to organizations that should be on the network but could not meet basic security requirements.
Since this is an entirely open tier, all information is considered to be publically available and compromised. Therefore, information should be presented in a way that presents no danger to anyone involved. For instance, instead of street addresses, information aggregated by towns or regions in a resolution of months instead of days prevents traffickers from identifying any specific person for reprisals. However, since this tier is used for recruiting and generating tips, security is still a concern. Since this network tier layers on existing social networks, a number of trusted agents could provide informal vetting functions through recommendations.

This tier is key to maintaining the sustained social support for the movement. Since most NGOs already have strong web presences and social brand names, a compact between NGOs would be the best way to synchronize the various different communities that comprise the counter-trafficking movement. Such a compact would allow more accurate data sharing – instead of an order of magnitude difference in trafficking estimates, these conversations would likely cause the discourse to converge around common benchmarks. Additionally, it would begin to connect the disparate activist social networks involved on this issue, to the benefit of all. This compact would also enable shared community standards for future developments, such as crowd-sourcing routine information gathering or data entry.

Percolation & Filtration: Migrating Data Up and Down. In order to maintain the integrity of the data ecosystem, these three tiers must be synchronized. This is especially important when aggregating the massive amounts of data held by disparate NGOs, primarily on the balanced tier. Due to the risk of data compromise, the highest-security tier maintains the master database. Tips from lower-security tiers and intelligence native to the high-security tier are both integrated in this database. Investigations are accordingly conducted only at the high-security network tier.
It remains critically important to build shared situational awareness with the lower-security tiers. This is done through ‘filtration,’ where data is regularly aggregated at the top tier into lower-resolution digest forms for the lower tiers. The ‘balanced’ tier would receive information refreshed weekly, with data aggregated by city precincts and numbers rounded to factors of ten, perhaps. This level of information would provide an adequate basis for coordination and strategizing, and while consistent analysis of these digests could reveal AHT strategies, the loss of an individual digest is unlikely to cause a catastrophic compromise. A monthly digest would be produced for the open ‘High-access’ tier, aggregated by cities and rounded to thousands. This low-resolution picture provides a scope of the problem adequate for contextualizing research and focusing advocacy, but with little ability for traffickers to exploit for reprisals.

Conversely, when data moves uphill from the lower tiers to higher, it undergoes ‘percolation.’ This involves an analytical challenge and an organizational challenge. For the former, data must be contextualized if one is to make sense of it. Most tips arrive without effective context, and the process of routing and situating the data is time-intensive. Therefore, top-tier analysts set categories in standardized tip forms for the lower tiers in order to automate initial routing and enable efficient aggregation.

As to the latter, information reciprocity is key to maintaining the open flow of data from lower tier networks to higher networks. If there is no perceived benefit to providing tips, then these sources will dry up – the additional time and security risk involved with data sharing must be balanced with an equivalent benefit. Governments or donors might put a data-sharing mandate on grants, as Microsoft Research has already encouraged, but there must be organizational incentives as well. Therefore, any data provided from a tip will be tagged with

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the name of the contributing organization in the meta-data. When an investigation is successfully concluded, these tags will be aggregated from all information used. All organizations that contributed will be provided a storyboard, which they can in turn provide to their donors as evidence of their effectiveness.

**Building Scaffolding and Foundations.** This proposed framework provides scaffolding for an entire range of cyber-enhanced capabilities. If the forces of modern abolition overpower the forces of modern slavery in cyberspace, they gain tremendous advantages in coordination and analysis. Losing cyberspace hurts traffickers in several ways – first, they lose a tremendously effective coordinating mechanism that is presently integral to their supply chain. Second, they will find their adversaries in law enforcement and NGOs are considerably faster and more adaptive. Moreover, open data provides corruption-deterring transparency. Winning cyberspace yields returns both in cyberspace and in real-space.

Such a data ecosystem brings the power for justice into homes and streets, rather than confining them behind institutional walls. The structure supports crisis-mapping extensions, letting citizens use data as a floodlight to illuminate trafficker sanctuaries. It supports crowd sourcing as well, which multiplies the effectiveness of social mobilization, by providing myriad skills to actors in the movement. With an effective foundation of data sharing, the networks mobilized to combat trafficking in persons would become more adaptive and innovative than the networks that propagate trafficking in persons.

*End of excerpt.*

**CONCLUSION: IT TAKES A MOVEMENT TO DEFEAT A MARKET.**

No single organization can address the complexity of trafficking, commercial sexual
exploitation, forced labor and organ harvesting on its own. It requires a collaborative,
cross-disciplinary approach.

Many of us, in the movement, have been ruminating on the missing collaboration for
years. And we've begun to realize that the first step to achieving actual collaboration
tends to look a lot more like simple connectivity. A simple coordination of best
practices & programs, and the ability to discuss and share resources.

- Project Ethos, Freedom Collaborative Website.29

The Atlantic slave trade is often used as an analogy to modern-day slavery. For all the
problems of this parallel, I believe the link clarifies more than it confuses, and I embrace it.30
But if the analogy holds, then our suppression campaign is far closer to 1808 than to 1867. We
might imagine ourselves in the same position as the British war councils of 1817, learning from
the limited successes and major frustrations of our early actions, but realizing the magnitude of
the task ahead and the need for much deeper infrastructure.

It is encouraging that a multitude of federal agencies in the United States, and increasingly
those of the United Kingdom, are engaging this problem in earnest. It is just as encouraging that
the crowd of NGOs, specialist allies, and supporters are beginning to see these efforts as one
linked movement. These provide the two foundational pieces of the Boxer model – efficiency
and support.

the Good Fight Against Human Trafficking,” ProgrammableWeb, accessed August 26, 2014,
trafficking/2013/07/26. Full disclosure: I serve as an advisor to this project.
30 James Stewart, “How History Can Defeat Today’s Slavery,” Historians Against Slavery Website, n.d.,
http://205.134.224.208/~histor65/main/wp-
Increasingly, the leaders of this movement seem to intuitively grasp the principles behind the Boxer model. Under the aegis of Chab Dai, web designer Taylor Poe built the Freedom Collaborative website as a relational focal point for the tremendously diverse communities mobilized to fight trafficking. The site is intended to serve as a wiki for the movement, collecting and collating best practices and electronic resources. An Application Programming Interface (API) allows coders from any organization, or no organization at all, to design and implement advanced tools for the platform on their own. His is one of several websites developed by tech-savvy abolitionists that share a common vision for connectivity and collaboration.

Sarah Durfey of Boston’s Abolitionist Network and Betty Ann Boeving of the Bay Area Anti-Trafficking Coalition exemplify the importance of organizational linkers. By building conversations and trust networks between law enforcement, NGOs, and broader civil society in their cities, they have made it much harder to be slavers in those towns. The long-persevering leading NGOs have begun to see abolitionism as a movement as well, and are increasingly willing to provide leadership and public goods to sustain that movement. Corporate tech giants, innovative startups, and academic computing experts are increasingly bringing their technological expertise to this fight. State power is not yet fully engaged in this task, though James Stavridis’ theories on convergence increasingly envision security equities in suppressing these illicit networks. This is an interesting time for modern abolitionism.

34 Ungerleider, “Google, Palantir, Salesforce Fight Human Traffickers.”
The Boxer model is not an ideal type, but an emergent result of trial and error, so these early results reflect encouragingly on the model’s validity. Far more importantly, the Boxer model’s scripts predict progress for these approaches. If the modern abolitionist movement can take the fast roads, then they will more quickly be able to shut down focal points, pursue the black market into the shadows, and hold it at bay long enough to reshape demand.

On this point, I am optimistic. The movement builders, linkers, and innovators of today would find good company with their counterparts of two centuries ago. May their ends be as similar as their means.
Though this is a model for ‘the Admiralty, not the Prime Minister,’ Admirals work for Prime Ministers. This appendix provides a working theory that leads the Prime Minister (or any high level elected leader) to embark on a suppression policy in order to situate the ‘theory of victory’ that the Admiralty (or any law enforcement or security leader) will apply to bring that policy to fruition. Effectiveness models are built upon grand theories, whether or not they are made explicit, and the assumptions that derive from these grand theories inform strategy building. Illicit market suppression, like counter-insurgency, is necessarily intertwined with theories of governance. Therefore, we will use the nascent Convergence literature to set out such a theory.

**Convergence.** As articulated by Admiral (Ret.) James Stavridis, convergence is the “dark side of globalization.”\(^1\) This is where low-level illicit actors of all sorts make use of common global information and transportation architectures, and hence begin to emulate and even partner with each other. There are two key elements of this line of thought – 1) common infrastructure and the erosion of governance, and 2) the collision of illicit economics and radical ideology.\(^2\)

To the first point, there are three levels where illicit markets and violent extremist organizations (VEO) can share infrastructure. The simplest level is explicit cooperation – where terror groups are selling illicit drugs, or mafia are contracted by violent extremists to smuggle weapons, or groups are doing both political violence and illicit economics all at once. This level of cooperation is deceptively complex – the temptation is to assume that all bad things go


\(^2\) Ibid.
together, the interaction between illicit actors depends on specific needs of both organizations and the governance context. These relationships are rarely as simple as they seem. For instance, while a smuggling ring could plausibly serve both terror infiltrators and human trafficking, a number of incompatible constraints would generally prohibit a ring that does one from doing the other. Human trafficking requires an invasive commodification and exploitation process, which involves a number of security vulnerabilities for the ring that might deter a terrorist. Similarly, a human trafficking ring most likely could not afford to weather the kind of heat that a terror association would bring.

These problems come to a head over terror-narcotics connections. Insurgent groups like the FARC and the Taliban engage in illicit narcotic production. A simple model would attempt to eradicate these illicit crops in order to dry up the funding base for these groups, but such a policy often backfires. As Vanda Felbab-Brown argues, a state needs strong governance in an area if it is going to successfully conduct an eradication campaign, and the whole point of an insurgency is to weaken (and thereby eventually replace) state governance. Therefore, eradication campaigns in poorly governed areas are likely to aid the insurgents by alienating the population, which exacerbates the problem.³ The relationship between terror, crime and governance must therefore be more complex.

The second layer of convergence looks at shared practices and knowledge. To continue our trafficking-terror case, while one ring is unlikely to engage in both due to incompatible security concerns, knowledge of low-risk cross-border roots would be equally useful to both. Every time any group penetrates a border, some knowledge is generated about how to do so again in the future. Similarly, if a drug trafficker learns how to use ‘bit-coin’ as a virtual hawala to throw

³ Vanda Felbab-Brown, Shooting Up: Counterinsurgency and the War on Drugs (Brookings Institution Press, 2009).
law enforcement money-chasers off his scent, that tactic is now a part of illicit corporate knowledge and plausibly accessible by terrorists. Sharing Tactics, Techniques and Procedures (TTP) does not require nearly as much commitment and does not impose the same degree of vulnerabilities, especially when shared across globalized information infrastructures. Do-it-Yourself Improvised Explosive Device websites speak to this point. This ‘shared practices’ layer broadly parallels our previous insights about structural efficiency and ‘market-like’ forms from network theory.

**Working Assumption:** Shared Practices and Knowledge are key centers of gravity for illicit market suppression. Tactical Learning and Dissemination are functions of structural configurations, with ‘market-like’ structures performing best. The suppression regime has the lever of interdiction to de-optimize these structures.

The third layer of convergence considers the corrosive effect of violent political and criminal actors on governance. Crime will tend to corrupt state officials, terror disrupts confidence, and insurgencies disrupt infrastructure; all of these are bad for the efficient provision of government functions. We will explore this point at length later, but it seems uncontroversial that illicit actors of all sorts reinforce each other in this third and most abstract layer. This broadly parallels our intuitions about the necessity of social support in illicit market suppression.

**Working Assumption:** Governance is a key center of gravity for illicit market suppression. Governance allows the suppressor to bring force to bear, and supports demand restructuring. Poor governance allows the illicit market to thrive by filling their coffers through illicit demand. The suppression regime must extend some form of

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governance into the spaces occupied by the illicit market; the illicit market will attempt to erode governance and thereby expand.

To explore the second core tenet of convergence, we’ll use arguments from mafia scholar Diego Gambetta and Mao Zedong’s theories of revolutionary warfare.\(^5\) Mao argues that guerrilla war takes three phases. First, the revolutionaries organize and prepare; second, they conduct terror attacks and transition to an insurgency; finally, they carry out a conventional war to consolidate control. Each phase increases the degree of the governance enjoyed by the revolutionary group. However, governance requires answering legions of practical, banal questions about service provision and the like. Accordingly, each phase adds more low-politics distributional concerns to the high-politics ideology-centric revolutionary group.

Max Weber’s work on legitimacy explains this centralizing, stabilizing tendency.\(^6\) In a simplified version of his model, there are two forms of power – coercive and legitimate. Coercive power is the raw exercise of compulsion, which enables you to get exactly what you want, but at a high price. Legitimacy makes power go much farther by embedded it in a web of nested bargains. However, with each of these bargains, you promise to abide within certain restraints, which stabilizes things for everyone but limits your freedom of maneuver. Therefore, as the revolutionary group becomes more successful, it enters into these sorts of civil society bargains in order to efficiently extend its power. Accordingly, they lose some of their revolutionary fervor as they have to put it into practice. This results in a mix ideological high politics with distributional low politics that resembles statecraft.

The opposite process, low-politics group moving toward high-politics, is described in


Gambetta’s analysis of the Sicilian mafia.\textsuperscript{7} Describing the Mafia as a provider of private protection, he presents a model of organized crime that looks remarkably like statecraft. Channeling Tilly’s “state as a protection racket,”\textsuperscript{8} the various Italian organized crime groups perform protection and contract enforcement, which are core tasks of the state. Since illicit groups do not directly have access to these state resources, larger illicit groups can trade on their reputation to fill these functions.

Starting as a pure low politics group – solely about making money – these groups venture into higher politics in order to better make money. Contract enforcement and protection are cheaper mechanisms of conflict resolution than combat, but in order to provide these things, one must venture into ideology to explain why one group is authorized to perform these functions. Climbing even further into high politics, corruption provides an excellent means to hijack the state. This allows a criminal group to extract rents from the system, perform banking functions, and use legal protection strategies. At some point, the criminal network becomes indifferentiable from the state. As Mao’s model moves from pure high politics into a mix of high and low politics, Gambetta’s model moves from pure low politics toward a similar mix politics.

\textsuperscript{7} Gambetta, \textit{The Sicilian Mafia}.
\textsuperscript{8} Charles Tilly et al., \textit{War Making and State Making as Organized Crime} (Cambridge University Press, 1985), http://static.ow.ly/docs/0%20Tilly%2085_5Xr.pdf.
This model provides two key assumptions that undergird a model of illicit market suppression. First, illicit market suppression is fundamentally about governance. To a very broad reading of regime theory, any place where people conduct business has some degree of governance. The problem with the West African coastal seas during late-phase Atlantic slave trade suppression was not so much a lack of governance, but governance of the wrong kind. Slave traders had strong expectations about how business was conducted in this space, and the British continuously struggled to supplant that governance with one more conducive toward their ends.

To this point, one key strategy debate in the British suppression centered on the relationship between sovereignty and governance. The British approach took a tack of increasing governance over the commons through shared sovereignty. They did so through international courts and

treaty networks. The Americans, allergic to the idea of participating in any sort of shared sovereignty, preferred an approach that attacked slaver governance by removing from them the protections of sovereign flags. This piracy-based approach treated slavers as hostis humanis generis (‘enemies of all humanity,’) and therefore protected under no flag.11

**Working Assumption:** The core struggle in the market domain (the space occupied by the illicit market) is about governance. Both sides need to build governance conducive to their ends, and their ends are mutually exclusive.

This model parallels an intuition from our building blocks: the natural advantage of the suppressor is the ability to marshal forces, but they are constrained in how they use them. The legitimacy bargains that underwrite the state allow it to achieve tremendous economies of force, but it comes at a cost of the limitations imposed by those bargains. Accountability, oversight and political constraints all dramatically reduce the suppressor’s ability to innovate and adapt, but they legitimacy it provides grants deep pockets so long as public support for the campaign remains. Conversely, the natural advantage of the illicit market is its adaptability, but it cannot win a pitched battle against the state because of the state’s ability to draw on incomparable reinforcements. Continuing the resource exchange ratios analogy, the state’s large-scale legitimacy advantage gives it an excellent ‘check-writing ratio,’ and the adaptability of the illicit market gives it excellent ‘check-cashing ratios’ on small scales. (These erode as the scale increases, which result in stalemates and nested bargains.)

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**Working Assumption:** The suppression regime enjoys significant advantages in its ability to marshal forces (‘check-writing ratio’), but disadvantages in small-scale innovation (‘check-cashing ratio.’) The converse is true for the illicit market.

**Governance Arc Model.** To further develop the idea that governance is at the heart of the struggle against illicit markets, we’ll formalize this intuition. If governance is the ability to implement a set of rules, then there should some tradeoff between the volume of rules and compliance with those rules for a given amount of governance.\(^{12}\) This results in a ‘Pareto frontier’ of all possible combinations of rules (polity depth) and rule-followers (polity breadth.) Building on this assumption, setting a policy on a given issue results in a combination of rules and rule-followers along this frontier. These rule followers, the ‘constituents,’ and these rules, the ‘constitution,’ together make up a polity.

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\(^{12}\) Like any modeling assumption, this fails to represent the world at its extremes. While an increase in regulatory burden is likely to result in diminished compliance, if there is an expectation of no rules, it is unlikely that people will comply with minor rules; if there are too many rules, as in the Soviet Union, liberalization efforts can result in less compliance rather than more. Also, increasing rules can remove groups from the polity, which reduces resources for governance – we address this in the dynamic model. But, in mid-ranges of policy on most issues in a consolidated democracy, this tradeoff holds – even on an issue as sensitive as gun rights or abortion, the vast majority of people will continue contributing to governance by paying taxes and the like even if they do not achieve their preferred policy outcome.
Changes to rules result in public choice problems. If increasing the depth of rules decreases the number of rule-followers, adding rules results in a split between the ‘reformed polity’ (those who follow the new rules) and an ‘excluded polity’ (those who do not.) The resulting conflict pits these two against each other, with the reformed polity attempting to enforce the rule, and the excluded polity doing their best to impede the process.\textsuperscript{13} The excluded polity’s resistance (clandestinely carrying out proscribed practices, not turning in others who do, hampering enforcement efforts, and/or public campaigning) increases the cost of governance in the hopes of making the new rule unenforceable or at least uneconomical.

\textsuperscript{13} We assume that the production of governance is not directly affected by this conflict, but in extreme circumstances it can be. If the situation gets so bad that people cease paying taxes, declare independence, and so on, then this can result in a ‘death spiral’ where enforcement attempts reduce governance, which further complicates enforcement.
Therefore, in order to successfully conclude the reform attempt, one must expand governance. These expanded enforcement powers re-incorporate the excluded polity into an expanded polity through coercion, persuasion or co-optation. This broadly aligns with what we know of historical and contemporary suppression attempts. During the British suppression of the Atlantic Slave Trade, the Royal Navy massively expanded operations and infrastructure in West Africa to enforce international law. Eventually, the British slave-holding elites agreed to a compensated emancipation plan and were co-opted into the official abolitionist policies.\textsuperscript{14} The expansion of law enforcement during Prohibition was no less dramatic, which parallels the cost and infrastructure of the contemporary anti-narcotics campaign. The anti-human-trafficking movement is struggling to move forward from rule reform into expanded governance.

Relating this process back to our previous insights about the relationship between governance and illicit market suppression, we can imagine the magnitude of this governance vector as ‘efficiency.’ The more efficient the means of governance are, the more ‘bang for the buck’ we get out of one unit of governance. Similarly, governance support for the suppression campaign can be imagined as the angle of the governance vector, as it signifies the will to maintain the

\textsuperscript{14} Hochschild, \textit{Bury the Chains}; Drescher, \textit{Econocide}.
higher level of rules. The suppressor must maintain the will to continue the campaign, and increase efficiency to expand governance in order to enforce the new sets of rules.

This model implies that suppression efforts are subject to exogenous governance shocks. A positive shock enables new rules, while a negative shock forces returns to lower levels of rules. The Prohibition case supports this assertion: the creation of the Income Tax (in lieu of alcohol excise taxes) provided resources to begin the campaign; the Stock Market Crash dried up these resources and made a reinstated alcohol excise tax, and hence reinstated alcohol, far more attractive.

**Working Assumption:** Governance can be described as a combination of Support and Effectiveness. Support is the political will to continue a campaign (‘check-writing ratio,) and Effectiveness is the how efficiently that will translates into effects in relevant domains (‘check-cashing ratio.)

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15 Okrent, *Last Call.*
16 Ibid.
**Testable Implication:** Exogenous shocks to the available resources for governance should alter the set of possible outcomes available to the suppressor.

Extending this model to include competing sub-groups reveals a key insight about illicit market suppression: groups that are strongly connected internally but poorly connected to the whole stand to gain the most by more restrictive rule changes. This ‘best marginalized group’ stands to gain the most from an illicit market, due to its internal organization, and stands to lose the least from the sanctions of the larger society. For instance, the various ethnic organized crime groups during prohibition, or the pirates who inherited the late-phase illegal Atlantic slave trade, both were strongly internally organized but loosely connected to the larger society.

We can picture this process on the model by depicting a number of competing models of governance on the governance arc graph. The dominant polity enjoys a ‘Peter principle,’ where they can incorporate more groups, which in turn increases their governance, which then allows them to incorporate even more groups.

There are three possible relationships between one of these sub-groups and the larger dominant form of governance. First (green arc) a sub-group can be fully incorporated into the larger governance construct (blue area.) These are groups that under normal sets of policies will remain under the aegis of the primary polity unless extreme policies are pursued. An example of
this is the Green Party in the United States on the issue of environmentalism. Normal political bargaining is the best strategy for the main governing body for these groups. Second (red arc), a subgroup may have views so wildly divergent from the main group that no reconciliation is possible. This might be Al-Qaeda’s relationship with the American polity on any of a number of issues. Such a group can only be managed as a threat. Between these two, and most interestingly (orange arc), a subgroup may have some equities in the main group’s arc of possible polities and some outside. With such a group, a truce is possible where members of the subgroup comply with some lessened set of rules in exchange for stability (purple area). Consider, for instance, implicit truces and stalemates with areas of inner city crime.

When we introduce rule changes into this model, we find that the structure of truces and hostile groups changes. Increasing the rule-set causes groups with whom truces had been established to become fully excluded and therefore hostile, and groups that had previously been incorporated into the polity become marginalized. One interesting implication here is that the best-organized liminal group inherits the space previously occupied by licit pursuits (contested polity in the left graph below.) However, by increasing governance, these contested groups can be re-incorporated into the polity and with truce possible with their remnants (right graph below.)
Incorporating this insight back into the larger convergence model reveals the awkward possibility that one of the extenders of state governance is a network of implicit bargains associated with stalemates against illicit groups (graph below.) Fully hostile groups may survive below a sense-making frontier, provided they do not grow large enough. However, groups that share some degree of overlap with the core governance can reach implicit truces. This is due to a power dynamic familiar to counter-insurgency – if the population does not support you, then it becomes very difficult to gain the low-level intelligence necessary to prosecute minor crimes.

Accordingly, to maximize the impact of the limited governance resources available, law enforcement may elect to forgo full enforcement of these sorts of crimes in areas where there is a
lack of population support. Such a strategy likely involves probing enforcement, where these stalemates are revisited occasionally with periodic enforcement efforts, or skirmishing enforcement, where overt illicit behavior is prosecuted in order to force the illicit organization to take basic security countermeasures. Should the area or group in question actively defy sovereignty or break rules the society is fully committed to enforcing, such as murder, then the state will marshal resources and the stalemate no longer holds. This results in partial compliance with laws, and hence implicit truces.

For example, a veteran law enforcement officer tells a story from a ride-along with the Las Vegas Police Department. Investigating an unrelated event, two police officers hear shots fired in the distance. Within a few minutes, a call to investigate a gunshot wound comes across the radio. Upon arriving on the scene in a high-crime area, they encounter an individual who was stable but clearly shot. Presented with standard queries, this individual responded that he had fallen down and neither needed nor desired any assistance. The officers asked whether or not he was sure, and he responded that he was. They proceeded to drive away and continue their patrol.

This whole scenario demonstrated a cost-imposition strategy on the part of a hostile population – the individual clearly would not assist an investigation, which would make finding the perpetrator and achieving a conviction nearly impossible. Moreover, since he was the aggrieved party yet not interested in a police-mediated outcome, clearing the case would result in little benefit to the department. Accordingly, the officers chose to abandon a high-cost/low-benefit potential case in order to focus resources elsewhere. Law enforcement also can pursue a cost-imposition strategy. If a crime wave or a politically salient murder catches the attention of a

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17 This is not necessarily a wise strategy – it may be that a lack of enforcement in these areas is exactly what leads to the lack of population support. Local conditions matter greatly in population-centric strategies (Kilcullen 2010.)

18 Personal Interview, Sgt. Bruce Blair, Montgomery County Police Department (Ret.), US Dept of Justice, National Institute of Justice, National Law Enforcement and Corrections Technology Center.
mayor, law enforcement can respond by surging enforcement to the affected area. Doing so greatly increases the cost of doing business for previously tolerated practices, resulting in selection effects for criminals who avoid triggering these sorts of responses. These two countervailing forces produce an equilibrating tendency.

The insight here is that mutual cost-imposition strategies on the part of law enforcement and criminals result in stalemates, which lead to implicit bargains. In poorly governed areas, criminal networks can make routine enforcement so costly as to become prohibitive. Law enforcement can similarly make it difficult for criminals to do business through random patrols and occasional large-scale busts. These two strategies give both sides leverage on the other, which results in high-priority laws being enforced at the expense of low-priority laws. On a larger level, these sorts of bargains bring stability to an overall enforcement strategy. However, changes to the rule-set lead to changing balances of power. This results in a struggle to control the newly opened illicit market space, which alters this network of implicit bargains. In turn, this yields conflict, which is the primary negative externality of suppression campaigns.

*Working Assumption:* The ‘best marginalized group,’ or the most organized liminal group, stands to inherit any proscribed previously licit markets. They have the most to gain from provisioning the now-illicit good or practice, and the least to lose due to their lack of integration in the larger society.

*Working Assumption:* In a stable state, law enforcement and criminals can stabilize stalemates resulting from mutual cost imposition strategies by way of implicit bargains. However, a change in the rule-set disrupts these bargains, yielding conflict until a new equilibrium can be achieved between law enforcement and all criminal players.

There is an upside of this gritty realization – since some set of bargains is going to exist
regardless, we can exert some leverage in deciding with whom we bargain. Paralleling COIN strategy, both law enforcement and illicit networks must navigate within the larger population. For both sides, civil society can either amplify or inhibit their available power. If illicit networks are ‘wrong kind of civil society,’ then we can also bargain with the right kinds of civil society. Neighborhood watch and community policing initiatives are legitimate bargains with civil society, where law enforcement proves itself helpful and trustworthy, and the population cooperate by providing intelligence and cooperation in prosecutions. In this way, law enforcement can shape the environment by choosing formal bargains with neighborhoods rather than informal bargains with illicit networks. Ideally, this allows positive civil society to supplant uncivil society and improves long-term governance.

We can then formulate Wilson’s ‘Broken Windows’ theory as a population-centric law enforcement strategy. If a hostile population dramatically increases the cost of investigating even major crimes, then eradicating minor crimes is a relatively inexpensive way of changing the operating environment. Becker’s focus on major crimes, much like kinetic-centric COIN strategy, may be more expensive in the long run if it cedes the population to criminal networks.

Therefore, civil society partnerships are an essential conductor of governance between the state and the street level. This cashes out in two different ways – first, if you lose the population on the suppression issue, then you lose your support and with it the whole campaign. Second, if you network well with the population, you gain suppression efficiency through intelligence and general support in the legal system.

**Working Assumption:** Civil-society formal bargains, such as in neighborhood watches and community policing, serve as force extenders. These replace the need for implicit bargains with illicit networks, and reinforce suppression regime efficiency and support.
**Sensemaking Below the Line.** Bringing this idea back to Scott’s model from *Seeing Like a State*, the state must constantly grapple with the limitations its ‘sense-making frontier’ when enacting any rule changes (‘Detect/Counter Line’ on graphic below.) Illicit groups fare far better than the state at low-level innovation, but they do so for the same reasons that positive civil society and economic actors prosper in local areas. Since the state has a difficult time making sense below a certain level of organization, it must find a way to deal with these low-level threats.

The traditional approach to solving this ‘sense-making below the line’ problem is to ‘drop the line.’ This is done by improving sense-making through surveillance and enforcement technologies. Classic suppression (graphic below) uses more resources to achieve higher fidelity on a given problem set, thereby dropping the sense-making frontier further. However, this still runs into the problem of geometrically worsening resource exchange ratios on the part of the state as we examine more localized problems.
A more draconian approach to this problem denies low-level threats access to civil society space by disrupting that space altogether (graphic below.) This ‘scorched earth’ solves the ‘sensemaking below the line’ problem by making the space below the line uninhabitable. For obvious reasons, this approach is unacceptable for liberal democracies. It has the additional unpleasant side effect of radicalizing anyone who manages to endure the use of these tactics. Still, the logic of this approach should be understood, as its use is not unprecedented – as depicted in the classic film The Battle of Algiers.19

The third, and preferred, approach to the ‘sensemaking below the line’ problem is ‘partnering

below the line.’ While state actors have a difficult time making sense of the world below a certain level of specificity, civil society actors do not (graphic below.) Through public-private partnerships, these actors can partner with the state in order to allow the state to bring its force to bear in a locally relevant and contextualized way. Community Policing strategies follow the broad contours of this logic. The problem with this approach is that it low-level law enforcement intelligence becomes subject to the preferences of civil society actors, though from a civil liberties perspective, that limitation may be acceptable.

If the ‘partnering below the line’ approach is indeed the preferred method of dealing with this problem, then we return to the primacy of networks and partnerships. As we discussed with the ‘check-cashing ratio,’ if civil society is on board with a suppression campaign, they will allow the resources of that campaign to be used far more effectively provided they are effectively integrated into that campaign. There are two key pieces here that echo a refrain from the rest of the model: this depends on the support of civil society to provide this information, and it depends on the efficiency of the suppression regime to receive this information. Therefore, we return to

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efficiency and support.

**Working Assumption:** Public-Private Partnerships are crucial for success in a suppression campaign. Civil Society actors can make sense of low-level contextualized problems better than the state, but the state retains more power; in partnership both gain the resource advantages of the state and the contextualization advantages of the low level actor. This partnership is contingent upon public support and upon the efficiency of the suppression regime to absorb that support.

This public-private partnership model will provide foundational assumptions to the applied policy recommendations in this dissertation, as it is the optimal option for dealing with the crucial sense-making problem. Altogether, the convergence literature has given us a foundation for solving this problem, as well as for considering broader issues of governance amidst a spectrum of terror, insurgent, and criminal threats.
APPENDIX B: ‘VOYAGES’ DATABASE ADDITIONS
ADDITIONS TO THE TRANS-ATLANTIC SLAVE TRADE DATABASE.

[Placeholder: Variables added to the Voyages database for legal status of voyage, imputed from flag of registry. Version of the database, aggregated by year, also available. Modifications and source code available upon request from author.]
APPENDIX C: THE RUM-RUNNER DATASET
USCG RECORDS OF LIQUOR SMUGGLING VESSELS DURING AND AFTER PROHIBITION (1924-1935.)

[Full dataset available from author upon request.]

BACKGROUND.

The Rum-Runners Dataset (RRD) depicts maritime liquor smuggling indicators during and immediately after Prohibition. The Dataset covers the period from 1924 through 1935 with weekly reports on the location and status of rum-running (liquor smuggling) ‘motherships.’ These large vessels under foreign registration would hover off American coasts awaiting fast ‘contact ships’ to offload their liquor and run it ashore. The Coast Guard Intelligence Office, from whose reports the dataset is derived, managed human intelligence, signals intelligence, cryptography, naval patrols and intelligence fusion networks through this time period, which provided detailed and remarkably comprehensive information about the status of vessels involved in the rum trade. Variables in the dataset describe number of vessels hovering off different locations off the American seaboard, as well as the status of ships loading, unloading or incapacitated, with additional annexes covering correlates of demand for suppression and consumption. Since the RRD describes internal structure of an illicit market during suppression, it provides an excellent platform to analyze the competitive sensemaking characteristic of combatting dark networks.

The RRD covers contestation between the United States Coast Guard contended with networks of illicit liquor smugglers (‘Rum-Runners,’ ‘Blacks’ or ‘Black Ships’\(^1\)) during the Prohibition Era. The Volstead Act in 1920, which banned beverages of greater than 0.5% alcohol-by-weight, created a demand for alternate sources of alcohol. Maritime trade provided a primary avenue for connecting large volumes of foreign (especially Canadian) liquor to

American thirst; therefore, the Eastern Seaboard quickly became a main front in the Prohibitionist campaign. In response, the US Coast Guard began a massive expansion in 1924. This expansion sets the stage for this dataset, which chronicles the decade-long struggle that followed.

**Coverage & Data Sources.**

The RRD derives primarily from CAPT Root’s weekly reports on Rum-Runner Activity.² An example of these reports is included in Figure 1 below. 297 of these entries cover the period from 30 Aug 1924 until 2 May 1930 with almost complete coverage. The layout of these forms underwent three major revisions – the initial version categorized hovering ships by region, and accounted for loading and unloading by region (e.g. Canada, Europe and the West Indies.) In order to accommodate rum-runner expansion to a diversity of loading ports and hovering sites (14 Feb 1925), the form added a number of higher-resolution categories. This was further adjusted (25 Jul 1925) with hand-written categories for distant hovering vessels, as the Rum Rows were increasingly depopulated and replaced by clandestine transfers. The third version of the form (26 Nov 1926) builds even more categories, and reflects increasing Canadian law enforcement involvement in the enforcement effort (as well as a surge of reverse smuggling into Canada, due to provincial prohibition and high liquor taxes.) A modified version of this last form (1 Feb 1929) formalizes a number of recurring handwritten categories. These forms end abruptly in 2 May 1930 when Captain Root, quite literally, gets hit by a car. (It is unknown if the same form continued, but if so, it is most likely lost, as the National and Coast Guard Archives have no further information.)

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Fragmentary data exists through 28 June 1935. There are six weekly reports with data on loading and hovering ships throughout this time period. A near-weekly sequence which only covers hovering ships begins 9 December 1933 and continues through the remainder of the
dataset. Finally, archival records from 1933-1940 contain a graph of foreign smuggling vessels hovering off the Eastern Seaboard, aggregated by month. (Figure 2) This graph is remarkably useful in filling in gaps in the fragmentary data, but since it aggregates ‘unique ships per month,’ and the categories from the larger dataset are aggregated by week, there is not a direct way to translate the graphs together. Therefore, an imputed measure provides a best-fit using a correction factor.3

The combined graph of the imputed monthly hovering number and the known monthly hovering number is presented in Figure 3 below. Note the areas of overlap between 1929-1930 and 1934-1935. These overlapping areas were used to calibrate the imputation and correction factor; they demonstrate that the two data-sources fit well enough for reasonable joint inference about trends for the entire period. The combined variable should be used as an instrument of the overall health of the rum trade, rather than a direct measure of hovering ships. The graph is primarily

3 Specifically, this imputed term is the lagged North Atlantic Loading variable multiplied by 119.45%. This yields an R² of 0.74 (0.64 when correction term entered) and is significant to any conventional standard (t=5.87 or 4.74 respectively.) Various other combinations of variables were tested, through stepwise and brute force methods, and these combinations did not substantively improve curve fit; moreover, the theoretical specifications of these models were much weaker. The rationale for lagging the variable is that a week that ends on the first of the month would count for that month, when the days that comprise it are in the previous month. The rationale for the correction factor is that there is no direct conversion between unique ships per month and unique ships per week, but a constant does a better job of accounting for potential double-counting than a monthly average. More directly, the week-to-week counts will include largely repeat offenders. This correction factor was derived from the period of overlap between 1929-1930, and checked against the 1934-1935 overlap.
useful in exploring changes in the trade surrounding the 21st Amendment and repeal of national prohibition.

Figure 72: Combined Hovering Graph, 1925-1935
VARIABLES.

The RRD contains 67 variables and 567 entries.

Time Period. The first set of variables provides different formats for the date of entries.

1) Entry Number – Self-Explanatory.

2) Year – Self-Explanatory.

3) Month – Self-Explanatory.

4) End Day – Last day of the week that the report covers.

- Generally Friday.

5) Week of Year - The week of the year that the report covers.

- Useful as a control for seasonal variation.

Total. The second set is an aggregate measure of ships in the trade.

6) Total Blacks – “Rum-Runners under suspicion or surveillance.”

The sum total of ships implicated in or suspected of rum-running, inclusive of all
locations and current status.

Off-Station. The third set describes all ships active but not on-station.

7) St. Pier Load – Ships refitting or loading for the United States in St. Pierre & Miquelon
(French Territory off coast of Canada.)

- Generally destined for Eastern Seaboard.

8) MProv Load – Ships refitting or loading for the United States in the Canadian Maritime
Provinces (New Brunswick, Nova Scotia, and Prince Edward Island.)

- Generally destined for Eastern Seaboard.
9) **MP Seizure** – Ships seized by Canadian Authorities for rum-running in the Maritime Provinces.

10) **MP Broke/Legit** – Ships in the Maritime Provinces laid up or engaged in illegitimate trade.
   - (Subset of ‘Broke/Legit.’)

11) **BC Load** - Ships refitting or loading for the United States in British Columbia.
   - *Generally destined for West Coast.*

12) **BC Brk/Legit** – Ships in British Columbia laid up or engaged in illegitimate trade
   - (Subset of ‘Broke/Legit.’)

13) **BC Seizure** – Ships seized by Canadian Authorities for rum-running in British Columbia.

14) **Mex Load** – Ships refitting or loading for the United States in Mexican ports.
   - *Generally destined for West Coast.*

15) **Tahiti Load** – Ships refitting or loading for the United States in Tahiti.
   - *Generally destined for West Coast.*

16) **Asia Load** – Ships refitting or loading for the United States in Asia.
   - *Generally destined for West Coast, Opium rather than Rum.*

17) **Enroute Eur** – “Ships in Maritime Provinces loading cargo for Europe.”

18) **Eur/WI Load** – “Rumrunners in Europe or the West Indies refitting or loading for the United States.”
   - (Category later disaggregated, discontinued.)

19) **Cuba Load** – Ships refitting or loading for the United States in Cuban Ports.
   - *Generally destined for Gulf or Eastern Seaboard.*
20) **Bahama Load** – Ships refitting or loading for the United States in Bahamanian.

   - *Generally destined for Gulf or Eastern Seaboard.*

21) **WI Load** – Ships refitting or loading for the United States in West Indian Ports.

   - *Generally destined for Gulf or Eastern Seaboard.*
   
   - *(Category later disaggregated.)*

22) **Eur Load** – Ships refitting or loading for the United States in European Ports.

   - *Generally destined for Eastern Seaboard.*

23) **Berm Load** – Ships refitting or loading for the United States in Bermuda.

   - *Generally destined for Gulf or Eastern Seaboard.*

24) **BHond Load** – Ships refitting or loading for the US in British Honduras.

   - *Generally destined for Gulf or Eastern Seaboard.*

25) **Inbound** – “Rum-runners at sea with cargoes bound for the US.”

   - *(Later broken out by region.)*

26) **Outbound** – “Rum-runners at sea bund home for refitting a load.”

   - *(Later broken out by region.)*

**Temporarily Inactive.** The fourth set describes all inactive ships in the trade.

27) **Detained** – “Rum-runners in American Ports under Detention.”

   - *(Does not count RCMP Seizures in Canadian Ports.)*

28) **Broke/Legit** – “Rum-runners laid up or temporarily in legitimate trade.”

   - *(When later disaggregated, this category sums both regions.)*

**No Track.** The fifth set describes known vessels with unknown locations.
29) *Unknown* – “Rum-runners at sea, exact movements unknown at present.”

**On Station.** The sixth set describes ships hovering off of the American coast.

30) *Total O/S* – “Rum-runners on station, total.”

31) *N of CCod* - “Rum-runners on station, North (or Eastport) of Cape Cod.”

32) *CCod-Mont* – “Rum-runners on station, Cape Cod to Montauk.”

33) *Montauk* – “Rum-runners on station, Montauk (or Montauk Point.)”

34) *NYC* – “Rum-runners on station, off New York entrance.”

35) *Atlantic City* – “Rum-runners on station, off Atlantic City.”

36) *Cape May* – “Rum-runners on station, off Cape May.”

37) *CMay-CChz* – “Rum-runners on station, Cape May to Cape Charles.”

38) *Errol Island* – “Rum-runners on station, off Errol Island.”

- Only one entry of two ships. *Location unknown.*

39) *Delaware* - “Rum-runners on station, off Delaware.”

- *Later folded into Cape May to Cape Charles.*

40) *Nflk/Chesap* – “Rum-runners on station, off Norfolk (or Chesapeake.)”

41) *Gulf/Missi* – “Rum-runners on station, off Mississippi Delta (or Gulf Div.)”

- *(Category later disaggregated.)*

42) *Chen-CHS* – “Rum-runners on station, Cape Henry to Charleston, SC.”

43) *CHS-MIA* – “Rum-runners on station, Charleston to Miami.”

44) *Miami* – “Rum-runners on station, off Miami.”

45) *MIA-Mobile* – “Rum-runners on station, Miami to Mobile, AL.”

46) *Mob-PtEads* – “Rum-runners on station, Mobile to Port Eads, LA.”
47) *PtEads-RioGr* – “Rum-runners on station, Port Eads to Rio Grande.”

48) *West Coast* – “Rum-runners on station, off West Coast.”

49) *Great Lakes* – “Rum-runners on station, Great Lake.”

50) *Canada* – “Hovering off Canadian Coast (or Hovering off coasts of Maritime Provinces, or On Rum Row off Nova Scotia.)”

**Other.** The seventh set describes a few variables used in initial reports and abandoned.

51) *Inbound West* – “Rum-runners at sea with cargoes bound for the US, W Coast.”

- *(Category later re-invigorated with NORPAC Load)*

52) *Inbound Gulf* – “Rum-runners at sea with cargoes bound for the US, in West Indies bound for Gulf.”

- *(Category later re-invigorated with WI Load)*


- *(Category later re-invigorated with NORLANT Load)*

54) “*On the Job*” – “Rum-runners ‘on the job.’” No Further Information.

**At Sea in Transit.** Category built in response to distant hovering in wake of Rum Row.


56) *NORPAC Load* – Rum-runners at sea inbound in the North Pacific.

57) *WI-> Loaded* – Rum-runners at sea inbound from the West Indies.


59) *NORPAC Home* – Rum-runners at sea outbound in the North Pacific.
60) -> *WI Homeward* – Rum-runners at sea outbound back to West Indies.

**Hovering v. Reported.** Number tracked by intel sources vs. number sighted and trailed by patrol vessels by region. Given in slant – Previous Week Trailed / Current Week Trailed / Unaccounted For.

61) *NORLANT* – In the Northern Atlantic.

62) *GULF* – In the Gulf Division.

63) *NORPAC* – In the Northern Pacific.

**Imputed and External Variables.** Numbers from outside sources, especially the aforementioned monthly hovering graph.

64) *Hovering Index* – Corrected formula for estimating equivalent Monthly Hovering Statistic, using Lagged NORLANT Load x 119.45%

65) *Reference Index* – Manually input Monthly Hovering Statistic from graph.

66) *Imputed Graph* – Combination of 64 & 65 – where Reference index is available, it is used, where it is not, hovering index is used.

67) *Differential* – Error between Hovering Index and Reference Index.

**Checksums and Reference.** The remainder of the variables are internal checksums, used to verify data entry and correct transcription errors. The final row is the reference for the entry, linked to documents scanned from the Archives Record Group 26.
ANNEXES.

The primary dataset is stored in the Tab “CSR Weekly Reports” in the MS Excel spreadsheet. (The STATA version of the dataset includes only this tab.) In order to contextualize the primary data, a number of annexes are included in additional tabs. These include data from National Archives Coast Guard Record Group (Intelligence Section and Commandant’s Correspondence Section) as well as from US Department of Justice, the Wickersham Report\textsuperscript{4} and Brookings Institution reports.

A) **Organizational Learning.** This database catalogues competing innovations of the Rum-Running network and the Coast Guard during their struggle. This may be used to examine impacts of competitive innovation and competitive sense-making on the course of the campaign. This is derived from multiple sources, including USCG Correspondence,\textsuperscript{5} rum-runner autobiographies\textsuperscript{6} and secondary sources.\textsuperscript{7}

1) **Name** – Short name for the innovation.
2) **Player** – US Government, Rum-Runners, or None of the Above.
3) **Type** – Category of Innovation.
   - *(Organizational, Geographical or Technological)*
4) **Class** – Sub-category of Innovation (Varies.)
   - *Tech: Performance, Active Detect/Stealth, Passive Detect/Stealth*

\textsuperscript{5} NARA RG 26 - Entries 82(A), 97, 106(B), 134, 178, 179, 249
\textsuperscript{6} Van de Water, *The Real McCoy*, most others didn’t talk about design as much.
\textsuperscript{7} Malcolm F. Willoughby, *Rum War at Sea* (Fredonia Books (NL), 2001).
- Org: Legal, Institutional, Structural

- Geo: Static (fixed sanctuary region), Dynamic (‘places in between.’)

5) Description – Self-Explanatory.

6) Countering – What the innovation is built in response to.

   - (ECP = Emergent Complex Process)

7) Example – The archetypal version of the innovation.

8) Year – When that version emerged.

9) Description – Self-Explanatory.

10) Source – Documentation for the archetype.

11) Timeline Variables – Description of various stages in innovation life cycle, by form, data and innovator for each stage.

   - (Initial Encounter, First Successful Model, Large-Scale Adoption, Fully Mature/Institutionalized, Sunset/Transition.)

12) Evaluation Variables – Assessment of the utility of the innovation in the campaign.

    Tactical/Operational evaluation looks at the effectiveness of the innovation for its intended goal, using SWOT Analysis. Strategic evaluation considers the efficiency of the innovation in light of total program cost.

B) Department of Justice, Bureau of Prohibition Reports. This database records various Department of Justice costs for Prohibition enforcement, along with measures of effectiveness for the campaign. It is transcribed from official GAO reports from 1920 through 1933.\(^8\) It is important to note that these numbers do not include numbers from the Coast Guard; therefore, these are more effective as context for the overall campaign than as a direct cross-reference to

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\(^8\) Ibid.
the main dataset. Note that most of the institutional infrastructure of the Bureau of Prohibition transitioned into the Alcohol Tax Unit following the repeal of the Volstead Act, (later the Bureau of Alcohol, Tobacco and Firearms, or ATF) and therefore this data should be contiguous with Alcohol Tax Unit records from 1933 onward. Also note that control of the Prohibition Unit transferred between the Department of the Treasury and the Department of Justice several times in various forms, but these data accounts for these changes.

1) **Year** – As described.

2) **Total Appropriations** – As described.

3) **Enforcement Cost** – As described.

4) **Collections, Court Fines** – Funds gained through fines relating to Volstead Act.

5) **Collections, Tax Penalty** – Funds gained through tax penalties as above.

6) **Collections, Seizure Sale** – Funds gained through the sale of goods seized under the Volstead Act.

7) **Collections, Total** – Total funds gained through all penalty sources.

8) **Seizures, Distilleries** – As described.

9) **Seizures, Stills** – As described.

10) **Seizures, Distilleries + Stills** – As described.

11) **Seizures, Still Worms** – As described (still worm = condenser coil.)

12) **Seizures, Fermenters** – As described.

13) **Seizures, Spirits (Gallons)** – As described.

14) **Seizures, Malt Liquor (Gallons)** – As described.

15) **Seizures, Wine, Cider (Gallons)** – As described.
16) **Seizures, Cars** – As described.

17) **Seizures, Boats** – As described.

18) **Seizures, Number** – As described (total seizures.)

19) **Seizures, Total Value** – As described.

20) **Seizures, Agents Wounded in Action** – In course of duty.

21) **Seizures, Agents Killed in Action** – In course of duty.

22) **Seizures, Arrests** – As described.

23) **Prosecutions, Commenced** – As described.

24) **Prosecutions, Terminated** – As described.

25) **Prosecutions, Convictions** – As described.

26) **Prosecutions, % Convicted** – As described.

27) **Prosecutions, Acquitted** – As described.

28) **Prosecutions, Dismissed** – As described.

29) **Prosecutions, Guilty Pleas** – As described.

30) **Prosecutions, Trials** – As described.

31) **Prosecutions, Pending Close** – As described.

32) **Prosecutions, Fines Imposed** – As described.

33) **Prosecutions, Average Fine** – As described.

34) **Prosecutions, Jail Sentences** – As described.

35) **Prosecutions, % Conv->Jail** – Percentages of convictions to jail, not counting suspended, paroled or probated sentences.

36) **Prosecutions, Average Sentence for all Convicted** – As described.

37) **Prosecutions, Average Sentence for all given Jail Time** – As described.
38) **Agents, Total** – Number of Prohibition Agents (not counting USCG.)

C) **Long-Term Boarding/Seizure Trends.** This database transcribes a document from the USCG Archives, describing the total number of ships boarded and seized by the US Coast Guard (and predecessor services) from 1896 through 1938. ⁹ All categories are as described.

D) **Hovering Graph.** This database transcribes a document from the USCG Archives, describing the number of ships hovering off the Eastern Seaboard by month from February 1929 through October 1935. ¹⁰ These data are used in the imputed graph in the main dataset. All categories are as described.

E) **Imputation Estimation Worksheet.** This tab describes the framework behind the imputed graph in the main dataset. It is only useful for examining and critiquing the assumptions behind this imputation, and bears no further explanation.

F) **Yearly Summaries.** This dataset collects a few fragmentary reports from the USCG Archives,¹¹ which describe liquor imports and exports from various foreign ports from 1928 until 1934; it also contains one entry describing the residual rum-running fleet in 1935. All categories are as described.

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⁹ RG 26 Entry 178, 1933-1940 Records.  
¹¹ RG 26 Entry 178.
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