

QUANTIFY THIS: STATISTICS, THE STATE, AND GOVERNMENTALITY

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ABSTRACT

This thesis seeks to examine the following question: *what is the relationship between national statistics and governmental control?* To explore this question, it will examine three historical case studies, all taking place in Western Europe in the 18th and 19th Centuries. These historical case studies will focus on the beginnings of censuses in Great Britain, Germany and France. They exhibit that the relationship between national statistics and state control is complex and non-linear, and that the absence of statistics is also a means through which very strong governmental power can be asserted. Overall, this paper advocates for a greater societal awareness of the complicated implications of national statistics.

The writing of this thesis would not have been possible without David Ribes – a most excellent advisor, mentor and friend.

This thesis is dedicated to J.P.

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Statistics has helped determine the form of laws about society and the character of social facts. It has engendered concepts and classifications within the human sciences. Moreover the collection of statistics has created, at the least, a great bureaucratic machinery. It may think of itself as providing only information, but it is itself part of the technology of power in a modern state.

– Ian Hacking

PREFACE

What is the relationship between national statistics and state control? This is not a question we often ask ourselves as we're riding in a train, bus, car, airplane, etc., staring out the window and contemplating our days. I began thinking about this question last summer, after attending a statistics camp. ICPSR, or the Inter-university Consortium for Political and Social Research, is a month-long program that helps social scientists to better understand the mathematical and statistical concepts behind quantitative methodologies.

The courses I took at this summer camp were not meant for scholars who study the societal and ethical implications of statistical practices. Rather, they were meant for people who actually conduct this data collection, analysis, and publication. I could have been sitting in large classrooms with future directors of the U.S. Census, or future professors of quantitative sociology who may instruct some future director of the U.S. Census in 2092. One class that I took, "Methodological Issues in Quantitative Research on Race and Ethnicity," really stuck with me. The class itself was very liberal in mindset. Its purpose was to teach us that it is impossible to standardize classifications of race and/or ethnicity. There will always be someone (or, more

likely, many someones) who are not properly or fairly represented by these classifications. However, the class also taught me that it is extremely unproductive, when conducting quantitative research, to ask people to write their ethno-racial identity in a free-form text field. Everyone will be classified, but nothing will be standardized. Now, when I look back on it, I think it was advocating for a more thoughtful way of thinking about classification in national statistics, and one that could be practically applied to these issues of classification. Moreover, it was teaching us about the impossible complexity inherent in these issues; inherent when state institutions turn people into data, and data into statistics.

I walked away from this class feeling frustrated, and wondering if it was even possible to represent a population fairly. I began thinking a lot more about the processes by which people become national statistics, and about what a government's various intentions could be in the midst of applying categories to a population. This made me curious about the history of censuses, and the debates that occurred within these organizations at their inception.

You might notice that this thesis focuses mainly on dialogues between governmental statisticians. This is purposeful. I am still interested in civil reactions to governmental counting and categorizing, of course. Maybe I will write about this in another thesis. However, thinking about the impossibility of statistical decisions at the governmental level made me curious about how these types of decisions were made when governmental statistics first became a discipline. On that note, I will end this preface with one of my favorite Ian Hacking quotations, for you to ponder as you read on. "We still live in the shadows of these men," he says – these men being the earliest governmental statisticians of the 18th- and 19th-centuries:

"Our governments classify us, lodge us, tax us according to the systems that they began [...]"

INTRODUCTION

What is the relationship between national statistics and state control? This is not a question with a simple, linear answer. However, the words that follow will attempt to clarify this relationship. Before I go any further, I'm going to provide some operational definitions for this thesis – or some ways of thinking about words like “statistics” and “population.” These words conjure a plethora of meanings, but they have very specific definitions within the realm of this thesis.

The Merriam-Webster dictionary defines “statistics” as “a branch of mathematics dealing with the collection, analysis, interpretation, and presentation of masses of numerical data.” However, as I will exhibit in later chapters, statistics have not always been massive or, for that matter, quantitative. Therefore, I offer up a new definition of “statistics” for the following pages: *the processes by which a state collects, analyzes, interprets and presents data about a **population**.* So, what is “population”? In the context of this thesis, a population is created when a census (or a statistical arm of the state) devises the categories by which it will consider a group of people under its governance, organizes a set of questions around those categories, and then distributes these questions in survey form to a population (this could be by mail, by email or, more likely in

the case of the upcoming historical case studies, by foot). The people answering these surveys check the boxes that they feel describe them best, and then send their finished surveys back to the census. The collection of answers from these surveys, all tallied and totaled, becomes *the population*. Therefore, when I speak of *the population*, I am not referring to everyone in the world, everyone in the U.S., or everyone in a given country at a given point in time. I am speaking, specifically, of this tallied portrayal of a given civilization. The population isn't an exacting reality; instead, it is one possible representation.

Representations are complicated animals. Therefore, I will exemplify a representation with a short allegory. Suppose that two people argue about who gets to wash the household dishes next. Person 1 claims that of course, they washed dishes for ten days straight; it is not their turn. Person 2 claims that naturally, they washed dishes everyday for the past two weeks, and it definitely, absolutely, in no way could be their turn. What is the truth of this situation? There is no way to know (except to be an all-knowing, omnipresent being). If I want to draw conclusions about what happened, I rely on Person 1 and Person 2's stories, and deduce from there. Each story is a representation of the situation at hand. So, too, are representations of populations. Because it is impossible to be an omnipresent being – to know what exactly is going on with every single person in a given civilization, and to grasp the vastness and complexity of a civilization's dynamics – states rely on national statistics to represent what 19th-Century German statisticians called “the history of the present” (Hacking 383; 1987).

Additionally, I'd like to take a moment to explain what I mean by “categories.” In the context of this research, categories are not “natural kinds” (Hacking 352; 1995), or descriptions derived from some sort of biological category (like male or female) – although, arguably, there is a great

deal of debate about whether or not there are only two sexes (Fausto-Sterling; 1993). However, this is not something that the scope of this thesis will address. By categories, I mean “human kinds,” or “kinds about which we would like to have systematic, general, and accurate knowledge; classifications that could be used to formulate general truths about people; generalizations sufficiently strong that they seem like laws about people, their actions, or their sentiments” (Hacking 352; 1995). These categories are made up by people – for people – to describe a variety of human conditions. Human conditions, in the view of a census-like entity, are typically things like race and ethnicity (as described above), income bracket, occupation, highest educational degree, etc. These categories do not only arise when it’s time to fill out census forms: they are part of our identities. They can have great influence over the ways in which we perceive others, and ourselves; the ways in which others perceive themselves, too.

This brings me back to my original question: *What is the relationship between national statistics and state control?* The aforementioned points also cause me to raise a second question: *Why is understanding the relationship between statistics and state control important?* Taking a closer look at this relationship is important because our identities depend on it. Indeed, the very infrastructure of society is still dependent, in some ways, on the statistical categories developed by statesmen hundreds of years ago. Ian Hacking makes this point in his essay, *How should we do the history of statistics?* A lot can be learned from the interactions between these early governmental statisticians – by better understandings their viewpoints, and the conditions under which those viewpoints developed.

The first chapter of this thesis will be a review of the literatures most relevant to the following question: what is the relationship between national statistics and control? This chapter will

explore the ideas of Michel Foucault, Nik Rose, Colin Gordon, Ted Porter, Ian Hacking, Sarah Igo, and Alain Desrosières. Furthermore, it will introduce Foucault's concept of governmentality, a technology of regulatory practice used to organize and control a citizenry. This chapter will explain the relationship between governmentality and national statistics. Specifically, Foucault saw national statistics as being a means through which a government can organize, group and control its citizens. Nik Rose took this idea a step further, by positing that national statistics' inception into society is performed by government, but that societies themselves reinforce and perpetuate these statistical ideas.

In addition to writings on governmentality, the literature will introduce Foucault's brief history of government, from the Middle Ages onward. It will also outline Ted Porter's history of national statistics and population-counting. Although national statistics and governmentality have existed in unison since the late 18th Century, governments have been counting their peoples since ancient times. I will also delve further into the implications of national statistics. By implications, I mean the categorization of society, and the ideas of averages and normalcy that accompany this categorization. These ideas have been lightly explored by Sarah Igo and, to a greater extent, in various essays by Ian Hacking.

The literature review will explore some of the most weighty ideas contained in this thesis. The three case studies that follow explore these same ideas empirically and historically. Therefore, I highly recommend spending some time with this chapter. It will illuminate - and tie together - my most seminal arguments.

The next three chapters of my thesis are historical case studies; ones that take place in 19th-Century Great Britain, 18th- and 19th-Century Germany, and 18th- and 19th-Century France. I

chose these case studies because they all take place in countries that are in close proximity to each other – and in the 18th and 19th centuries. Since my approach is comparative, I wanted to remove variables of extreme socioeconomic difference, time, and geographic distance from my comparisons (in this way, perhaps I am thinking like a statistician). Also the ideologies of Adolphe Quetelet, a popular Belgian statistician at the time, were circulating around Great Britain, Germany and France. Statisticians in these countries positioned themselves in agreement with – or in opposition to – Quetelet’s teachings, as their influence crossed the national boundaries of all three countries. Quetelet’s philosophies are a common thread that runs through all three of these historical case studies.

Chapter 2 will take a closer look at a newly-industrialized Great Britain. Great Britain’s case study is perhaps most representative of the governmentality dynamics described in Foucault and Rose’s essays, *Governmentality* and *Governing “advanced” liberal democracies*, respectively. The British were, ideologically, very resistant to the idea of centralized government. However, the rampant disease that resulted from industrial overpopulation pushed both statesmen and the general population to accept national statistics. In fact, the installation of statistics in British society saved lives (Hacking 184; 1981). However, the organization and control it applied to British society is highly representative of governmentality. In a way, this is also an example of how governmentality, although frequently interpreted with a negative connotation, does not have purely negative implications. It is not difficult to simplify Foucault’s writings on governmentality by drawing the conclusions that national statistics mean more state control, that more state control maliciously hampers individual freedoms, and that less individual freedom is indeed negative. This chain of events is just one possible fate of a more centralized government;

one interpretation of the control dynamics between the state, its national statistics, and its representative population. British people - not just statesmen, but everyday, middle-class people - were supportive of the advent of a British census bureau. Not only were they supportive, but they were also cooperative and participatory. I argue that, without their participation, the census bureau would not have been able to exist. This feedback from British society is also representative of Nik Rose's hypothesis about governmentality: that statistics are installed by governments, yet perpetuated by citizens.

18th- and 19th- Century Germany is the subject of Chapter 3. Germany is the birthplace of national statistics as we know them. This chapter will describe the evolution of national statistics in Germany, from a secretive process only performed by ministers, to a public - and publishing - arm of the government. Additionally, German ideologies about national statistics were very different from those of Great Britain or France. Germans believed in something called *Staatsmerkwürdigkeiten*. This literally means "the oddities of a population," and suggests that there will always be quirks of populations – quirks that evade the quantifying clutches of national statistics. For this reason, Germans were very resistant to the idea that national statistics were the only way to accurately represent a population. This case study exemplifies a government that is aware of its own power to misrepresent a population through quantification. In light of this, I pose the following question: if a government is painfully conscious of its own capacity to assert power through misrepresentation, is there still a control dynamic at play? I argue that this German case study provides, for the most part, a situation that does not exemplify dynamics of governmentality. However, at the end of the chapter, German statesmen Otto von Bismarck cuts ties with the bureau of statistics, as he believes that their globalizing viewpoints

do not fit well with his style of rule. This sets the state for a major idea in the following chapter: that the decision to eliminate national statistics is one of control as well.

The third case study – and the 4th Chapter – examines 18th- and 19th-Century France at the time of the French Revolution. During this chaotic time, French officials believed that national statistics were a perfect way to apply some order to societal messiness. However, Napoleon's autocratic regime intercepted - and interrupted - this mindset. Eventually, Napoleon ordered the closing of the French statistical bureau. The closing of the bureau led to complete opacity for the Napoleonic Wars: since no one was counting the French population, no one knew just how many French people there were, or how many were dying in the Napoleonic wars. It took many years for historians to discover that the Napoleonic Wars killed nearly one million French (Bergeron 118; 1981). This case study shows us that there is not a direct relationship between statistics and control. Rather, by doing away with statistics, Napoleon was asserting a very high level of governmental control. This provides an interesting clarification to Foucault and Rose's assertions about governmentality. Here, a massive amount of control is asserted by removing national statistics, and the transparency that accompanies them. In this case study, statistics are not a medium through which governmental power acts: instead, their absence becomes the medium.

In Chapter 5, I will compare and contrast all three case studies. Additionally, I will discuss the following major ideas put forth by these case studies: That a population's voice in national statistics can play different roles in a control dynamic, and that high levels of control can exist through the absence of national statistics. I will also elaborate on the idea that the relationship between control and national statistics is situational, and pull in some other examples from the three case studies that support this statement. For instance, the German treatment of national

statistics was the complex result of German cultural, political, economic and social events unraveling, as were the French and British national statistics.

In light of all of that, I am prompted to ask the following question: if the relationship between national statistics and control is so circumstantial, then why even bother studying it? If we can't use these case studies to predict the effects and implications of national statistics on a society, then why are we talking about them? I argue that, although no two situations are alike, we can utilize these historical examples to better understand the control dynamics inherent in the advent - or absence - of national statistics today. Even if I can't precisely match the circumstances surrounding German *Staatsmerwürdigkeiten* to those of the course I took last summer (which I talked about at the very beginning of this introduction), I can take something away from this comparison: this 19th-Century German idea is very similar to something that I learned in Ann Arbor, Michigan this summer. The ethical issues surrounding national statistics, in many ways, haven't changed. Therefore, we can derive important lessons about the nature of national statistics from these historical case studies, and apply them practically to modern circumstances. It is by no means a simple or methodical solution. However, I believe that it is a thoughtful one and, ultimately, a necessary one.

CHAPTER I

LITERATURE REVIEW

In the previous chapter, I posed the following question: *what is the relationship between national statistics and governmental control?* The following literature review amasses a framework of scholarly thought relating to this question. First, I'll examine the history of discursive knowledge in a Foucauldian framework. Specifically, this is the process by which a field like national statistics becomes a field of study, or an *individualized discourse*. This is a particularly interesting concept to explore in relation to national statistics. After all, statistics is itself an individualized discourse (ex: majoring in statistics), in addition to being a discipline within disciplines (ex: using quantitative research methods within government). Since my main goal is to explore the relationship between statistics and control in government, I focus on the latter.

Secondly, I'll introduce the concept of *governmentality*, which is also Foucauldian. *Governmentality* is a fairly open-ended concept, which can be understood and interpreted differently depending on context and approach. However, within the context of this thesis,

national statistics is just one possible medium through which a ruling body can organize and categorize a citizen class. Foucault lays out a history of ruler ship, leading up to *governmentality* and the advent of national statistics, which, according to his framework, go hand-in-hand.

However, Foucault does not delve into a history of population-counting, categorizing, and the benchmark statistics that are subsequently derived. For this reason, I will (briefly) walk through a history of national statistics, as understood by historian of statistics Theodore Porter. Lastly, I will examine the notion that national statistics are embedded in our lifestyles, from the way we conceive our identities to the ways in which we are perceived by others. These thoughts, all from Ian Hacking's essay *How should we do the history of statistics?*, cut to the heart of the "relationship between national statistics and control" question. After all, the processes by which counting and categorization affect human identity is a manifestation of this control that occurs at the personal level. In addition to these major works by Foucault, Porter and Hacking, this literature review is speckled with thoughts and analyses by Sarah Igo, Anders Hald, and Alain Desrosières.

"Science of the State" as an Individualized Discourse

What made national statistics a favored way of understanding populations? How do state statisticians think differently than people in other modes of research? What political, cultural, and social values are embedded in national statistics? These are all Foucauldian questions, and they are addressed in Foucault's *Politics and the study of discourse*. "What are these curious entities," he asks, "which one believes one can recognize at first glance, but whose limits one would have some difficulty defining" (54; 1968)? Foucault sees disciplines like statistics as

constantly evolving, constantly mutating things (57; 1968): this is something they all have in common. Additionally, he notes that an individualized discourse must have some type of unifying view of the world - not a singular object of study or a singular theory, but an integrated approach to empirical questions. He calls this quality *formation*:

What individualizes a discourse such as political economy or general grammar is not the unity of its object, nor its formal structure, nor the coherence of its conceptual architecture, nor its fundamental philosophical choices; it is rather the existence of a set of rules of formation for *all* its objects [. . .] *all* its operations [. . .] *all* its concepts [. . .] *all* its theoretical options (54; 1968).

The property of *formation* can be seen as a protocol through which one approaches questions or problems. For instance, a biologist might use a different protocol to answer the question “Why do we love?” than might a psychologist. While a biologist might wonder about love in the context of an organism’s quest to pass genetic material from one generation to the next, a psychologist could ponder love’s effects on the psyche, or how early childhood development influences our idea of love later in life. This protocol has everything to do with how these biologists and psychologists were trained to look at the world through the eyes of their discipline. Foucault believes that an individualized discourse is a certain construction of reality. Furthermore, he asserts that a given discipline’s methodology has not been directly influenced by the political climate in which it was established. Instead, institutional values affect a discourse’s “system of formation” (68; 1968). By this, Foucault means to describe administrative processes. In the case of this topic, these processes would be things like survey creation, institutional infrastructure, and interactions between statisticians. The case studies presented in this thesis involve developments in all of these processes. These are the things that so influence the

categories that are developed to describe people; the means through which the state hopes to better understand a population.

Foucault sees an individualized discourse - or a field of study - as being the complex result of the conditions under which it was developed (67; 1968). This point is of supreme importance when thinking about the British, German, and French case studies that lie ahead. Variations in national statistics from country to country can't directly be explained away by culture. However, the question remains: specifically, what role does culture play in the building of a discipline?

If indeed there is a link between political practice and [. . .] discourse, it is not, it seems to me, because this practice first changed men's consciousness, their way of perceiving things or conceiving of the world, and then finally the form of their knowledge and its content; nor is it because it was initially reflected, in a more or less clear and systematic manner, in concepts, notions or themes which were subsequently imported into [a discourse]. The link is much more direct: political practice did not transform the meaning or form of [...] discourse, but the conditions of its emergence, insertion and functioning [...] (67; 1968).

By this, Foucault means that there *is* way in which to conceive of the connections between culture and field of study. Culture does not have immediate influence over the field itself, but it does shape the conditions under which an individualized discourse emerges. Each country from each case study in the following chapters - Great Britain, Germany and France - has not only its own history, but also has its own governmental style that developed as a *result* of that history. In this way, the government of each country becomes a world within a world, having something to do with the cultural practices of its home state, yet also evolving to be its own entity. Additionally, the dialogues that 19th-Century French statisticians had about the responsibilities of national statistics to itself, its practitioners, and its objects of study (or its

citizens) were the emergent result of each statisticians personal viewpoint. This viewpoint in the result of years of conditioning, education and experience that are somewhat related to culture and also somewhat related to the individual. In practice, this is an example of the variegated complexity that Foucault conjures when he speaks of the strange dynamic between cultural climate and individualized discourse.

Creation of the Aggregate as an Instrument of Governmentality

The state itself has undergone its own series of evolutions. In Foucault's *Governmentality* lecture, he expounds on the development of Western governments, and how they came to be so focused on the aggregate. Understanding why - and how - these governments have evolved to be population-centered is fundamental to understanding how statistical practices have situated themselves in the political realm. Foucault asserts that the development of statistical practice in the 18th century was of crucial importance to the very function of government (and therefore to our understanding of its function):

It was through the development of the science of government that the notion of economy came to be recentered on to that different plane of reality which we characterize today as 'economic,' and it was also through this science that it became possible to identify problems specific to the population ... 'statistics' which, in mercantilist tradition, only ever worked within and for the benefit of a monarchical administration that functioned according to the form of sovereignty, now becomes the major technical factor, or one of the major technical factors, of this new technology (101; 1978).

Here, Foucault explains the evolution of government's focus: from the organization of territory and money (although, arguably, those are still important too) to people. National statistics are the prominent medium through which a governing body in the Western world

reaches a population. Foucault's hypotheses about *governmentality* imply that modern governments and national statistics have co-evolved together. In this way, they have become impossible to separate from each other (an idea I'll explore later in this literature review, in Ian Hacking's writings).

Before the 16th century, Europe was characterized by feudalism. This form of government was most intent on ruling territories, and not on ruling people. Then, according to Foucault, there was a period of time between feudalism and modern-day government – between the 16th and 18th centuries - that was marked by a fixation on what he calls the “art of government” (87). During this period, rulers were heavily focused on how they could best govern themselves and, subsequently, how they could best govern others. For instance, Foucault cites 17th-century French academic François de La Mothe Le Vayer, who wrote extensively on these questions of introspection and balance. La Mothe Le Vayer believed there were three basic types of governing, and that achieving excellence in rulership had to do with finding a harmonious balance between them. He postulated that these three varieties of ruling-style included the art of self-government (morality), the art of governing a family (which eventually morphed into what we now know to be economics) and, finally, the science of ruling the state (politics). At this period of time, the state and the family were seen as being extremely interconnected. If a ruler governed themselves well - or rather, if they were moral in their own right - then they were fit to govern others. This is referred to as *upwards continuity*. Additionally, if a ruler did indeed govern others properly, then they were seen as a righteous father-figure, fit to be a breadwinner and a promoter of family values. This is called *downwards continuity* (Foucault 91; 1978).

Foucault points out that, instead of focusing on the ruling of territory (as feudalism had), this new form of government had evolved to promote order *through* prudence and family values. Here, the family was seen as the most basic unit of society. This was the first time that ruling classes viewed their citizenry as “a complex of men and things,” says Foucault. Out of this view, a new definition of government emerged:

Government is defined as a right manner of disposing things [. . .] to an end which is ‘convenient’ for each of the things that are to be governed. This implies a plurality of specific aims: for instance, government will have to ensure that the greatest possible quantity of wealth is produced, that the people are provided with sufficient means of subsistence, that the population is enabled to multiply, etc. (95; 1978).

The focus of governments and rulerships at this time was to encourage each family to act in a way that was *beneficial to the population as a whole*; to simultaneously maximize food and wealth while cultivating population-growth. Although it was family-centric, this incarnation of government had the interests of the aggregate in mind. This would ultimately set the stage for the population-focused government of the 18th century (and onward). This is the aggregate-based whose overall dynamic is that of *governmentality*. As the evolution toward *governmentality* progressed, the family-focused matters that once reigned supreme (ex: How much currency is a family bringing in each year?) became what we now know to be economic issues.

All of this begs the following question: how could *economics* have been a governmental dynamic? The inputs and outputs of a family (household income, spending, etc.) are all economic themes. Conversely, the traits that national statistics measure (race/ethnicity, occupation, income bracket, highest educational degree, and so forth) are collected at the individual level, and turned into averages at the aggregate level. Foucault is concerned with this

paradoxical unit of analysis, and also with the government's preoccupation with excavating the "truth" about these individuals and populations (Gordon 8; 1991). And while Foucault was not necessarily interested in prescribing a better way of ascertaining knowledge about a civilization, he did feel it necessary to draw our attention to these concerns through theoretical discussion, as this "truth" has the power to assign limits to individual freedoms (Gordon 6; 1991).

So, Western governments - once explicitly familial and implicitly aggregate - shifted to be explicitly population-based. But what caused this shift? Consideration of interests of the aggregated population came to the forefront of governing when the state recognized that it was necessary to understand things like death rates, causes of death, and the identification and spread of diseases. Collecting data and performing quantitative analysis on these health-related patterns was integral to the well-being of the whole. After all, a population cannot continue to grow wealthier and reproduce if it is unhealthy (or dead):

[. . . statistics] gradually reveals that population has its own regularities, its own rate of deaths and diseases, its cycles of scarcity, etc.; statistics shows also that phenomena that are irreducible to those of the family, such as epidemics, endemic levels of mortality, ascending spirals of labour and wealth; lastly it shows that, through its shifts, customs, activities, etc., population has specific economic effects: statistics, by making it possible to quantify these specific phenomena of population, also shows that this specificity is irreducible to the dimension of the family (99; 1978).

As Foucault says, family cannot be the smallest unit of measurement in studies of morbidity and mortality. These analyses *require data from the individual while privileging the whole*. Rather, data on death and disease are collected at the individual level, but it is really the aggregate of all of this data that comes to matter most to the state. At this juncture, family is no longer a model of government. Instead, says Foucault, it is an "instrument" through which the

government collects data about death, disease, sexuality, etc. (Foucault 100; 1978). Therefore, the rise of governmentality co-evolved with the rise of statistical thinking in the state.

Sociologist Nikolas Rose provides some other interesting frameworks through which to think about dynamics of *governmentality*. For instance, he talks about the relationship between *governmentality* and the need to make population research “practical” (147; 1996). This is exemplified in both the French and British case studies. For instance, statistical research was seen as a *practical* way to derive order from chaos at the time of the French Revolution and during post-industrial Great Britain. Both of these periods of time were marked by confusion and disorder, and it was comforting to extract neat, quantifiable information from the messiness.

Additionally, Rose posits that governance occurs through the advent of social norms, which in turn are derived from statistics. That is, the categories that national statistics create in turn create lifestyles, identities, etc. Therefore, while governments create these categories, they are carried out and perpetuated by the population at large (Rose 145-146; 1996).

National Statistics: A Discipline and A History

As I mentioned before, Foucault does not fully delve into the history of population counting, or the history of quantitative practices. His philosophies are based in the relationship between government and methods of organizing, categorizing and controlling populations. His thoughts set the stage for some more pointed questions about the *specific* development of national statistics. For instance, how did national statistics develop, both historically and as a

discipline? Historian of statistics Ted Porter talks about this in his book *The Rise of Statistical Thinking: 1820-1900*, as does statistician and historian Anders Hald in *A History of Probability and Statistics and Their Applications Before 1750* (whose work we will only explore very briefly).

Governments have been counting their people since ancient times to take stock of military and territory (Hald 81; 2003). Additionally, regular censuses were taken throughout the era of the Roman Empire. However, after the Roman Empire fell, there weren't consistent censuses for quite some time. In both the Middle Ages and the Renaissance era, there were periodic surveys – generally economy-related. It wasn't really until the start of the 18th-Century that censuses were taken regularly in Europe (Hald 81; 2003) – or that *statistics* got their name, or were thought of in a disciplinary way. Thinking of national statistics in terms of its development as a discipline also relates back to Foucault's thoughts on individualized discourses from the previous chapter. Counting in ancient times, the Middle Ages and the Renaissance are all examples of national statistics in a pre-disciplinary phase. Although statesmen in these earlier examples might not have referred to their practice as *national statistics*, or a discursive body of knowledge, these early forms of population counting were the foundations upon which the disciplinary national statistics that we know today were built.

There is not complete agreement about the time and place in which national statistics was established as a *discipline*. Some historians believe that governmental statistics got their name in Florence and Venice, during the Italian Renaissance, or that the first documented usage of the word “statistics” dates back to 17th-Century England (Hald 82; 2003). However, most of the relevant literature for this thesis assigns national statistics' origin to 18th-Century Germany.

Specifically, two different words for statistics can be traced back to this era. The academic discipline *Statistik* – a term created by German historian and philosopher Gottfried Achenwald in 1749 – was a historical discipline (Porter 352; 1986).

However, Porter notes that it is impossible to put a finger on one true origin of *Statistik*, as it is a melding of many disciplines wrapped into one. Therefore, it is somewhat inaccurate to say that Achenwald was its true inventor. Concurrently, the word *Staatwissenschaft*, meaning “science of the state,” also has its origins in 18th-Century Germany (the exact year is unclear). *Staatwissenchaft* was “a descriptive and non-quantitative framework of reference and terminology offered by university professors to princes of the numerous German states” (Desrosières 179). German monarchies would collect qualitative demographic data on their kingdoms – information about the histories, cultures and religions of groups of people.

Statistics did not become quantitative until the 1850s or the 1860s. Germans were reluctant to think of this qualitative way of knowing a population as something mechanical – as something “...that flattened the delicate social contours and *Staatsmerwürdigkeiten*” (Porter 352; 1986). A lot can be inferred about the German mindset on statistical practices from the word *Staatsmerkwürdigkeiten*. The word *Staat* means “state,” and the word *merkwürdigkeiten* means a condition of weirdness or quirkiness. Quite literally, this translates to the existence of quirks or anomalies of a population. Germans were afraid that these oddities would become lost in a systematic categorization and quantification.

In 19th-Century Germany, statisticians – now working in a more established discipline – would debate the etymology of the word *Staat*. The most conspicuous interpretation of the

German word *Staat* is, of course, “state.” However, another popular clarification followed *Staat* back to its Latin incarnation, *status*, which has multiple meanings. Says Porter,

“...the Latin *status* can refer either to the body politic or to the present condition of something...Accordingly, statistics might either be the descriptive science of states or a general method of characterization, applicable to any object at all” (352; 1986).

In essence, all of the ideas that went into the formation of the *concept* of statistics are not necessarily about the quantification of people, or people living within a civilization. Statistics – even in their earliest stages – could really be about the organization of anything identifiable to humans. This etymological understanding of statistical practices illustrates their versatility, and the confusion that arises subsequently.

Embedded Statistical Practice

“Almost no domain of human enquiry is left untouched,” says Ian Hacking, “by the events that I call the avalanche of numbers, the erosion of determinism and the taming of chance” (189; 1981). In his essay, Hacking discusses both his wonderment and concern with the embeddedness of statistical practices in our everyday lives. One of Hacking’s biggest worries is the looming presence of *likelihood*, and the *sillage* of its philosophical predecessor: determinism.

Both French and British statisticians (including the aforementioned William Farr), as we will read later on, were greatly influenced by determinism. Determinism is the ideological brainchild of Belgian statistician Aldophe Quetelet. Quetelet believed that statistics would reveal immutable laws of society (Hacking 185; 1981). To illustrate how this works, I’m going to provide a completely made up example:

If a statistician in 19th-Century Great Britain found that 20% of all young men held jobs as chimney sweeps, Quetelet would say that, no matter what happened, 2 out of 10 young men were destined to sweep chimneys. He would call this a law of human nature. This philosophy is *determinism*. In light of this, it's somewhat ironic that Farr and other proponents of statistical practices were so influenced by Quetelet. After all, they supported things like the census and public health statistics because they wanted to understand the phenomena behind things like poverty and sickness. The subsequent hope was that this feedback would encourage individual actors to adjust their behavior so that there would be less poverty and less crime. However, if the statistics revealed that 60% of the population was poor, what, then, could be done if this poverty was immutable? If it was a law that 60% of the population would, regardless of any policy change or collective effort, suffer from poverty, why devote time to the investigation of this law?

According to Hacking, there is an inverse relationship between determinism and imposed governmental constraint: "The less the determinism, the more the possibilities for constraint" (194; 1981). That is, the more immutable a statistical finding is, the less room there is for the government to impose categorizations itself. It is impossible to say for certain, but perhaps Quetelet's teachings were so appealing in that they did not leave room for state imposition. This is somewhat of a paradox: on one hand, people behave the way they do, therefore no entity can assert new policies by way of statistical practices; on the other hand, there are societal ills that must be diagnosed by statistical practices and subsequently altered. Quetelet's ideologies are a common thread in all three case studies: despite their popularity in Great Britain and France, they were vehemently opposed in Germany. It seems that statisticians positioned themselves ideologically in accordance (or discordance) with Quetelet.

Another example of determinism in practice – which will not be addressed in either of the three case studies, but is important to the history of statistics – is 19th-century French sociologist Émile Durkheim. Durkheim “was telling us that there are irreducible statistical laws of society” (Hacking 185; 1981):

It was long thought to be possible that statistical laws are epiphenomena deriving from non-statistical facts at the level of individuals. By the 1890s, Durkheim had the opposite idea, urging that social laws act from above on individuals, with the same inexorable power as the law of gravity (182; 1981).

Ultimately, social (and state) statisticians’ views eventually shifted away from that of determinism, although the time following this shift will not be covered in this thesis. Hacking refers to this as the “erosion of determinism” (185; 1981). However, he argues that the vacancy left by deterministic philosophies was not quite replaced by those of free will:

Although determinism had been eroded, it was not by creating some new place for freedom, indeed we might say that the central fact is the *taming of chance*; where in 1800 chance had been nothing real, at the end of the century it was something ‘real’ precisely because one had found the form of laws that were to govern chance (185; 1987).

Before, if a statistic showed that 20% of all young British men were chimney sweeps, then statisticians would infer that 20% of all British men *must* have those tendencies. Now, that same 20% indicates *probability*: that 20% of all British lads are *likely* to sweep chimneys. Certainly, probability does not imply the same type of immutable characteristics displayed by determinism. However, it is not quite free will. If anything, it is a nuanced sort of determinism: not definitive, but likely. This is the “taming of chance” about which Hacking is so concerned.

Another concern of Hacking’s is that the “human kinds” by which we currently define ourselves and our behaviors were created for the purpose of data collection many, many years

ago (182; 1981). Hacking uses the example of recidivism to illustrate this. Recidivism is the idea that someone will commit a second, third, fourth, fifth, or umpteenth crime after they have been punished or imprisoned. The very concept of recidivism didn't exist until social scientists began to study criminal behavior quantitatively in the early 1800s. Hacking also brings up the idea of normalcy. This "statistical meta-concept" (183; 1981) that wasn't on anyone's mind until statistical practices - and the resulting Gaussian distributions and means, medians and modes - told us what was typical (and what was not). Some literature has alluded to the fact that these artificially-created norms can be empowering, and that the general population plays a role in being receptive to these norms. For instance, in her book *The Averaged American*, a historical look at the effects of quantification and categorization on American society, Sarah Igo concludes that...

The seemingly private and atomized act of divulging personal information to a surveyor... could have significant political effects. In such ways, social scientific data created novel possibilities for community and self-assertion even as they placed new constraints on self-fashioning" (285; 2007).

In other words, despite the limitations that quantification and categorization can place on a society, there can be strength in representation through numbers. Igo's conclusion may be rooted in social science-based case studies, but her words ring true for this thesis as well. A person's wish to be represented by numbers is particularly present in the Great Britain case study (Chapter 2), but can be found in the French case study as well (Chapter 4). For instance, at the end of the French Revolution, there was political pressure to quantify and represent the French population as accurately as possible for electoral purposes – for a new democratic republic.

This leads to another argument about the importance of national statistics, which Hacking acknowledges explicitly: large numbers provide us with a fine-grained, aggregate portrait of society that qualitative accounts cannot. Like with Monet's impressionistic paintings, what we are seeing from far away is not precisely as it is on the canvas. The exact shapes of all of the irregular splotches of paint are completely lost on art-gallery viewers standing ten feet away. However, it is difficult to visualize the whole of the painting when focusing intently on only one small brush-stroke. For this reason, Hacking recognizes that statistical practices are, despite their complicated and unpredictable effects, necessary:

It is certainly not true that most applications of the new statistical knowledge were evil. One may suspect the ideology of the great Victorian social reformers and still grant that their great fight for sanitation, backed by statistical enquiries, was the most important single amelioration of the epoch. Without it most of you would not exist, for your great-great... grandparents would never have lived to puberty (184; 1981).

Hacking admits that he does not have a good solution to the double-edged sword of statistical practices. On one hand, they control so many aspects of our lives; on the other hand, they're integral to identifying widespread societal issues. I'll illustrate this tenuousness in the third case study of this thesis; the efforts to control quickly spreading disease in 19th-Century Great Britain.

* * *

One of Foucault's biggest concerns with statistical practice of the state - which Ian Hacking articulates in his aforementioned essay - is that "...statistics of populations and of deviancy form an integral part of the industrial state... which has to do with providing a stable social order" (183; 1981). However, in the case of government-based statistical practice, this

power manifests itself in the form of constant assessment of populations. This is the state's preoccupation with truth, which is both necessary and unsettling. After all, in this new regime, it becomes a governing body's job to know more about its people, and to tax and provide services based on that knowledge. However, we must ask ourselves, *How much can a government quantify?* When does a ruling body know where to draw the line on the quantification and categorization of its people? Is there a threshold at which this quantification becomes invasive, or at which this information can be used to limit freedoms? Just as Hacking said, these questions do not reveal an inherent evilness - but they do conjure morally ambiguous and culturally complicated effects of statistical practices.

Therefore, an important question remains: how can we really understand the relationship between statistical practices and societal goings-on? Hacking calls for a Foucauldian framework through which to better understand the interactions between the internal and external dialogues of statistical practices. By this, he means a better way of connecting the social conditions precluding - and resulting from - quantitative methodologies. However, finding links between administrative discussions *within the discourse* and social realities *outside of the discourse* is more difficult than imagined by scholars who wish to study such dynamics (Hacking 191; 1981). As Foucault had mentioned, the connections between the "system of formation" *within* a discourse and the political and societal dynamics *around* a discourse are not always directly related. Both scholars paint an immensely complicated picture of these cultural networks, and Hacking sees the inner-workings of statistical practices as being so ingrained in the way we think about things that they are nearly impossible to divorce from. Foucault and Hacking's assessments of statistical practices, functions of the state, and individualized discourse are not

entirely different from that of historian Alain Desrosières. In his writings, he describes the difficulty of paying careful attention to both validity and “convention” when analyzing statistical practices across time:

The tension between these two points of view - one viewing the objects to be described as real things, and the other as the result of conventions in the actual work - has long been a feature in the history of human sciences, of the social uses they are put to, and the debates concerning them . . . it is difficult to think *simultaneously* that the objects being measured really do exist, and that this is only a convention (1; 2002).

However, Desrosières’ framework for understanding statistical practices is to “. . . analyze the relationship between these two interpretations.” This is not exactly the framework that Foucault and Hacking propose, but it does give credit to the intricacies of the administrative, mathematical, social, governmental, historical, philosophical and economic issues that influence a science of the state. Desrosières’ view acknowledges this tangle of things, and prompts us *not* to separate them from each other at all. Rather, we must realize, as we are analyzing the effects of statistical practices on our perspectives and identities, that their resulting categories *are* real. Perhaps they are not the absolute, finite truth, but they are a reality of our everyday lives. They were devised using a series of protocols, both conceptual and mathematical; understanding the technical and practical development of these protocols is necessary to our understanding of these categories’ existence and perpetuation. This is the framework under which the investigation of the following three case studies will operate, considering both *validity* and *convention*, while keeping in mind the potentially disconcerting realities of *governmentality*.

It may be extremely difficult to gain perspicacity on a science of the state - let alone on any statistical practice. However, it is important to uncover the stories behind these matters,

because the categories put forth by statistics in Western society are so enmeshed in our way of life. What will happen if we do not even attempt to apprehend their innumerable and varied effects? Data on all aspects of our existence are swiftly accumulating. Certainly, the bureaucratic arms of statistical practices are extremely important to the effectiveness of our governmental, medical, and scholarly programs (to name only a few), and not directly harmful. However, they are deceptively robust, unforeseeable and quiet.

CHAPTER II

INDUSTRIALIZATION AND SOCIAL QUANTIFICATION IN 19TH-CENTURY GREAT BRITAIN

The following case study most closely reflects the governmentality dynamics laid out by Foucault and Rose in the previous chapter. 19th-Century Great Britain, during the Industrial period, was a chaotic place. There was a great economic shift from a mostly agriculture-based market to a factory-based one, overpopulation in newly urbanized areas, and seemingly uncontrollable poverty. Additionally, the British were generally distrusting of centralized government. Therefore, efforts to address the many issues that confronted industrialized Great Britain were a balancing act. Ultimately, despite the British population's aversion to centralized government, a centralized bureau of statistics rose to power. Even more interesting is that British citizens willingly assisted the bureau with its data collection. Specifically, there was great support for the adoption of national statistics within *a specific corner of the population*: the middle class. Furthermore, the very un-centralized municipalities of Great Britain could not have established a statistical arm of their governments were it not for a portion of the general populace who demanded feedback on the aggregate:

Having been an amalgamation of descriptive information on the peculiarities and ‘curiosities’ of a given country, it now became synonymous with gathering figures and arranging them to form averages. It was no longer...exclusively the statesman for whom such work was done; the public was also regarded as a legitimate audience for the statistical message (Metz 348; 1987).

In the following chapter, I will illustrate the ways in which the public was an audience for – and in which people were active participants in – the adoption of more of these practices. There was an ongoing dialogue between the British statistical bureau and the populations it served. Indeed, the statistical bureau (or the General Registry Office) could not have carried out its data collection without willing and active participation from these populations. Indeed, the acceptance of statistical practices in Great Britain – where sentiments were generally against the existence of a centralized government – ultimately resulted in comfort with a unified political system (Desrosières 170; 2002). This case study further establishes an aspect of governmentality that Nikolas Rose expounded on in his essay, *Governing “advanced” liberal democracies: the population (or a portion of the population) as willing audience for statistics and feedback on the aggregate*. The Industrialization of Great Britain brought about a swift incline in population density, and a subsequent spike in disease outbreaks and unsanitary conditions. Additionally, a greater variety of jobs and a shifting economy (from agriculture-based to factory-based production) resulted in a greater number of possible transactions and an overwhelmed workforce (Metz 338; 1987). This left groups of statesmen and sections of the population wondering why was all of this chaos occurring, and what could be done to resolve these issues^a?

^a This was not, however, the first time that the counting of people was thought to be a solution to poverty and sickness. “The concept of numerical social index,” says Metz, “originated in the fear that the plague aroused in the urban communities of the late Middle Ages” (343). A numerical social index was a way for the ruling class to understand how much of its citizenry died as a result of the Plague, and therefore a prediction of how many more might perish. The ruling class wanted to know these details so

This historical shift was an important one because suddenly, national statistics became a medium for feedback about the aggregate, *for* the aggregate. Quantitative measures are *intended* to create feedback loops (Espeland and Sauder 2; 2007). The regular release of statistical findings with a public audience in mind implies an expectation that the *population* will interpret these findings, and make changes to their individual behaviors. This puts an interesting twist on Foucault’s idea that statistics apply a simultaneous focus to both the individual and the aggregate: statistical practices describe the aggregate and, when they are published *for* the aggregate, they are left to individual interpretation. This is the reason these measures exist. “Quantitative authority and its link to accountability and evaluation,” say Espeland and Sauder, “are now so secure, so bound up with being modern, that we have trouble imagining other forms of coordination and discipline...” (4; 2007). Currently, the existence of a statistics- and feedback-based society is a consequence of the targeting of these measures to the general public. In order to truly understand why we came to rely so much on statistical practices, it is necessary to visit a moment in time when they saved lives^b and helped people adapt accordingly to a changing world. This is not to say that statistical practices are the best methodology with which to understand societal issues, or that they are the worst. I also do not intend to imply that they are neutral. In the following pages, I will re-tell a history of national statistics that will illustrate their

that they could discern whom they should keep on their premises – and whom they should discard. Metz calls this a sort of “Plague Thermometer.”

^b “It is certainly not true that most applications of the new statistical knowledge were evil. One may suspect the ideology of the great Victorian social reformers and still grant that their great fight for sanitation, backed by statistical enquiries, was the most important single amelioration of the epoch. Without it most of you would not exist, for your great-great... - grandparents would never have lived to puberty” (Hacking 184).

complexity; their unpredictability; their tendency to evade theoretical frameworks that we try to impose on them.

A Brief History of British Statistical Practices of the State: The British Census

At the turn of the 18th century, national statistics in Great Britain were not of great importance to statesmen *or* to the general population. Furthermore, the British government “was not inclined to integrate the greater part of statistical knowledge and expertise into bureaus that depended on it” (Desrosières 166; 2002). A Bill for the collection of regular censuses was put forth as early as 1753, just before the Industrial Revolution – and rejected (paraphrased, Glass 90). The worries surrounding population growth, food supply, poverty and health – all related to the Industrial Revolution and the aftermath of the Napoleonic Wars – had not yet surfaced:

Towards the end of the eighteenth century, the attitude towards population growth as such began to change. Concern with the increasing burden of the poor, and with the need to import food, began to erode the earlier mercantilist belief in the advantages of a large and increasing population... (Glass 90; 1973).

However, the sudden advent of the aforementioned problems resulted in a British government that recognized the benefits of counting people. Statesman Charles Abbot introduced the Bill only two weeks before it passed. The first real British census was taken in 1754 (Glass 91; 1973). However, at this point in time, the methodology for British census-taking was enumeration, and not sampling. This meant that, instead of gathering information from a small, representative population of people and extrapolating from the results, local parishes – and the enumerators that they hired – were attempting to count absolutely everyone (Glass 91; 1973). It

is unclear from the literature exactly what this involved (for instance, traveling from door to door and verbally inquiring about the number of people living in each household). Regardless, considering variances in individuals' willingness to participate, or ability to be present at the time they are questioned (Leibler and Breslau 880-902; 2005) – not to mention human error – it is impossible to know the exact number of people in a population at any given time.

Unbeknownst to the British, approaching a count with this expectation of accuracy actually led to more inaccuracy (Glass 91; 1973) – for this reason, enumeration “created the population that it was counting” (Leibler and Breslau 880; 2005). Also, the ways in which some questions were worded or structured confused survey-takers. For instance, questions about age were particularly odd: they would prompt a household head to note how many people in their households were between the ages of 5 and 10, 10 and 15, etc. (Glass 91; 1973). Not to mention, a great deal of the British population was illiterate at the time: some men – and the great majority of women – signed their marriage papers with a “mark” (essentially, a symbol) instead of actual signature (Glass 91; 1973). Therefore, there were many discrepancies with the ways in which survey-takers read and interpreted questions.^c

The British census became a fully established practice of the British government in 1841. This can be attributed to the creation of the General Register Office, or the GRO, in 1837 (Glass 94; 1973). The GRO would become the permanent home of the British census. Census-developers worked to improve the clarity of questions, and new techniques that involved the counting and mapping of populations to their respective regions were implemented (Glass 94; 1973). For instance, data “...were presented according to a refined geographical analysis,

^c It is unclear as to whether or not illiteracy remained an issue with the British census, even after the General Register Office took over its operations, as it is not a problem related to the methodology of the census itself.

intended to designate with speed and accuracy the seats of epidemics and destitution”

(Desrosières 168; 2002). Additionally, enumerators no longer expected that quantification led to a precise measurement of all people in Great Britain. Instead, they would define enumeration “as being in respect of the individuals present on a specified night” (Glass 94; 1973).

The Founding of the General Register Office, and the Development of Real Social Statistics in Great Britain

According to statistical historian Desrosières, as well as aforementioned sociologist David Glass, it was the overcrowding of populations in newly urbanized areas – and the plight of disease leading to seemingly uncontrollable morbidity and mortality rates – that led to the acceptance of a General Registry Office in 1937. Before this, there was no centralized, complete inventory of everyone in the British populace, as parishes were responsible for the keeping of birth, death and marriage records. A system where parishes were record-keepers resulted in the counting of only those that went to church, and only those that were of particular sects of Christianity. This in turn caused government officials to surmise that an organization dedicated solely to dealing issues of population might be a necessity – particularly in diagnosing issues of sickness and poverty (Desrosières 167; 2002). The early days of the GRO, pioneered by a doctor named William Farr, initiated awareness of sanitation and hygiene in industrialized Great Britain (Desrosières 168; 2002). Farr believed that higher rates of disease and death were directly connected to overcrowding, and that overcrowding was a result of Great Britain’s urbanization^d (Eylar 34; 1979). For this reason, his aim was to use the GRO as a platform through which to

^d Interestingly, Farr was an admirer of Adolphe Quetelet (Desrosières 169), a Belgian statistician who believed that there were immutable laws of society – laws that could be revealed through statistical practices.

affect policy involving overcrowding and health. However, the British mistrust of centralized government – an after effect of the Napoleonic Wars – did not provide the GRO with much authority:

The public health movement could only rely on autonomous local initiatives...[GRO] had little power, except to persuade and give advice. It forged a policy of alliances with doctors and local authorities to promote vital statistics: the ensemble formed by the traditional civil service (births, marriages, and deaths) and by morbidity - that is, the percentages of deaths associated with specific causes (Desrosières 168; 2002).

Since the GRO could not directly assert authority through policy, Farr directed GRO's mission toward individual doctors (and other local non-government entities), advertising the importance of sampling and understanding the human condition through health statistics. GRO, under Farr's leadership, would gather these vital data items from each individual municipality and community, mapping these statistics of the human condition onto their respective geographic regions (Desrosières 168; 2002). With this new counting tactic in place, GRO created geospatial visualizations of societal well-being, which would subsequently be published for all to see. One particularly compelling example of this, notes Desrosières, was a comparison of infant mortality rates among large urban areas. Some cities had unusually high infant mortality rates, particularly when juxtaposed with others (168; 2002).

Statistics like these caused the conglomerated municipalities of Great Britain to compete with each other. Additionally, if a given municipality's health statistics were looking grim, the municipal government looked as though they were not doing their job. Since there was no real centralized government responsible for a general population's well-being, these smaller governments had no larger authority to defer to (Desrosières 168; 2002). All of this competition,

in turn, garnered a great deal of public attention. The release of these GRO statistics would even lead to the creation of a new public health standard in 1848: municipalities with death rates higher than 2.3% were forced to publish “health tables,” which served as a public accountability measurement for sanitation and hygiene. Farr even developed a rankings list of the 63 healthiest districts in Great Britain, and calculated and averaged all of the mortality rates. The idea was that this average would serve as a target for less hygienic cities (Desrosières 168-169; 2002).

Statistics of the State; Statistics for the Public

The municipalities of Great Britain could not have rallied support for the GRO – or for the importance of feedback on the aggregate – if statistical practices had not been widely supported by the general populace. Therefore, it could be said that the British “statistical vogue” (a term coined by Metz) of the 19th century marked a major shift in the quantification of social issues: the population as audience. However, it wasn’t the entire population that supported more statistical methodology in state affairs. Those living in poverty, for instance, although frequently the subjects of these debates, had no voice on the matter. It was the middle class who valued statistics as a method of gathering and creating knowledge that could greatly benefit the general public.

[Statistics found]... a group of practitioners and an interested public...among the middle classes and their quest for practical knowledge. These men were easily bored by lengthy deductions and abstract reasoning. Statistics, however, seemed to pave the way to useful knowledge (Metz 341; 1987).

The British middle class believed that statistics were a practical, non-Ivory Tower way of deducing important social facts. Furthermore, they felt confident that these facts would help *them* – and not the ruling class – understand, account for, and perhaps even remedy issues of poverty, sickness and crime (Metz 341; 1987). At the time of the Industrial Revolution, the British were experiencing a new era of economic, political and social growth that, as previously mentioned, was marked by a great distaste for centralized government. As an after-effect of the Napoleonic Wars, which ended in 1815, the British did not hold centralized forms of government in very high regard (Desrosières 167; 2002). However, urban plight – not limited to sanitary issues, but also including extreme poverty – was a side effect of this period of industrialization.

The GRO played an essential role in debates on the diagnosis and treatment of a problem that obsessed English society during the entire century: the problem of poverty linked to anarchic industrialization and urbanization (Desrosières 168; 2002).

Additionally, it could be said that the need to quantify social phenomena partly arose from the influx of employment changes caused by industrialization. Although employment is an economic issue, its effects creep into the social realm (Metz 338; 1987). Not only were there more people, but also more occupations, more interactions, and more possibilities:

Modern society is an urban society, and urban life, especially if combined with industrialization, is a source of diversification and quantification. This is not merely a result of markedly increased density but also of a high degree of flexibility in socioeconomic relations. The fluctuation of the aspects circumscribing a person's position in society was the product of such flexibility...Individualization and quantification reinforced one another (Metz 338; 1987).

However, some people still had mistrust for this new optimism about numbers and their supposedly objective recommendations for poverty, crime and sickness. “The attitude that

counting men instead of weighing them, which was generally ascribed to the statisticians by their critics, was unbearable... Statistics, they claimed, reduced men to averages, to a mean man that only existed in one's fancy" (Metz 348 of Carlyle 170-174; 1987). Critics, although aware of the power of capturing social trends through quantification, felt that a strong focus on the average person would hamper individuality (an argument similar to that of the Germans', which will be discussed in the next chapter). They believed – much like the German statisticians that we read about earlier – that the average person's interactions were too complex to be captured by data on birth rates, death rates, crime rates, and the like (Metz 340; 1987). However, perhaps humorously, statistical practices were already so widely accepted by the general populous that its critics "had to bolster their moral objections with some statistics supporting their case" (Metz 341; 1987). Statisticians and their supporters really believed that statistical measurements would reveal some sort of pattern or rhythm to the way that people go about their lives, that they could then utilize to solve issues like poverty and sickness.

This case study reveals that statesmen are not always the sole audience for statistical findings; populations can actively seek to know about themselves too. This dynamic is still representative of governmentality. It is through individuals that the categorizations – and accompanying identities – of national statistics are carried out (Rose 145-156; 1996). However, this is not necessarily a malicious process. What I intend to illustrate with this case study is that the strength and direction of that control is complicated, unpredictable, and situational. In 19th-Century Great Britain, statistics *actually* saved lives. The establishment of the GRO and the rigorous epidemiological movements it kept ravenous diseases under control, and resulted in the sanitation practices we have today. Were it not for these developments in hygiene, many of us

wouldn't exist (Hacking 193; 1987). However, it is impossible to have these types of widespread, quantifying programs without a more centralized system of government. Centralized systems of government do invariably lead to the aggregation and control of people. The results of this aggregation aren't necessarily negative or positive, and they are not neutral either. However, it is impossible to reap the benefits of national statistics – benefits like sanitation and survival – without experiencing some level of control. And the facets of that control, much like the facets of a population, are impossibly difficult to categorize. This case study supports the argument that national statistics *are* a medium through which control can be applied to a population – one that can assert categorizations and create only one representation of reality. However, the dynamic, as Foucault had introduced and Rose had elaborated, is far subtler than a state applying control and a civilization obeying. These dynamics are quiet and variable, and may even be accepted by civilizations that claim to oppose this type of power.

CHAPTER III

***STAATWISSENSCHAFT AND STAATSMERKWÜRDIGKEITEN:* UNCERTAINTIES OF THE GERMAN AGGREGATE**

Governments have been counting their citizens since ancient times. However, the establishment of statistics as a discipline can be traced back to 18th-Century Germany. Through this case study, I will illustrate that, although national statistics are method through which a government can assert control on a population, the extent of that control is situational. For instance, German ministries strengthened their control by keeping their statistical findings private. Furthermore, the ministries' refusal to publish their counts and categorizations resulted in a system that lacked transparency. Additionally, I will shed light on a situation in which citizens took initiative to collect and analyze their own data – separate from any governing entity. This situation is indicative of a different dynamic, one that is not clarified in Foucault's theories on governmentality: a population's curiosity to understand themselves through the categorizing, aggregating realm that statistics provides. It was ultimately the German ministries' refusal to provide the population with statistical analyses that lead to the rise of amateur

statisticians. Additionally, I will talk about the founding of the Prussian statistical bureau – the most prominent in 19th-Century Germany, and the power dynamics within that bureau. Specifically, director Ernst Engel’s balancing act: convincing statesmen that national statistics were important, and emphasizing the publication of statistical findings. Finally, I will talk about the ultimate control dynamic: one in which statesmen Otto von Bismarck cut ties with the statistical bureau and lessened statistical practices to forward his own political agenda. In this way, Bismarck was asserting control by diminishing statistical practices.

Furthermore, German attitudes toward statistical findings were very different from the French and British attitudes, which will be discussed later in this thesis. Germans believed that national statistics could never fully represent a society and all of its oddities, or *Staatsmerkwürdigkeiten*. Essentially, German statisticians were constantly aware that statistics could never show them the true realities of the population, at both the aggregate and individual levels. This admittance of a lack of absolute knowledge, I think, can be seen as relinquishing of control. A government knows that its categorizations do not order completely. This is an interesting clarification to *governmentality*’s hypothesis that statistical understanding facilitates control.

Statistical Practices in 18th-Century Germany: An Overview

At the time that the *concept* of statistics originated, 18th-Century ministries in Prussia – one of the four German states at the time – would collect *qualitative* data on their citizenry. This data was secret, and the statistical findings that resulted were not released to the public. Prussian ministries adopted the history-minded, qualitative practice of *Staatwissenschaft* from university

professors, and tailored it to their own purposes. That is, they would collect information on the cultural, religious, and historical aspects of different segments of the German population. This blurry distinction between what was taught in universities and what was practiced at the state level would continue throughout the 19th Century, and into the first third of the 20th Century. The qualitative data collected by these state entities was used to make financial and military policy decisions (Desrosières 179; 2002).[°] By collecting this data, the governing entities in Prussia “intended to measure the power of a kingdom” (Hacking 378; 1987). This is an example of the negatively connoted *governmentality* that Foucault speaks of: specifically, a control that occurs when a governmental power uses data to categorize and order its people as an aggregate, in a way that does not necessarily account for a wide range of individual interests. Someone who disagrees with Foucault – perhaps a modern statesman who is dedicated applying statistical results to governmental outcomes, and not to theorizing the very nature of national statistics – could counter that. They would likely argue that a government implements national statistics to represent the population, and to arrive at policies that also represent the population. This is not an unrealistic stance and, for the sake of practicality and the making of important decisions, I am not opposing it. If they theorized constantly on effects of statistical practices, they wouldn’t be able to implement policies. However, I am saying that the extent to which individuals benefit from these statistics-based policies is entirely subjective.

Although the idea of societal benefit is subjective, data that is made available to everyone has the potential to provide feedback, and to aid in decision-making. Incontrovertibly, “people

[°] Interestingly, Prussian ministries were motivated to collect qualitative data for the same reasons that ancient governments were motivated to count: to take stock of the military and financial power of a civilization.

are reflexive beings who continually monitor and interpret the world and adjust their actions accordingly, measures are reactive. Measures elicit responses from people who intervene in the objects they measure” (Espeland and Sauder 2; 2007). Specifically, Espeland and Sauder argue that humans are curious to know about themselves: historically, we have always sought to find order in the world around us. This is best illustrated by the actions of the German citizenry at the time of all of this proprietary, secret data. Despite a denial of access to the data that Prussian ministries were collecting, data enthusiasts – unprompted by official orders, and simply interested in applying categorizations to their surrounding environments – would practice their own *Staatwissenschaft*. These amateur statisticians, independent of the government, would collect and publish their own data on the Prussian state:

...there were a large number of enthusiasts who measured and counted and put it all down in local, national, and international dailies, weeklies, monthlies, and yearbooks. No travel book was complete without its little summaries of statistics information about the town being traversed (Hacking 378; 1987).

Therefore, there was a great deal of published, qualitative data at the time. However, this was not a service that the state was providing. It is worth noting that the state did *not* attempt to interfere with these amateur statisticians, their data-collection, or the publication of their materials. The state simply refused to provide any assistance to these amateur efforts (Hacking 378; 1987). Therefore, statistics in 18th-Century Germany existed in “two distinct milieus, the administration and the world of enlightened amateurs” (Desrosières 179; 2002). This is an interesting affront to the concept of *governmentality*. While not affiliated with the government, these amateur statisticians were choosing to perform the same actions as the government: investigating

citizenry and collecting data. And while these amateur statisticians were not making decisions based on this data, they were publishing it to inform themselves, and the general population. The purpose of publishing the data was to guide the general population as they traversed Germany – to facilitate evaluative action.

Statistical Practices in 19th-Century Germany

At the turn of the century, German statistics became a public, governmental practice. That is, in 1805, an official statistical bureau – a state-run, public entity that would publish their data – was founded in Prussia. However, the Battle of Jena – a battle between the French and Prussian armies, in which Prussia suffered a staggering defeat – temporarily halted the efforts of this public bureau. It wasn't until 1810 that the public Prussian Bureau of Statistics was running again (Hacking 178; 1987). After the founding of the Prussian Bureau, the other German States – Saxony, Wurtemberg and Bavaria – followed suit, and founded their own bureaus of statistics. Eventually, there would be a centralized statistical bureau (created in 1871) for each of these state-bureaus to report to (Desrosières 179; 2002). However, each state's office would remain its own, independent entity. According to Desrosières and Hacking, the Prussian Bureau of Statistics was trendsetting. The statistical bureaus of Saxony, Wurtemberg and Bavaria copied the administrative structures and methodologies that the Prussian Bureau set forth. Desrosières notes that the Prussian Bureau adopted three signature attributes of 18th-Century statistical practices, and altered them for their own administrative purposes. These attributes included:

- A vocabulary to describe the histories, cultures and regions of given populations;

- An archive of administrative documents, or paperwork amassed from the methodological processes of data collection and calculation;
- Tables of vital aggregate data, describing population phenomena like birth rates and death rates (Desrosières 180; 2002).

The bureau collected data on various aspects of Prussian society, and published them in tables. The focuses of these tables included “population trends” (these came from the Prussian registry, and involved births, deaths and marriages), economic statistics, and inventories of all buildings in the Prussian kingdom (Desrosières 180; 2002). Additionally, the majority of the Prussian Bureau’s directors were university professors who taught *Staatwissenschaft* (Desrosières 180; 2002). Once again, this is an example of the blurring of academic, theoretical statistics as an educational pursuit, and state-run, applied statistics. Ernst Engel, the most notable director, even devised – and taught – his own statistical curriculum to economists and politicians outside of the bureau.

The Prussian Bureau of Statistics and Ernst Engel: Leaders in German Science of the State

The Prussian Bureau of Statistics existed for 129 years. It had 6 different directors over the course of its life. In 1860, a new director, economist and statistician Ernst Engel, would take over the Bureau – and standardize and centralize its practices. Engel was not initially a university professor. He was called upon to lead the Bureau because of his previous work on the *Dresdner Realcreditsversicheringsgesellschaft*. This was the name for Dresden’s mortgage insurance – which Engel himself invented. *Realcreditsversicheringsgesellschaft* was soon adopted by all German states and provinces (Hacking 379; 1987). Therefore, Engel approached statistical

practices from an economic perspective. When we read about history, we're taking in descriptions of political, social, and economics events of the past. Engel believed that statistics were a way to understand these same kinds of political, social and economic events, but for the present. Engel was of the traditional German mindset that statistics were *gegenwärtige Geschichte*, or “the history of the present” (Hacking 383; 1987), much like the previously mentioned Gottfried Achenwald.

Much of Engel's focus at the Bureau was to standardize its practices. He created something called an *individual bulletin*. The medium utilized by these *individual bulletins* is unclear, along with their formatting or their distribution. It is known, however, that they were sent directly to the households that the Bureau surveyed, as Engel was a supporter of complete enumeration (Hacking 383; 1987)^f. With the creation of *individual bulletins*, Engel hoped to cut out the middleman of the mayor or priest, who previously distributed all of the survey-like notices for the Bureau (Desrosières 181; 2002). Engel also saw to it that the Bureau published their data tables often. He established the *preussische Statistik* (Prussian Statistics), a public relations branch of the Prussian Bureau of Statistics. The *preussische Statistik* was devoted to releasing a constant flow of new statistical findings to the press (Hacking 380; 1987). It is unclear whether Engel emphasized more frequent publication because there was societal demand for feedback, or because he believed in openness regarding the data collected on the Prussian people.

^f Enumeration is the process of counting *everyone*, as opposed to sampling, which is the counting of a small portion of the population that can be extrapolated to represent everyone. This was a common methodology used by statisticians in 19th-Century Europe, which is now seen as rather primitive. Says Hacking: “The idea of representative sampling requires a concept of statistical law that Engel simply lacked. When he does casually mention samples, he is, once again, deplorably confused” (383; 1987).

In addition to building a relationship with the press, Engel was, in his earlier years at the Bureau, intent on building and maintaining a good relationship with Prussian statesmen. Although the Prussian Bureau of Statistics was state-run, it was more of a branch or extension of the government. There was still a delicate partnership between the Bureau and Prussian statesmen – one that needed to be maintained for the Bureau to remain in favor in the world of Prussian politics. To an extent, this structure contradicts Foucault’s notions of governmentality. He developed a *central commission on statistics*, or a “liaison between ministries and bureau” (Desrosières 181-182; 2002). Additionally, Engel created a course to train both academics and statesmen in the discipline of *Staatswissenschaft* (Desrosières 182; 2002). The course would eventually become a highly lauded credential for statisticians – and economists – to have under their belts (Hacking 380). Engel was, above all else, an administrator and a businessman. His main objective was to “interest other actors, and to integrate the bureau of statistics into vaster scientific and political networks” (Desrosières 181; 2002).

Engel did greatly improve the organizational structure and reputation of the Prussian Bureau of Statistics. However, perhaps ironically, his associations with statistics – and therefore with liberalism and globalization – would ultimately destroy the Bureau’s relationship with the Prussian ministry. Prussian statesmen – and all other governing bodies of the German states – were more conservative than their French and English counterparts. Typically, German statesmen had a great deal of anxiety about statistics and their relationship to globalization – something that French and English governments embraced. They were afraid of losing German identity, and of becoming lost and unimportant in an aggregate world. This is not to say that Engel did not have the same fears. He strongly disagreed with Quetelet, whose philosophies on

the average man and statistical determinism were wildly popular in England and France. Quetelet believed that humans acted in pattern-like, immutable ways – and that these law-like patterns could only be revealed through statistical analysis. This ideology offended the German mindset. In fact, most German statisticians didn't believe in an average man or a true aggregate – they saw the average as just one interpretation of reality (Desrosières 187; 2002), and believed that a “...historical rather than mechanistic vision of statistics fits tidily into a holistic view of society” (Hacking 383; 1987):

The belief of German statistical writers that law must be sought in variation, and not in mass regularity, reflected a commitment to the view that human diversity was genuine, and an unwillingness to follow Quetelet in dismissing variation as mere error (Porter 361; 1986).

German statisticians' disbelief in statistical laws relates back to their embrace of society's oddities – and the inability of numbers to capture these oddities – addressed earlier in this chapter. Engel was of this tradition. However, he still believed in a free-market, globalized world, for the sake of Germany's economy. Engel displeased the Prussian government after he established a group, in 1872, called *Verein für Sozialpolitik*, or the Social Policy Association. The group's purpose was to act as a statistical advisor to the prime minister. The Prussian prime minister at the time was one Otto von Bismarck, who despised statistics (Desrosières 182; 2002). Not only did Bismarck dislike statistics, but he also hated any suggestion of globalization or a free-market (Desrosières 185; 2002). The statistician and the prime minister disagreed openly, until Engel was finally forced to step down from the Bureau in 1882 (Desrosières 182-183; 2002). To an extent, this dynamic contradicts Foucault's notions of governmentality. Although the Prussian Bureau of Statistics was *connected* to the Prussian government, Engel's efforts to

mollify the government (and eventually, the government's decision to oust him) imply that the Prussian government did not necessarily see statistics as tool through which to understand the aggregate and subsequently assert power. This is in keeping with the overarching ideology of statistics in 19th-Century Germany: that they were only one representation of reality, and by no means an absolute. Bismarck was even resistant to the reality that statistics represented, as he wanted to assert his control by way of preventing globalization and free trade. Perhaps, then, statistical practices are not a trademark of the governmentality that Foucault speaks of – a method by which a governing body can know and rule the aggregate. In the example of Germany, the *withholding* of statistical practices – in various circumstances, was a method by which the government could *also* assert control.

In this German case study, we witnessed the unpredictability of statistical practices. Their absence – both in German ministers' refusal to publish statistical findings, and in Bismarck's severing of the Prussian government's statistical arm to further his own political agenda – shows us that taking away national statistics can be just as governmentally controlling as implementing them. Additionally, we saw that Germans had a unique way of thinking about statistics. Their view that national statistics were only one way of representing and understanding a society meshes well with Foucault's view that forcibly imposing categorizations meant to mirror a population is unfair. It is likely that German statisticians would have agreed with Foucault and his theories about *governmentality*, which raises an interesting question: is it the statistics themselves that determine the direction and strength of governmental control? This German case study supports the idea that control through statistics is circumstantial, and that statistical power

is not good, bad, or neutral. The German ideology *Staatsmerwürdigkeiten* implies that German statisticians may have believed in this strange complexity.

CHAPTER IV

CONTROL AND THE ABSENCE OF NATIONAL STATISTICS: FRANCE

“The origins, if not the zenith, of the great statistical enthusiasm of the early nineteenth century,” said historian of statistics Ted Porter, “are to be found in France” (27; 1986). To further investigate the essence of this enthusiasm, this chapter will investigate an immensely important political era in France: the years between 1789 and 1833. 1833 actually marked the beginning of the official statistical bureau in France – the *Statistique Générale de France*, or the SGF^g (Desrosières 151; 2002). However, the years of strife and argument over statistical practices and how they should be put into effect– spurned by the French Revolution and subsequently by the Napoleonic Regime – provide a dynamic picture of French quantification’s formative years. French national statistics began with the collection of secret data, as they did in Germany. Conversely, however, French statistics were first publicized in 1799 (Desrosières 34;

^g The SGF began in Paris, as a branch of the Ministry of Commerce (Desrosières 151; 2002).

2002) – a few years before the Prussian government began publishing their data. French statesmen continued to publish their data for just over 10 years, until Napoleon eliminated the statistical bureau. The idea of withholding statistical findings was introduced in the previous chapter. Doing this lessens governmental transparency, and is therefore one way in which a government can assert control. However, the elimination of both the publication *and* the collection of data ascends to a different level of opacity in governmentality. Very little is known about social realities during the Napoleonic regime, as vital statistics were unreliable – and wartime casualties were uncounted. Additionally, there was a brief period of time in the Napoleonic regime when data was being collected, but not on people. For a few years, the focus of national statistics had more to do with human output than human existence. This is reminiscent of Ted Porter’s assertion that people are not the only objects of statistical practices; statistics take on different meanings in different contexts, and can be used to order nearly anything. And, although Napoleon did not have a great deal of regard for social statistics, it was during his regime that

...the term ‘statistics’ changed its meaning in French, from the German-derived sense of merely descriptive aspects of a state or country, without any necessary analytical implication, to the English notion of ‘political arithmetic’ entailing numerical analysis (Desrosières 517; 1991).

This shift to numerical analysis introduced new arguments – on national statistics and how they should be conducted – to the fore. The formative years of statistical practices in France were, above all, home to a continuous series of debates. This constant dialogue about the purposes and definitions that underlie statistics is very indicative of what Kuhn refers to as a pre-paradigmatic stage:

The pre-paradigmatic period, in particular, is regularly marked by frequent and deep debates over legitimate methods, problems, and standards of solution, though these serve rather to define schools than to produce agreement (48; 1962).

In light of what Kuhn says, it is important to revisit the philosophies and ideologies at the pre-paradigmatic stages of a discipline, so that we may better understand the discussions that *define* statistical practices. This is particularly relevant in regard social statistics' straddling of multiple disciplines, its history fraught with identity crisis. In France, just as in Germany, there were some very public debates – between statesmen – about what the nature and purpose of national statistics would be. In Germany, as we saw in the previous chapter, the argument that opposed Quetelet's deterministic ideologies involved a multidimensional society – one in which many quirks and anomalies were possible. Quetelet, once again, was a very prominent Belgian statistician of the 19th Century. His philosophies were especially influential in France and Great Britain. He believed that statistical findings revealed laws of humanity – immutable laws that could not be changed by anyone. This belief in immutability is known as *determinism*, an ideology that Germans tended to bristle at.

Most Germans believed that statistical practices provided only one representation of society on which the government could base decisions. However, there was a slightly different discussion occurring within the French government. On one side was the opinion that statistics have a responsibility to be accurate – to reveal truth – and are therefore more mathematical than anything else. The opposing argument was that concentrating on the mathematics of statistics

would take time and devotion away from making the results of statistical practices digestible for statesmen and the aggregate audience. Perhaps ironically, the French population at large did not have a voice in this debate. The debate – which played out between two government officials in the years prior to Napoleon’s closing of the French statistical bureau – will be discussed in this chapter.

Additionally, I’d like to introduce the idea that all of these national statistics do not exist in their own realms. The adoption of national statistics was associated with more powerful, more organized forms of government (Desrosières 34; 2002). Thusly, Western European countries competing for more economically powerful reputations were swiftly copying the statistical doings of surrounding countries. Some of the Napoleonic-era statisticians (who will be discussed later on) were very influenced by the German way of conceiving national statistics. However, in the aftermath of the Napoleonic regime, the revival of French statistics existed in a push to understand disease and sanitation. This association between health and the aggregate would eventually influence Great Britain’s statistical practices in the 1830s and 1840s (discussed in the next chapter). The ideologies surrounding national statistics were quickly spreading, evolving and mutating. This chapter will illustrate France’s role in this continuous cycle.

* * *

In the midst of a political identity crisis, statesmen wanted data. The French Revolution marked a period in which “...hopes of re-founding society upon fresh bases went hand in hand with crises... These lofty goals led to a strong demand for descriptions of society in all its aspects, the better to transform it” (Desrosières 34; 2002). Statistical practices played a role in the French government’s paradigm shift, and its redefinition of itself as a discursive entity.

I'd like to take a moment now to explain the difference between Kuhnian paradigms and Foucauldian individualized discourses. Typically, these ways of thinking about the evolution of sciences typically do not always agree with each other. Kuhnian paradigms are typically seen as cycles. That is, a process by which frameworks are defined; build to their potential; disintegrate into crisis; then begin again, as the foundations of a new paradigm are built. Conversely, Foucauldian discourses are known to branch. Specifically, when a pre-disciplinary framework is in its earliest stages, there are many ideas and arguments about how this framework should be defined. Eventually, one argument wins out. However, the winning argument, in a sense, is defined by the losing arguments. Therefore, disciplines are seen as being shaped by the very ideas that opposed them.

As you can see, these are very different ways of thinking about the dynamics of what Foucault calls "formation" (which was discussed in the literature review). However, I do not see these dynamics as being disparate. Specifically, I visualize a framework in which Kuhnian paradigms exist and, in their most formative, pre-paradigmatic stages, branching occurs. That is, the full-fledged paradigm is defined by all of the ideas and arguments that circulated around its formation – even the arguments that did not become part of the paradigm's framework.

According to Desrosières, there was some collection of data before the French Revolution (34; 2002). However, much like the population data collected by the ministries of 18th-Century Germany, it was also proprietary. Therefore, the French Revolution prompted statesmen to begin collecting data for both themselves and for the population. That is, the population was seen as an audience for statistical findings. The first published statistics came in the form of a financial almanac in 1799, which was praised by French statesmen (Desrosières 34;

2002). In addition, however, to statistics' relationship to a fresh regime, the push for more national statistics had a lot to do with France's new existence as a Republican state. Republican meant *public*, and there was a need to quantify people for new governmental processes like electoral representation. In this respect, the French government wanted their statistics to be the "mirror of the nation" (Desrosières 34; 2002) – to be not just one representation of the population, but to be *the* representation.

The first published statistics also marked the beginnings of the Napoleonic era in France. A common historical myth is that Napoleon himself was huge proponent of rigorous statistics, and that the Napoleonic regime can be associated with a strong focus on national statistics. However, this "...statistical excellence of the Napoleonic period [is] a legend" (Bergeron 116; 1981). For instance, censuses were "hardly rigorous," says Bergeron (117; 1981) – at least not for humans. No separate categories existed for age and/or sex. The categories for the combination of these two traits were "...boys and girls up to age 20," "...unmarried men and women," and "...widowed men and women" (Bergeron 117; 1981). Therefore, the population of the new republic was represented, primarily, by these categories, which made it impossible to disaggregate age and sex (or, for that matter, marriage and sex!). Additionally, it was impossible to obtain even an approximation of the population at this point in time: as Napoleon's power progressed, a great deal of people went into hiding. Therefore, many births, deaths and marriages were not recorded (Bergeron 117; 1981). This issue carried over to the military's ability to count casualties of the Napoleonic wars. Even an estimate of French deaths in these wars was unclear, and the question has been disputed for many years. Historians have guessed that casualties were somewhere between 900,000 and 1,000,000 – half of which were killed in battle, and half of

which likely ended up as prisoners of war in neighboring countries, never to return (Bergeron 118; 1981).

Now, I'll backtrack to the end of the French Revolution, and the beginning of the Napoleonic regime. At the height of the mad dash to gather more data, to represent the French population as accurately as possible, a handful of statesmen played musical chairs as heads of a somewhat makeshift bureau of statistics. Lucien Bonaparte, Napoleon's younger brother^h, initially started the "bureau of statistics of the Republic" (Bergeron 117; 1981). However, a statesman named Jean-Antoine Chaptal would soon replace him.ⁱ Sometime after that (it is unclear – and disputed – exactly as to what happened), two statisticians – Alexandre Deferrière, shortly followed by Jacques Peuchet – would take charge of the bureau. This began the first era of debates about the nature of statistical practices. Deferrière was very much of the German ideology that statistics are only one representation of a population (Headrick 75; 2000).

Peuchet would take a similar stance. However, most of his fervor about statistical practices revolved around the way in which they were presented. Peuchet felt that descriptions – both written and spoken – were the best method of communicating statistical findings to the general public (Desrosières 35; 2002). His objective was "...to put across a simple and easily remembered message, to produce things that can be used readily, on which constructions of another rhetorical nature – for example, political or administrative – can be based..." (Desrosières 39; 2002). Essentially, he wanted to publish statistical findings that were accessible to both policymakers and laypeople. He believed that, since important decisions relied on the

^h Lucien Bonaparte had also been a Minister of the Interior. Currently, a position like this would be equivalent to a head of the FBI or Homeland Security in the U.S.

ⁱ It is unclear as to why L. Bonaparte was replaced so quickly.

presentations of these findings, they should be clear and understandable. However, Emmanuel Duvillard, a mathematician who worked for Peuchet at the bureau, questioned Peuchet's concept of statistics. Duvillard "...preached the precision of numbers, which could be crosschecked and which had laws that could be represented by equations" (Desrosières 35; 2002). He also strongly believed that, since the majority of statesmen and the general population did not understand how mathematics worked, it was a statistician's duty to make sure that all statistical findings were as accurate as possible (Desrosières 39; 2002).

Desrosières notes that these men were far more complex than their public personas would let on. For instance, Duvillard, despite being first and foremost a mathematician, was a great writer. And Peuchet, despite *publicly* raging against any sort of mathematical approach, actually used quite a bit of algebra in his research for the bureau (39; 2002). Nonetheless, the well-known nature of this polarized argument displeased Napoleon. He "[...] was not interested in the epistemological disputes between descriptive statisticians and political arithmeticians" (Headrick 75; 2000). He ousted both Peuchet and Duvillard, and deemed Coquebert de Montbret, a "senior official close to the administration" (Desrosières 40; 2002) the new head of the bureau. Montbret, according to Napoleon's instructions, conducted statistical research related to the economy: production and manufacturing. Says Headrick, "The reports [the bureau] produced between 1806 and 1812, especially those on harvests and food prices, were among the most reliable to be found anywhere at the time" (75; 2000). Additionally, relations with England at this time were not good, and Napoleon's main objective was to prepare France for war (Desrosières 40; 2002). During this time, there was a great shift in the foci of statistical practices. No longer did they investigate social issues, or people specifically:

As the government grew ever more authoritarian, its interests shifted from the poor, who needed assistance, to the classes with taxable resources. It began inquiring into the fortunes of wealthy families, even their daughters' dowries, beauty, and chances of marriage (Headrick 75; 2000).

At this point, the end of this phase of French statistics was nigh. Napoleon had previously suppressed other research-oriented entities that did not serve his purpose – specifically, the Academy of Moral and Political Sciences in 1803 (Porter 28; 1986). He did this again with the French statistical bureau, sometime between 1811 or 1812 (historians disagree over the exact year). However, in November of 1811, Napoleon requested a thorough inventory of all factories – detailed with information about their workers, production, and monetary value of their outputs. He wanted to know all of this information “within 8 days” (Headrick 75; 2000). The bureau could not provide such information in the allotted period of time and, for this reason, Napoleon terminated its (Headrick 76; 2002).

Statistics in France did not see a revival for quite a few years, even after the Napoleonic regime – there was not much interest (Porter 28; 1986). It is not exactly clear why; whether this lack of interest had to do with yet another governmental shift, a war-exhausted state, or something else entirely. However, around 1820, there was a surge of enthusiasm about statistical practices. Much like the amateur statisticians of Germany, these new French statisticians were unaffiliated with the government (Porter 28; 1986). Initiatives to begin statistical practices were all related to public health and sanitation issues, which Porter attributes to “army surgeons released from service at the conclusion of the Napoleonic wars” (28; 1986). These surgeons were interested in quantifying orphanages, prisons and poorhouses. These proponents of increased national statistics – unaffiliated with the government, believed that societal ills could be

diagnosed – and subsequently remedied – through quantification (Porter 30; 1986). It is impossible to say with certainty that the cholera epidemic of 1932 was a major reason for the establishment of France’s statistical bureau, the SGF. However, its official founding occurred just one year later, in 1933. The SGF’s founder and first director, Alexandre Moreau de Jonnés, was an ex-naval officer who had previously investigated the cholera epidemic (Desrosières 518; 1991).

Additionally, these statisticians – both Jonnés and his non-government predecessors – followed in the ideological footsteps of Belgian statistician Adolphe Quetelet, treating statistical evidence as law. Says Porter, “...the general disposition of these writers was to present their findings as direct and incontrovertible proof of the propositions they seemed to support” (29; 1986). One criticism, at the time, of this new statistical school of thought was by French botanist Alphonse De Candolle. He thought that statistics were beginning to “...become an inexhaustible arsenal of double-edged weapons or arguments applicable to everything, which have silenced many by their numerical form” (De Candolle 160; 1830). This argument – that the quantification of people silences the many facets of reality – is similar to the anti-statistical arguments that marked the “statistical vogue” (Metz 344; 1987) of the 1830s and 1840s in Great Britain, which will be discussed in the next chapter. Interestingly, Great Britain’s bureau of national statistics began similarly, with a push to better understand public health through quantification.

Here, we end our brief history of French statistics: a history prior to the SGF. During the French Revolution, the notion arose that there should be some way to tally a population – to have a count that mirrored an aggregate reality. However, the supposedly diligent statistics of the Napoleonic era were somewhat of a myth. Furthermore, Napoleon’s complete elimination of all

population statistics led to a misrepresentation of the mass casualties that took place in the Napoleonic wars. It is unclear whether or not this was Napoleon's intention. The Napoleonic regime ultimately *did* seek to understand its citizenry – however, not to categorize its social attributes. Rather, this regime sought to know the output of its people – the value of its population. This is another modification of Foucault's theories on governmentality. In this French case study, it was possible for a government to assert control over a population without quantifying and categorizing bodies. In fact, the Napoleonic regime was terrible at this. Rather, this government controlled people by quantifying their *production*. This was ultimately made clear when the collection of statistics on production and financial value ousted those of social issues. Perhaps most disconcertingly, Napoleon's government controlled through the complete absence of quantification. For this reason, I'd like to put forth the idea that there is not a linear relationship between national statistics and state control. These governmentality dynamics are far more complicated than that. There are so many political, social, cultural and economic factors that contribute to the shape and direction of such governmental control. What if Napoleon's style of governing was not autocratic, but he still detested statistics? What if all of this began to occur one hundred years beforehand, and not at the pique of the French Revolution? I argue that the conditions were just right for such extreme control and opacity to take place. If the climate had been slightly different, this case study might be telling of a different control dynamic altogether.

The dialogues in this history molded the ways in which national statistics were to be conceived – both in France and beyond – just after it became a quantitative practice. Statesmen fought over how and what national statistics should quantify. Is it a science, or something else? Should it measure people, actions, or things? Does it reveal reality, or just one representation of

reality? These questions were never fully answered, and they still are not. In this way, it is interesting how much national statistics have matured, yet with the same anomalies still vivid.

CHAPTER V

DISCUSSION: A COMPARISON ACROSS NATIONAL BOUNDARIES

In his *Governmentality* lecture, Foucault postulates that governmentality is a dynamic of governmental control. In the three previous case studies, I examined three different dynamics between national statistics and governmental control. This control can take many forms. As learned from the British case study, this control is not necessarily malicious or intentional. All of the governmentality dynamics put forth by Foucault and Rose were present. However, the GRO's existence in Great Britain saved lives, even though it was a centralized, statistical arm of the government. Without it, as Ian Hacking said, many of us would not be alive today.

However, as mentioned previously, all of the aspects of a Foucauldian control dynamic were there: there was a centralized organization counting people, creating categories for the masses, and organizing tallies of people into those categories. These organized tallies then go on to become the population. This is still a fitting example of the control asserted when a government

tries to know a population, developing categories by which individuals and groups can place themselves in, subsequently dictating identity for all.

Therefore, it can be ascertained that this control isn't necessarily *bad* (or good, or even neutral). Potentially, it has some very negative consequences. However, as shown in the French case studies, we need these governmental statistics: for accountability, for transparency, and to have awareness of what 19th-Century German statisticians called *gewürtege Geschichte*, or the "history of the present" (Hacking 383; 1987). It is not possible to reap all of the benefits of national statistics without suffering any of their consequences. Therefore, in this discussion chapter, I will attempt to explain all of the complexities of these national statistics, and recommend a new framework through which it is possible to harness their explanatory powers, while simultaneously understanding their multi-layered drawbacks.

Additionally, I would like to bring up, once again, Foucault's assertion that the aforementioned dynamics of control are not necessarily specific to national statistics. Foucault puts forth the idea that national statistics are a medium through which the technology of governmentality – or a governmental control dynamic – acts. This suggests, I think, that – very hypothetically – if national statistics had somehow developed to be something else (perhaps something that categorized with in-depth descriptions instead of numbers, for instance), control dynamics would still be at play. That is, Foucault is suggesting that it is not specifically the quantification that presents a control dynamic. The control is inherent in a government's attempts to understand a mass of people through a framework that does not leave room for individual quirks; this control could potentially be asserted through both quantitative and qualitative methodologies.

However, the concepts developed at the *formation* of quantifiable national statistics also play a role in determining how a population is counted, categorized and subsequently represented. So, it is not entirely possible to separate these control dynamics from the specific acts of quantifying. As was observable in all three case studies, different statisticians had different views about what national statistics should be, and what it meant to quantify a population. Additionally, there existed a wide range of voices on these matters. For instance, German statisticians believed in *Staatsmerkwürdigkeiten*; Napoleon believed that, if national statistics were to exist, they should quantify production and not people; William Farr believed in quantification as a means through which to control disease (just to name a few). Hacking put forth the idea that the beliefs and opinions of the earliest statisticians became so deeply imbedded in national statistics that they are inextricable from national statistics themselves. This idea supports a larger theory – one that has faith in the danger and power inherent in a government’s ability to craft representations of its population, and assign those representations to numerical values.

With those theoretical clarifications in mind, I will now draw attention to the three specific clarifications of *governmentality* that presented themselves in the German, French and British case studies:

1. **Control through the absence of statistics:**

State control is not only garnered through the use of statistical practices – it can also be gained by a purposeful lack thereof. A population can also be controlled when the state extinguishes statistical practices. This lack of transparency can be created in multiple ways,

which I will expound on later in later paragraphs.

2. The circumstantial nature of national statistics' control:

It is possible to produce conjecture about the causes and effects of statistical practices, and to compare situational causes and effects across space and time. However, the extent to which state control can be asserted through national statistics is circumstantial. Specifically, the strength and direction of this control is circumstantial, and is dependent on a myriad of factors: the nature of authority, political and economic climate, and social dynamics at play, for instance. These distinct and variable differences become visible through debates about the very nature of national statistics. In other words, we can understand more about the power dynamics inherent in a statistics-based style of governing by taking a closer look at the ways in which statesmen and amateur statisticians were attempting to define them. Additionally, statistical control dynamics of today can be better understood through the analyses of these historical circumstances. However, it is important to keep in mind that Napoleon's France is not today's France; not today's anywhere. And although there may be likenesses to certain modern political situations, I fervently argue that no two circumstances are ever alike.

3. A population's voice on matters of national statistics:

There were moments in these three case studies during which the general populace had no voice on matters of national statistics. For instance, in the late 18th Century, Prussian ministers collected data on the population – data that was for government eyes only. However, there were also moments when a population – or sections of the population – took

initiative to ensure that data was collected. For instance, when amateur statisticians in Germany created their own pamphlets with statistics they collected themselves. Certainly, Nik Rose presented the idea that populations themselves perpetuate the statistical ideas that a government puts forth. However, is it entirely fair to look on the population as this helpless entity, bound to carry out ideas that a government creates for it?

These three intertwining themes will be discussed in the paragraphs below, with examples from the previous case studies. All together, I hope to illustrate some possible consequences of national statistics. Additionally, I propose that these arguments work together to form an even larger, overarching argument, which I alluded to just a few pages ago: that we cannot peg statistical practices as being good, bad or neutral. The advent and subsequent evolution of national statistics bring with them a vast array of possible outcomes. As I stated before, we can better understand modern outcomes by comparing them to historical ones. However, no two outcomes can be fully understood in the same way; each one is slightly different, the result of its own, unique circumstances. I illustrate these themes not to provide a model through which we can always understand the ultimate nature of national statistics, nor to condemn the use of national statistics as a governing tactic. National statistics save – and account for – lives. If we were to do away with them this very second, the negative consequences would be great. Rather, I aim to shed light on their complicated nature.

* * *

The relationship between national statistics and control

State leaders can harness power through statistics – or a lack thereof. This was illustrated in both the French and German case studies previously explored. As Napoleon was gearing up for a multitude of wars, he cut all data collection for social services, and only focused on quantifying production. At this moment, national statistics were *still* present. However, they were not categorizing or measuring people. Therefore, the control dynamic inherent in a government's attempts to know a population should not have been present, right?

Well, technically. Although I argue that a control dynamic was still at play. People were not being categorized. However, the omission of attention to matters that were directly relevant to individual well being – particularly, issues of poverty – could be seen as a control dynamic in and of itself. This continued until Napoleon eliminated national statistics altogether: the rigorous collection of data *only* on workforce output and net worth of wealthy families. This resulted in a situation where, simultaneously, the presence and absence of national statistics worked together to fuel a dynamic of targeted counting and control. The absence of poverty statistics and the influx of labor statistics led to a purely output-based representation of society. A wartime economy's effects on France's impoverished class was not investigated – or represented – at all. By choosing to ignore statistical practices in this realm, Napoleon was exercising control and, in a way, creating a representation of French society that excluded social issues. That is to say, the absence of a representation became a representation in itself.

As previously mentioned, Napoleon ultimately cut out all national statistics' initiatives. For this reason, a casualty count for the Napoleonic Wars was unknown for many years. It is impossible to know whether or not Napoleon eliminated national statistics to keep France in the

dark, and to hide the severity of the war. That would be assumptive, and his true intentions may never be clear. Napoleon's failure to count casualties, however, did result in a situation where the true impact of these Napoleonic wars was unknown for quite some time: a situation where the French population was kept in the dark about the wars' impacts. In this situation too, the absence of statistical practices led to a deceptive representation of society, one that overlooked the 1,000,000-person casualty count.

Chapter 3 presented a similar, although less severe, situation in Germany. When Otto von Bismarck disagreed with Ernst Engel's tendencies toward globalizing statistics, he cut support for the Prussian Bureau of Statistics. Bismarck knew that Engel's statistical programming supported free trade and a more globalized world. These were policies that Bismarck was not interested in supporting, as they were contrary to his very traditional nationalism. He asserted control by injecting his political intentions into German politics; by pulling back the reins on national statistics.

The Nature of Statistical Practices – What Are They, Anyway?

In Chapter 3, it became clear that national statistics had shown themselves to be what Thomas Kuhn calls "pre-paradigmatic." That is, national statistics were (and, arguably, still are) a science that has not yet established a clear discourse, and an underlying set of assumptions that act as a lens through which to address new issues. In a pre-paradigmatic science, there is much debate over what that lens might look like. In debate has been present in all three case studies. In Germany, there was a lot of discussion about the extent to which statistics could be used in government. This is apparent through Engel's work, much of which involved maintaining good

relationships with statesmen, convincing them that *yes*, statistics were an important fixture in German government. It is also apparent in Otto von Bismarck's fear of statistics – that they might lead to a country of people who are represented by numbers, and not by a German identity. In general, German statisticians of the 19th Century frequently debated the essence of quantification – not necessarily among themselves, but against statistical ideologies from neighboring countries (specifically France, Great Britain, and any other nation influenced by Quetelet's *determinism*). Many Germans felt that statistics had to be taken with a major grain of salt. When people are counted, categorized and averaged, they felt that a *representation* of society was created. Furthermore, this representation was just one way of viewing the aggregate. It could never properly represent *Staatsmerkwürdigkeiten* – once again, the quirks and oddities of a population.

This way of looking at statistics was completely different from the ideologies circulating in France and Great Britain. However, as we learned in earlier pages, there was more contention about the nature of statistical practices *within* each of these countries. The debates in France and Great were of a similar nature, but played out in different ways. In France, this dialogue occurred during the earlier parts of the Napoleonic regime. Within Napoleon's small statistical bureau, recall that the arguments were as follows: Duvillard believed that those practicing national statistics should dedicate more time and attention to mathematical methodologies, while Peuchet advocated for a stronger focus on the verbal conveyance of these practices to both statesmen and the general public. Napoleon, above all, wanted statistical research to focus on a population's production and financial value. In Great Britain, William Farr and his contemporaries were of the opinion that poor sanitation and poverty were ills of society caused by chaos in the aftermath of

the Industrial Revolution. These were ills, they believed, that could be understood and solved through quantification. Middle class British people of similar opinions supported Farr's efforts to grow and centralize statistical practices – even though they were generally opposed to the centralization of anything state-related. However, members of the population who opposed to state utilization of statistical practices held beliefs that were similar to those of the Germans and, likely, to Peuchet's beliefs (Headrick 75; 2000) as well: that the complete quantification of a population is dangerous, that dynamic people cannot be represented by static numbers.

Each of these debates – even the French and British debates that most resembled each other – was slightly different, each situated in different contexts. This further illustrates the immensely complicated nature of national statistics. The beliefs, theories and concepts underlying statistical practices morph with the circumstances that surround them. Therefore, I feel it necessary to make the following comment on the idea that statistical practices lead directly to methods of control: it is impossible to know what this control will look like, or to what extent it will be asserted. The nature and strength of this control is entirely circumstantial, as national statistics can measure phenomena not limited to people; are adopted and utilized for a myriad of reasons; can elicit an endless number of societal results.

Additionally, in all three case studies, evolutions of national never happened by chance. Rather, their changes and mutations are affected by occurrences both internal and external to a state – even by statistical ideologies in neighboring countries. For instance, Great Britain's fear of centralization, which affected the way its national statistics evolved, was caused by the Napoleonic regime. Germany feared that a surge of quantification would cause its national identity to be obscured – and this fear was a reaction to countries like Great Britain, who

embraced free trade, globalization, and Quetelet's teachings. A state tailors national statistics to fit its purpose. For this reason, it is impossible to put a pin on exactly what statistics are, and what they will continue to be. National statistics are – as both a discipline and a concept – a moving target.

Population and statistics: an urge to categorize?

The idea that national statistics can be used to organize and control a kingdom, as mentioned earlier, was a focal idea in Foucault's lecture on *governmentality*. However, Foucault did not discuss the following dynamic: what happens when citizens in that kingdom have an opinion about the extent to which national statistics are employed? What would such a dynamic look like, where segments of the general population begin demanding for more statistical practices? This occurrence was apparent in the British case study, in Chapter 2. However, this case study was also exemplary of Nikolas Rose's elaborations on governmentality. That is, that governmental control is actually perpetuated by a population, when that population carries out the roles that a government created for them and gives its conventions – or its categories – a life of their own. Therefore, I do not see the British case study as being at all out of line with the governmentality frameworks that Foucault and Rose set forth.

However, although more subtle, the German case study presents a more powerful clarification to Foucault's governmentality. Ministers were not publishing their statistical findings. However, some Germans still wanted to understand themselves through a data-driven lens. They set about collecting their own data, and publishing their own statistical findings (although, at this point in time, statistics were still qualitative).

In light of this, I agree with Rose's assertion that national statistics are not unidirectional: only something that a government imposes on its people. There can also be a popular curiosity about averages and normalcy, categories and distributions – even in times that aren't marked by crisis (like Great Britain and its overpopulation and sanitation issues). Arguably, the amateur statistical enthusiasts of the German case study displayed something more than a mild curiosity about non-threatening societal issues. These people were passionate about national statistics because they, too, had their own curiosity about the human condition. This curiosity had nothing to do with roles that the government created for them, as all governmental statistics were secret. On their own accord, these amateur statisticians collected and published their own findings. They did not have to do this. Furthermore, they were not *instructed* to do this. This self-organization of data collection can, I think, be seen as a grassroots initiative. Arguably, these amateur statisticians collected data because they believed that a greater understanding of population dynamics could benefit the general public. Amateur statisticians wanted this information to be available to Germans who traversed these different villages.

This thirst for knowledge in the form of categories and averages is nothing new – or old. Across history, populations have been curious to know themselves through *convention*, as Desrosières would say. When Robert and Helen Lynd conducted their 1920s *Middletown* research in Muncie, Indiana, their study was met with a dichotomy of biting criticism (which I will address on the following page) and fervor.

[...] general readers [...] seemed spellbound by the ocean of details that Middletown presented. What [Middletown's] sponsors had not counted on was an immense appetite for facts about national habits, behaviors, and lifestyles that the study tapped into (Igo 71; 2007).

Igo also notes that “social scientists were not the only Americans interested in the accumulation of facts about contemporary culture.” Even an article in a 1929 issue of *Good Housekeeping* said of *Middletown*, “Nothing is so interesting as ourselves, and this was like looking at yourself in the mirror” (71; 2007). Just as the *Middletown* survey sought to describe what was American (Igo 100; 2007), German amateur statisticians were on a quest for what was German.

Additionally, the criticisms that accompanied the German, British, and *Middletown* statistical procedures were somewhat similar. British adversaries of a statistical society argued that the constant quantifying and categorizing of people was like “counting men instead of weighing them” (Metz 348; 1987). German opponents of statistics feared that representative descriptions of people would flatten an otherwise multidimensional society. Similarly, some residents of Muncie were very critical of the *Middletown* study. “It was not simply that [the depiction of] some of Middletown’s less attractive aspects...ruffled its residents,” says Igo. “It was that, in exposing the town’s contrasts, [the study] had failed to capture what some believed to be the truly representative members of the community” (94; 2007). We observe that the arguments for and against heightened statistical practices in all of these cases are very similar – and that all cases involve non-government initiative – and popular support of – statistics as a way of revealing the ways of the aggregate.

* * *

I argue that statistical practices are not entirely knowable; that the direction and distribution of control that can be asserted through them is unpredictable; that their very nature has been disputed throughout history, and is still a point of contention today. Considering the seemingly insurmountable complexities of national statistics discussed in this chapter – and displayed in previous chapters – I draw the following conclusion: it is impossible to reap the benefits we gain from national statistics without enduring some negative consequences that we can't always prepare for. Statistics do allow us categorize, average and organize large-scale phenomena – like disease – in ways that other methodologies do not. However, they cannot do this without the advent of human error: of sometimes less-than-approximate representation. There is no such thing as an absolute numerical “mirror” of society, as the French had hoped to create in the 19th Century, and as British enumerators had hoped to derive in the same century.

Additionally, it is impossible to extricate the viewpoints and ideologies that many statisticians have embedded in these practices over time – and to keep these ideas from mutating in the future. The only thing left to do is to attempt to understand how national statistics have evolved over time: what they have meant to different countries, eras, and political frameworks. This, I believe, is the best way to begin to grasp national statistics as a medium through which governmentality travels – and directly influences the identities and actions of individuals.

CONCLUSION

At the beginning of this thesis, I asked the question: *What is the relationship between national statistics and control?* Scholars like Michel Foucault, Ian Hacking and Alain Desrosières (to name a few) provided a theoretical answer to this question. Then, I explored three case studies through historical and empirical analysis. The aforementioned three case studies show that the relationship between national statistics and state control is not always direct. Therefore, it cannot be said that *more national statistics = more control*, and that *less national statistics = less control*. The absence of national statistics is also a medium through which a government can command and restrict. I suggest that the relationship between statistics and control is complex and circumstantial, and I argue for a historicist view of this dynamic. By this, I mean that each case study we saw is its own unique circumstance, and one that was the result of a very particular set of events. This is not to say that it's mute to look closely at these case studies. Comparisons between these historical events and modern occurrences can provide deep insight about the dynamics between state control and national statistics. However, when

drawing comparisons, it is important to remember that each case study is unique to its own set of formative circumstances – as is each modern issue in national statistics.

Additionally, an analysis of these three case studies complicates original conceptions of governmentality. Governmentality, a loaded and complicated term coined by Michel Foucault, leaves much room for individual interpretation. Generally, I understand it to be the act of governing, and specifically, I see it as both the assessment and preservation of a kingdom:

“[...] it is the population itself on which government will act either directly through large-scale campaigns, or indirectly through techniques that will make possible, without the full awareness of the people, the stimulation of birth rates, the directing of the flow of population into certain regions or activities, etc.” (Foucault 99; 1978).

This quotation from Foucault, I think, cuts to the essence of what makes governmentality so complex. It is not necessarily a nefarious herding of people: an outright ordering-around of sheep. More so, it is the consequence of the few leading the many. The few people – or group of people – in charge of a citizenry have their own ideas about what’s best for the population, and about how those best plans should be carried out. Naturally, what a few people think is best will not, in practice, benefit everyone to the highest extent.

Foucault sees national statistics as being a “major technical factor” (99; 1978) of governmentality. That is, statistics are a medium through which governmental control travels to its citizens, in the form of counting, ordering, ranking and categorization. And, as Hacking has said, the formation of these methods of counting, ordering, ranking and categorization have a lot to do with the personal views of the statesmen who developed them many years ago (Hacking

193; 1987). The importance of these statesmen's views and voices to the development of national statistics in each case study is apparent.

Furthermore, each voice, occurrence and argument in the British, German and French case studies was not only important to the development of national statistics in its own era but, I argue, it's also important to the whole of census-taking and national statistics today. These case studies are not only important for comparison, but also for understanding the history of this discipline that guides our movements and identities as populations.

The British case study told the tale of a society reluctant to accept centralized state powers, in the midst of a sanitation crisis. This chaotic period led many British people to position themselves in support of increased national statistics: to hold smaller, municipal governments accountable for minimizing disease and easing poverty. Through this case study, it became clear that governmentality dynamics are much more subtle than a government's overt imposition on a people. Indeed, this British case study supports Nikolas Rose's idea that civilizations themselves carry out the complicated dynamics of governmentality by acting in the roles of categories that have been created for them, and by perpetuating these categories themselves: that a state can govern through the "regulated and accountable choices of autonomous agents" (160; 1996). However, although this case study most closely demonstrates governmentality dynamics, it does clarify a common misinterpretation of governmentality: that is it somehow always malicious. The advent of national statistics in this study saved lives (Hacking 183; 1987).

The German case study exhibited more variance from the themes of governmentality. Specifically, the case study opened in the 18th century, when German ministers were collecting data on populations, and then keeping that data secret. Amateur statisticians, meanwhile, were

collecting their own data on the religions, cultures and histories of different populations. A governing body was not forcing them to collect this data, nor were German ministers attempting to hamper their efforts. These early statistics were more of a curiosity than a protest, and exemplify Sarah Igo's idea that people *can* be naturally curious about the categorized self; that there are not always issues of control at play in these matters. Additionally, when German governments did begin publishing their statistical findings, there was a great deal of fear about a loss of German identity. German statisticians were reluctant to flatten emergent, complex populations into one-dimensional categories. Therefore, the idea of *Staatsmerkwürdigkeiten* – or the oddities of a population, which cannot be fully represented through statistical findings – prevailed. However, this fear of globalization ultimately led to friction between statesmen and the statistical arm of the German government. One statesman – Otto von Bismarck – made great efforts to cut ties with statistician Ernst Engel and his census bureau. Furthermore, Bismarck did this to forward his own political motivations. This muffling of national statistics is an interesting example of a different sort of control dynamic – one not accounted for in previous notions about statistics and governmentality.

Finally, the French case study began at the time of the French Revolution when, much like with the British case study, the political climate was extremely chaotic. French statesmen viewed statistical methodologies as efficient ways of quantifying, ordering and controlling such chaos. Additionally, now that France was a republic, there was pressure to count people as precisely as possible, so that they could be represented through an electorate. However, France's growth as a republic was interrupted by Napoleon's rise to power. He intercepted the French government at a weak moment in time, and diverted its course to that of an autocracy. Since he

was more concerned with counting production and output – and less concerned with identified and relieving poverty – through quantification, he shifted the French statistical bureau’s attentions away from social issues entirely. Eventually he got rid of the bureau altogether. This led to complete opacity, particularly in the era of Napoleonic Wars. Since there was no statistical bureau, there was no way to measure the impacts of these wars in the form of casualty counts. This, I argue, is the ultimate form of governmental control – the harnessing of absolute power through the absence of national statistics.

I’d now like to revisit the idea that these snapshots of history – however compelling – are still moments in time, embroiled in their own circumstance. They serve as examples of what could happen to national statistics given a set of political circumstances. However, they are not predictive. The Napoleonic Regime, for instance - under the exact conditions that it occurred before - will never occur again. However, examining the French case study provides insight into national statistics and control dynamics during times of political strife, war and autocracy. This historical case study can help to shed light on the role of national statistics in modern autocracies, and the grim effects of opacity. But it cannot predict the exact implications of national statistics in a modern-day autocracy. Similarly, the Industrial era in Great Britain is a moment in time, with a set of circumstances specific to the early 1900s. Eras of great technological change – and the national statistics that arise from them – could be a great modern-day comparison to this case study. However, governmentality’s nuances would be different. Similarly still, Prussia is no longer in existence, and the German nationalistic sentiments that accompanied *Staatsmerkwürdigkeiten* – fear of globalization, and of becoming one personality-less, quantified population in a sea of many – are sentiments specific to early 19th-Century

Germany. However, the concept of *Staatsmerkwürdigkeiten* can still be applied to issues in national statistics. If policy-makers and governing bodies are conditioned to be aware of their abilities to suffocate a society's quirks through categorization and quantification, could this lessen the muddling effects of governmentality?

I do not have a curative solution to the complex problems that national statistics – and their absence – have presented in these case studies. However, my recommendation comes in the form of awareness. Since national statistics, state control dynamics and their surrounding circumstances are so complicated and emergent, it is difficult to predict what will happen given a new situation: a new set of circumstances leading up to a pivotal moment in time, in which it is necessary to assess the potential impacts of statistical decisions. Therefore, I advocate for greater awareness of national statistics' potential to shape identities, and to narrow individual freedoms. Furthermore, I think that having greater awareness of the quiet-yet-staggering impacts of quantification will become more and more important over time. National statistics are not going away anytime soon. With the looming presence of Big Data, the need to ethically harness the power of the aggregate grows more and more immediate – not just at the state level, but at the private sector level as well – statistical decisions have more room to greatly impact the direction of society at many different levels.

National statistics were created by people, for people. They are the sum of the beliefs, values and resolutions of many statesmen past. However, they have created a reality and, in that sense, they have taken on a life of their own. Additionally, they permeate so many aspects of everyday life that it is not difficult to become desensitized to their contrivance. These quantifiable categories are even buried our conceptions of ourselves the world around us. It is

impossible to extract them entirely. However, it is important to continually strive to understand the impacts of national statistics: although states may develop these methods of categorization and counting artificially, national statistics' implications that are far more real than virtual.

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