"LOS CULPABLES DE LA MISERIA": POVERTY AND PUBLIC HEALTH DURING 
THE SPANISH INFLUENZA EPIDEMIC IN CHILE, 1918-1920

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By

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ABSTRACT

During the Spanish influenza global pandemic, of 1918-1920, tens of thousands of people died in Chile. From the moment that the first cases appeared in Chile, in late September 1918, Chilean physicians argued over the nature and cause of the outbreak. Some argued that it was not Spanish influenza, but epidemic typhus. This study chronicles the events and impact of Spanish influenza on Chile. It also examines the country's public health response as it targeted the working-class and poor. In some cases the response was brutal. In Parral and Concepción, the *Brigadas Sanitarias* forcibly evicted thousands of people and burned down their homes. The historical record strongly suggests that Chile was struck by Spanish influenza, not a typhus epidemic. Yet, typhus served as a convenient diagnosis for physicians at the time. It fit a certain profile that Chileans had of their country. As a disease, typhus normally affects societies on the verge of collapse. By October 1918, the era of "Chilean exceptionalism," which had begun at the end of the War of the Pacific and the start of the Nitrate Boom, was coming to an end. Various social, economic, and political events made Chileans question the exceptionalism narrative and led them to proclaim "moral crisis," "economic inferiority," and national decline. When the mysterious symptoms of disease arrived in Chile, in 1918, it was easy for politicians and physicians to proclaim that it was typhus notwithstanding that, in the rest of the world, the disease was recognized to be Spanish influenza. For Chilean physicians and politicians, the country was in a state of decline.
This misdiagnosis had a profound effect on Chile: it led to a stigmatization of working-class people for decades to come; it drew needed attention to the plight of the working-class and their abysmal living conditions; and it intensified calls for social reform which led to the election of Arturo Alessandri in 1920.
Acknowledgements

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<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ARNAD</td>
<td>Archivo Nacional de la Administración</td>
</tr>
<tr>
<td>BOT</td>
<td>Boletín de la Oficina del Trabajo</td>
</tr>
<tr>
<td>CHIL</td>
<td>El Chileno</td>
</tr>
<tr>
<td>DGS</td>
<td>Dirección General de Sanidad</td>
</tr>
<tr>
<td>DT</td>
<td>Dirección del Trabajo (ARNAD)</td>
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<tr>
<td>MERC</td>
<td>El Mercurio</td>
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<tr>
<td>MININT</td>
<td>Ministerio del Interior (ARNAD)</td>
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<tr>
<td>MININTRU</td>
<td>Ministerio de Instrucción Pública (ARNAD)</td>
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<tr>
<td>NAC</td>
<td>La Nación</td>
</tr>
<tr>
<td>OCE</td>
<td>Oficina Central de Estadística</td>
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<tr>
<td>OCT</td>
<td>Oficina del Trabajo (ARNAD)</td>
</tr>
<tr>
<td>RBP</td>
<td>Revista de Beneficencia Pública</td>
</tr>
<tr>
<td>RChH</td>
<td>Revista Chilena de Higiene</td>
</tr>
<tr>
<td>RMCh</td>
<td>Revista Médica de Chile</td>
</tr>
<tr>
<td>SUC</td>
<td>Sucesos</td>
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<tr>
<td>UN</td>
<td>La Unión</td>
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<td>ZZ</td>
<td>Zig-Zag</td>
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Chapter 1: Introduction

1.1. "to slanderously doubt the Fatherland"¹

On Tuesday, December 15, 1918, jubilant crowds converged on the main train station (Estación Central), the main central square (Plaza de Armas), and all points in between, in the Chilean capital of Santiago. They gathered—trade unionists, sporting club members, firemen, servicemen, boy scouts and everyday people—to celebrate Chile’s place in history. Some stood on buildings and others climbed lampposts. Others waited eagerly on their balconies along the parade route. They were waiting for the arrival of the man of the hour, Lieutenant Dagoberto Godoy Fuentealba.

Days earlier, on December 12, 1918, this fearless aviator, dubbed “the Conqueror of the Andes,” had made aviation history by becoming the first person to fly across the Andes and the first person to cross a mountain range at an altitude of 5,675 meters (17,300 feet). Lieutenant Godoy had flown from Santiago, Chile, to Lagunita (near Mendoza), Argentina, in his CFS1 Bristol M.1-c, British-made aircraft. The voyage lasted one hour and twenty-eight minutes.

¹ Unless otherwise noted, all translations are my own.
Figure 1: Celebrations for Lieutenant Dagoberto Godoy in Santiago along the Alameda (a main boulevard in Santiago) (December 15, 1918).

Figure 2: Celebrations for Lieutenant Dagoberto Godoy in Santiago upon His Successful Flight across the Andes (December 15, 1918).

Source: “Alameda de las Delicias, invadida por la enorme concurrencia que aguardó la llegada del aviador,” SUC 17, no. 848 (26 December 1918): 4.


Lieutenant Godoy arrived at Estación Central, at 6:30 p.m., in a convoy accompanied by an entourage of military officials and journalists. A thunderous thirty cannon salute announced the hero’s arrival. Upon exiting his vehicle, he hugged and saluted his comrades and was then hoisted on their shoulders and triumphantly paraded amongst cheering crowds. In the background, the band played the Himno de Yungay, a hymn commemorating Chile’s military

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2 “La llegada del aviador militar Señor Dagoberto Godoy a Santiago,” ZZ 14, no. 722 (21 December 1918).
victory over the Peruvian-Bolivian Confederation in 1839. Drowned out by the chorus of cheers, the mayor of Santiago, Don Rogelio Ugarte, could hardly finish his speech. As Lieutenant Godoy’s convoy passed through the Alameda, he was “showered with flowers” from people standing on their balconies. A few days later, similar raucous celebrations played out in the southern city of Concepción. The festivities resembled Independence Day celebrations, remarked one magazine. The mood of the nation was summarized as follows:

The gathering to honor Lieutenant Godoy unfolded with true enthusiasm. It was a clear expression of well-founded jubilation that had reverberated throughout the nation before such a feat that speaks so highly of the [Chilean] race at a time when there are some who “slanderously doubt the Fatherland”.

Slanderously doubt the Fatherland? To whom was this commentator referring? Around the time that Lieutenant Godoy was being paraded about Santiago, hundreds of Chileans were being rushed to local hospitals sick, some violently, from a mysterious illness. Many had to be turned away for lack of space. Firsthand accounts by Chilean physicians, returning from Rio de Janeiro, Brazil, where the outbreak first appeared in South America, and reports, in the Chilean press, of similar outbreaks around the globe, suggested that the illness in Chile was Spanish influenza. Nevertheless, an influential group of Chilean physicians expressed skepticism that the disease was influenza. Extreme manifestations of the disease produced symptoms that were atypical of influenza. What was unfolding, they insisted, was not Spanish influenza but, rather, epidemic typhus (typhus exanathematicus).

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3 The Battle of Yungay has special meaning in Chilean history. Yungay was a galvanizing moment in the early days of the Chilean Republic and a key milestone in the construction of Chilean identity.

4 *NAC*, 18 December 1918, p. 11.

5 “El Teniente Godoy en Concepción,” *NAC*, 30 December 1918, p. 5.

6 “La llegada del Teniente Godoy a Santiago,” *SUC* 17, no. 848 (26 December 1918): 5.

7 Editorial, *NAC*, 18 December 1918, p. 11.
Epidemic typhus is an infectious and deadly disease spread by human body lice. Epidemic typhus typically occurs in places where there is cataclysmic social upheaval as a result of war, famine or natural disaster. Under these conditions, water may become scarce, causing people to not bathe or launder for extended periods of time. Furthermore, because of the upheaval, people tend to live in crowded conditions such as refugee camps or, in the case of Bolshevik Russia, passenger trains. This perilous situation is aggravated in places where winter months are long and harsh. It is this confluence of circumstances that creates an opportunity for body lice, which are related to but different from head and pubic lice, to flourish. The body louse is not the reservoir of epidemic typhus; rather it acts as a vector to transmit the disease from person-to-person. Humans are actually the natural reservoir of the epidemic typhus bacterium. In the pre-antibiotic age, the mortality rate for epidemic typhus was high: nearly 60% of people infected with the disease died.\(^8\) For this reason, throughout history, epidemic typhus has been regarded as a disease synonymous with the decay and collapse of civilizations. Physicians who argued that Chile had been invaded by epidemic typhus rather than Spanish influenza were biased by a coincidental and prevailing belief that Chile was in a state of national decline.

In the view of these physicians, the living conditions of the working-class and poor—who, until the mid-20\(^{th}\) century had been out-of-sight and out-of-mind of Chile's upper class—had degenerated so badly that they represented a public health threat to Chilean society as a whole. In this regard, the diagnosis of epidemic typhus was more of a social indictment against the working-class and poor than a medical diagnosis. The physicians' conclusions were colored by society’s fear and contempt for the working-class, the perception that Chile was in national decline after decades of glory and economic prosperity, and frustration over the government’s

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perceived neglect of public health. When the outbreak occurred and the symptoms could not be reconciled with influenza, epidemic typhus became the most reasonable diagnosis for those physicians who felt that it validated assertions of societal decay.

The typhus theory reflected the Chilean elite’s lack of confidence in the popular masses to make good decisions and to submit themselves to progress. To the elite, the masses were a backwards people, socially immature children incapable of being responsible members of society. A resident of Santiago’s upper district complained, in 1891, that the city was being overrun by an “inferno of corruption and scandalous commerce that bewitches and offers the public a vulgar spectacle.”9 In the minds of the elite, the masses ensnared themselves in vice and crime, they sold their votes, and, to top it all off, they could not even take basic precautions such as bathing or laundering to keep themselves and others from getting sick with exotic illnesses; these people needed to be civilized. The typhus diagnosis was an invitation to civilize the popular masses through public health.

In the years prior to the outbreak, a number of advances in the study of typhus were published in major medical journals, drawing pronounced scholarly attention to the disease. In 1909, French bacteriologist Charles Nicolle proved that the vector for the transmission of epidemic typhus was the human body louse. For this contribution to medicine, Nicolle was awarded the Nobel Prize in Medicine in 1928. In 1916, Henrique da Rocha Lima, a Brazilian physician and authority on tropical disease who was recognized for his expertise in both Brazil and Germany, proved that the bacterium *rickettsia prowazekii* was the causative agent for epidemic typhus. With Nicolle and da Rocha Lima's works fresh in their minds, proponents of the typhus theory, in Chile, saw typhus at every turn.

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The living conditions of poor working-class Chileans were terrible; however, they were not materially worse than the living conditions of their counterparts elsewhere in South America or parts of the developed western world. Were their living conditions as bad as those where epidemic typhus reigned (e.g. World War One trenches of France or Germany, trans-Siberian trains of Bolshevik Russia, or famine stricken Egypt)? Did it not seem just a bit coincidental that the outbreak of “typhus” occurred in Chile at the same time that Spanish influenza appeared in neighboring countries and around the world? Was it not remarkable that the outbreak waves of “typhus” (October-December 1918 and August-September 1919) coincided with Spanish influenza outbreak waves within the southern cone? Were physicians who advocated the typhus theory biased by their political and social views?

Chilean physicians believed that what they were witnessing in 1918 was an outbreak of *tifus exantemático* (typhus exanthematicus or epidemic typhus) not Spanish influenza. Disagreement amongst physicians was widespread, bitter, and well documented. Some physicians argued that the outbreak was Spanish influenza; others postulated that it was some other type of influenza; still others said that it was typhus; and yet others opined that it was a concurrent outbreak of typhus and Spanish influenza or typhus and some other form of influenza. The public and government were confused. Eventually, the widely accepted position amongst Chilean physicians was that there were two concurrent epidemics—influenza and typhus—that began, incredibly, at the same time and coincided with the global Spanish influenza pandemic. It could be said that this was simply a political compromise for two camps that would not back down from their positions or, perhaps, a safe, hedged, bet for people who really did not know what was happening. One commentator noted that,

according to some doctors, there is typhus exanthematicus and according to others it is influenza. Such disagreement amongst our doctors is serious.
we had other epidemics: cholera, smallpox, plague, we never had such bitter debates.\textsuperscript{10}

Engrained in the annals of Chilean medical history, the proposition that typhus was wholly or partially responsible for the 1918-21 outbreak has never been subjected to rigorous peer review. When the recent H1N1 (“Swine flu”) pandemic unfolded, Chilean media took renewed interest in the 1918 pandemic repeating the long-held assumptions and positions of the concurrent epidemics narrative and casting blame for the 1918 outbreak on the poor hygiene of the poor and working class.

Today, cases of epidemic typhus are rare. In the early 20\textsuperscript{th} century, the number of epidemic typhus cases was in decline, but epidemic typhus still occurred, from time-to-time, most notably: in Egypt during the 1917 famine; in northern Mexico during the Mexican Revolution (1910-20); in Serbia and Poland during World War One (1914-18); and in Russia during the Bolshevik Revolution and Russian Civil War (1917-21). In the early 20\textsuperscript{th} century, epidemic typhus was a “notifiable disease” in most countries including Chile and the United States. When a disease—typically an infectious disease—was declared “notifiable,” all confirmed cases of that disease were to be reported, by law, to a public health authority. A review of the American \textit{Public Health Reports}, for the period 1918-1921, reveals that large outbreaks of epidemic typhus numbering in the hundreds or thousands, such as the outbreaks described above, were infrequent but that small outbreaks were common all over the world.\textsuperscript{11}

Outbreaks of epidemic typhus were particularly common in the Andean highlands of Peru and Bolivia, which fits the epidemiology of the disease as the disease tends to spread efficiently in

\textsuperscript{10} Juan Arias, “Un refugio de los microbios,” \textit{SUC} 17, no. 846 (12 December 1918).

\textsuperscript{11} The \textit{Public Health Reports} is the official journal of the United States Public Health Service. It is a bi-monthly publication which, among other things, reports domestic and international cases of notifiable diseases. It was established in 1878 and remains in circulation.
cooler climates. It is possible that Chile had sporadic individual cases of epidemic typhus in the early 20th century, but it is highly unlikely that the thousands of cases of illness that occurred in 1918 and 1919 were epidemic typhus. Without a prior history of major epidemic typhus outbreaks, it is difficult to comprehend why Chile would have suddenly experienced an outbreak of epidemic typhus involving thousands of deaths and occurring, coincidentally, at the same moment, and for the same duration, as the Spanish influenza pandemic. Given that the cases of illness in Chile followed the same routes and patterns of transmission as Spanish influenza, it is more likely, on a balance of probabilities, that the cases of epidemic illness recorded in Chile during 1918-21 were Spanish influenza not epidemic typhus.\textsuperscript{12}

The typhus theory is even less plausible when one considers the treatise upon which it was based. The main proponent of the epidemic typhus diagnosis was Dr. Arturo Atria, who served as Chief Bacteriologist at the Institute of Hygiene in Santiago. His report on the epidemic(s) was highly speculative, drafted in a hurry, and was not subject to rigorous peer review or scrutiny at the time of publication; in fact, Dr. Atria's report has never been closely reviewed. Many medical practitioners referred (and to this day refer) to Dr. Atria's report as incontrovertible proof that epidemic typhus occurred in Chile, in 1918, and in subsequent decades. Dr. Atria seemed to have a proclivity for making grandiose pronouncements. In 1921, he also claimed to have found a method for isolating the “bacteria” of the smallpox (virus).\textsuperscript{13}

Whether the typhus diagnosis was in error or not does not diminish the impact such a diagnosis had, good and bad, on Chilean society. On the one hand, the typhus diagnosis put the spotlight on serious social problems such as affordable housing, potable water, elementary

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\textsuperscript{12} Throughout this dissertation, I discuss Spanish influenza in Chile during the period 1918-21. This is one year longer than the conventional 1918-20 periodization for the Spanish influenza pandemic. I did this because the effects of the Spanish influenza in Chile were felt in a measurable way right into 1921.

school education, child labor, public health, infant mortality, sanitation, and hygiene. These issues would have been tackled by government, at some point, but the perceived typhus crisis created a sense of urgency which triggered a reaction by government. Between 1925 and 1927, American physician Dr. Long, served as technical advisor to the Chilean Minister of Interior on public health reform. In his report, Dr. Long spoke of how enthusiastic Chileans were to embrace public health reform and how even limited changes began to affect positive change such as a decrease in infant mortality. Santiago held the unenviable world record for the highest number of infant deaths in 1900, an astonishing 502 per 1000; that is, 50.2% of children born in Santiago, in 1900, died before the age of one. This theme is discussed further in Chapters 3 and 5.

On the other hand, the typhus theory led to the stigmatization of the poor and working-class. In the immediate term, typhus gave public health officials license to subject the poor to humiliating body inspections, hair removal, disinfection and forcible confinement. As will be discussed in Chapter 8, in some cases the abuses were outrageous, such as the extra-judicial torching of several blocks of homes in Concepción and Parral and the dislocation of thousands in those cities. In the longer term, the typhus disease became a weapon of social critique, used to moralize and control the working-class’ hygiene, living conditions, habits, and vices. It fueled classist rhetoric and converted the working-class and poor into “others” in their own country; it was believed that the poor and working classes exposed themselves and others to danger of the disease.

The themes of blame, social immaturity, and barbarity versus progress informed the elite’s conceptual framework of the poor. These themes transcended public health and typhus

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and attached to other aspects of quotidian life such as democratic participation. The public hygiene movement in late 19th and early 20th century Chile integrated the poor urban working-class into the Chilean nation-state. Until then, the urban poor had been best represented by the image of the *roto chileno* itself easily manipulated by others to articulate personal political and social projects. The urban poor had no voice of their own on the national stage. The public hygiene movement exposed the shockingly precarious conditions within which the Chilean urban poor lived.

1.2. Literature Review

Research into the history of disease in Latin America has developed steadily over the past thirty years, branching out into all manner of sub-fields. The history of medical institutions, the medical profession, and medical practitioners have long been traditional areas of research and scholarship. Wrapped in the bacteriology tradition that prevailed in the late 19th century, this brand of scholarship, sometimes referred to as the “great men” narrative, highlighted the accomplishments and triumphs of the profession, its institutions and its practitioners. In the past, the history of medicine was not the, historian dominated, stand-alone field of scholarship that it is today; rather it was a constituent element of the study of medicine as told by doctors.

In the 1970s, the “great men” narrative was challenged by other narratives, the most significant of which being the social history of medicine narrative. The most recognized advocate of the social history of medicine narrative, in the United States, was Swiss born Henry Sigerist who served as Director of the Institute for the History of Medicine at Johns Hopkins University in the 1930s and 1940s. Sigerist’s most celebrated works were *American Medicine*

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and his eight volume epic, *History of Medicine*.\textsuperscript{16} In these works, Sigerist argued that the betterment of health in society could only come through a proper understanding of social conditions such as housing, access to health, education and the elimination of poverty. The social history of medicine was part of a larger paradigm shift in the study of history, born out of the 19\textsuperscript{th} century where quantification and empiricism figured so prominently. French and German historians were some of the narrative's early proponents. In the United States, interest in the "social history of medicine" came in the 1930s with the growing importance of social science.

The historiography of medical history in Chile unfolded differently. The "great men" narrative dominated late 19\textsuperscript{th} century and early 20\textsuperscript{th} century Chilean medical historiography in much the same way as European and American medical historiography, but this is where the commonality ends. Where the social history of medicine took off in all manner of exciting directions in Europe and the United States during the 1970s, in Chile the study of history, including medical history, was subdued following the 1973 coup. Many themes in Latin American social history, such as subaltern history, were unheard of in Chilean scholarship until the 1990s. Following the restoration of Chilean democracy in 1989, the study of history in Chile exploded with scholars eagerly tackling new themes which, years before, were taboo. Many of these new works belonged to a narrative called the “nueva historia social,” or new social history. The history of public health was part of this intellectual renaissance.

1.2.1. Historiography of Disease in Latin America

Influenced by the social history of medicine narrative, the historiography of disease in Latin America has generally focused on the relationship between State power and medicine.

Within that focus, most Latin American scholarship has gravitated toward the post-germ theory era of the late 19th century, shying away from the early republican era when miasmatic theories prevailed. Marcos Cueto has published a series of works dedicated to the understanding of the State’s role in the institutionalization of public health in Peru. In one work, Cueto looks at how the State and international philanthropy came together to combat deadly yellow fever outbreaks that began in Northern Peru, in 1895, and eventually spread to the rest of the country.

Other works have focused on the creeping involvement of the State in managing public health—particularly with respect to mandatory vaccination programs—and the suspicion that this intervention provoked amongst working class people as well as the elite. Two notable works in this field relate to mandatory smallpox vaccination programs in Brazil and Chile. In her research on compulsory vaccination in Brazil, Teresa Meade explores popular opposition to the program which led to violent riots in Rio de Janeiro, in 1904. The Brazilian military had to be called in to enforce the vaccination campaign. In his work on the politics of smallpox vaccination in late 19th century Chile, William Sater explores the Chilean Congress’ refusal, in 1882, to pass legislation that would have imposed a mandatory smallpox vaccination program. In both works the authors ponder how it was that such beneficial, indeed life saving, measures would have been opposed by anyone. Both pieces highlight late 19th and early 20th century efforts to institutionalize public health and incorporate it as a function of the State. This made Brazilians and Chileans uneasy, but for different reasons.

17 The germ theory era begins with the observation of bacteria under an optical microscope. Prior to germ theory the prevailing view was that disease was caused by miasmas (i.e. bad air).


In Chile, Congress feared that the legislation would enhance the power of the executive branch of government. Since the 1870s, tensions between Chile’s legislative and executive branches of government had been growing. According to Sater, “The chamber of deputies’ refusal to support compulsory vaccine was a political statement. Unfortunately, the legislature’s desire to convert a public health measure into a partisan issue was not an isolated incident.”

The Chilean Congress had become fractured into “tendentious cliques” united in a common pursuit to restrict presidential powers. Since 1830, Chile had developed into a liberal-democratic republic with a constitution that favored a strong executive branch. From 1830 to 1891, the political scene was fairly stable and predictable with a few exceptions. This was in contrast to the experience of other Latin American nations that battled *caudillo* (strong man) politics. Beginning in the 1870s, the primacy of the Chilean executive branch was challenged by congress which was stacked with members of Chile’s leading families. Couched in Oswald Spengler’s theories of history and social order, Chile’s ruling class was famously described by Alberto Edwards Vives, not without critics, as the "aristocratic fronde in Chile", an ethnically unique aristocracy with mixed capitalist and feudal tendencies.

In Brazil, the conflict over vaccination was not between congressional and presidential loyalists but, rather between two different visions of progress: one forward looking (civilization), the other stagnate (barbarism). The civilization-barbarism paradigm in Latin America is well documented and is one that scholars have used to analyze a variety of historical events. It originates in Domingo Faustino Sarmiento’s work *Facundo*, published in 1845. Sarmiento was an Argentine academic and politician whose legacy as President of Argentina was just as

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21 Ibid., 541; See Alberto Edwards Vives, *La fronda aristocrática en Chile*, 16th ed. (Santiago: Editorial Universitaria, 2001) [original 1928].
profound as his legacy as a scholar. *Facundo* is a fictional novel about Argentine gaucho (cowboy) Juan Facundo Quiroga, a ruthless dictator, in rural Argentina, at odds with the progressive value system of modern Argentina. The story of Facundo is seen as a critique of Juan Manuel de Rosas, the Argentine dictator who served as president of Argentina from 1829 to 1832 and drove Sarmiento into exile in Chile. The novel creates a dichotomy of rural versus city, unitarians versus federalists, city folk versus gauchos, Europeans versus Indians and *mestizos*.

In her work, Meade uses the civilization-barbarism paradigm to analyze the conflict between competing visions of urban growth in Rio de Janeiro, represented by the upper and lower classes of the city. For Meade, the debate over mandatory vaccination was a microcosm of that broader debate. She writes:

Thus, at its core the 1904 vaccination riot was part of a struggle between Rio’s upper and lower classes over the city’s pattern of growth, specifically over where and how members of each class were to live. But more than that it was a struggle over whom Rio de Janeiro would serve: the Brazilian masses or the local elite and their foreign financiers. The 1904 protest was over the definition of a “civilized” society as much as over who was to do the defining.22

Meade argues that the elite saw the poor as a hindrance to their vision of progress. The poor lived in squalid conditions, in shacks with no garbage disposal or sewage systems. They were an embarrassment for those who wanted Rio to be seen as a modern city with all of the monuments to civilization (e.g. theaters, opera houses, sporting clubs, etc.). In Sarmiento’s day, the civilization-barbarism narrative pitted urban against rural: in Meade’s interpretation of the vaccination debate in Rio, the civilization-barbarism narrative invokes Positivist notions of “progress.” Indeed, it was so rooted in Brazil’s culture that it became the country’s national

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motto “Ordem e Progresso” (order and progress), a derivative of August Comte’s motto “love, order and progress.”

Expanding on this vision, Meade writes:

For them, Europe was the civilized ideal; thus they frenetically copied European fashions, culture, and ideology. Standing in the way of this goal, however, were a host of problems, some associated with rapid urban growth, others peculiar to the climatic, political, and economic conditions of Rio de Janeiro. Sanitation and public health were abysmal; housing in the city was inadequate and unhealthy; communication and transportation lines were disorganized, in disrepair, or entirely lacking. In the eyes of the Republic’s leaders, the city possessed none of the institutions associated with European civilized culture. It had no opera, only a small unimposing national library, few museums and theaters, and a dearth of smart shops, hotels, and cafes. Houses of commerce, banking, and international trade were insufficient or absent. What Rio had instead was an abundance of disease, a mass of people crowded into unsightly and unsanitary tenements in the downtown zone; prostitutes, beggars, and a large underclass readily visible to foreigner and Brazilian elites alike.

When the mandatory vaccination program was announced in 1904, it was too much for people to accept. There was something insidious about being forced to receive an injection against one’s will. One should appreciate that, at the time, layman awareness and acceptance of bacteriological explanations for disease was limited. State sponsored involvement in public health was also limited. Thus, the idea of allowing the State to impose mandatory vaccination was something quite extraordinary. The measure defied common people’s understanding of disease treatment at the time and also redefined their relationship with the State, permitting a level of intimate intrusiveness in day-to-day life that was without precedent. Often that intrusiveness was resisted, resulting in force and violent clashes not just in Brazil but throughout Latin America. On this trend Diego Armus writes: “At times, the struggle against epidemics took on the character of quasi-military campaigns in rhetoric by defining microorganism as enemies,

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and in practice by encouraging intrusive and violent interventions.” As shall be seen in Chapter 8 of this dissertation, relating to “Sanitary Brigades”, Armus’ observations ring true.

The civilization-barbarism dichotomy in the Latin American historiography of disease is treated a bit differently by María Angélica Illanes. In late 19th and early 20th century Chile, Illanes sees the civilization-barbarism question played out in three arenas which she calls the “three barbarisms:” for intellectuals and professionals it was the obscenely high infant mortality rate and urban poverty; for the ruling class it was social questions and the labor movement; and for the labor movement it was the exploitation, miserable living standards, and dysfunctional government which were the products of English capitalism and the Prussianization of Chile.

In her work, María Josefina Cabrera Gómez examines the mandatory smallpox vaccination debate in Chile once the program was finally instituted in 1905. She observes that the program faced less resistance and suspicion than in Brazil. Public health regulation during the Balmaceda administration, in the late 19th century, and earlier vaccination campaigns had diluted public anxiety over the measure. Gómez writes:

In our country a different process unfolded. The establishment of a mandatory vaccination program was not as drastic as in Brazil. The vaccination campaigns, the Balmaceda regulations, among other developments, preceded mandatory vaccination legislation. Thus, while the political actions surrounding vaccinations were not optimal, they were nevertheless concrete giving the masses time to slowly appreciate the benefits of vaccination. Furthermore, the measures were applied belatedly in our country giving our people more time to prepare than in Brazil.


26 María Angélica Illanes, Cuerpo y sangre de la política. La construcción histórica de las visitadoras sociales (1887-1940) (Santiago: LOM Ediciones, 2007), 12.

27 María Josefina Cabrera Gómez, “¿Obligar a vivir o resignarse a morir? Viruela y vacuna: el debate sobre una enfermedad y su prevención a comienzos del siglo XX en Chile,” in Por la salud del cuerpo. Historia y políticas sanitarias en Chile, ed. María Soledad Zárate Campos (Santiago: Ediciones Universidad Alberto Hurtado, 2008).
State involvement, or lack thereof, in urban housing and living conditions is another prevalent theme in the literature. On this topic, Ximena Urbina Carrasco’s book on conventillos in Valparaíso provides a unique look at the living conditions of late 19th and early 20th century poor and working-class Chileans.28 Conventillos were one bedroom houses where up to a dozen people would live in humble conditions, often without running water, drainage or sewage. Some conventillos had dirt floors and would collapse with a mild tremor, not to mention the destruction and misery that would ensue in these lodgings following a major earthquake such as that experienced in Valparaíso in 1906 which killed 20,000 people. Marcos Cueto refers to something similar in his work on Peru. There the counterpart to the Chilean conventillos is the callejones, which, although defined a bit differently, is conceptually the same.29

Despite government regulation, living conditions in many conventillos were perilous. Carrasco's study focuses on daily living of people and public perceptions of conventillos and those who made them their homes. While disease and public health are discussed, they are incidental subjects. Her work follows in the footsteps of a series of works from the 1920s and 1930s which provide social critiques of the neglected state of the urban poor in Santiago and provide vivid accounts of living conditions, notably: José Santos González Vera's work, "Vidas mínimas"; Manuel Rojas' work, "El delincuente"; Alberto Romero's work, "La viuda del conventillo"; Carlos Sepúlveda Leyton's work, "Hijuna"; Nicomedes Guzmán's work, "Los hombres oscuros"; and Isabel Torres Dujisin's work, "Los conventillos de Santiago, 1900-


It is those perilous living conditions that often provoked fear and disdain amongst Latin America ruling elite rather than compassion, empathy and social responsibility. In The Return of Epidemics, Marcos Cueto discusses how poor living conditions and deficient sanitary infrastructure led to periodic outbreaks of bubonic plague in Lima in the early 20th century. In Cueto’s work, one sees that the blame for the bubonic plague epidemic in Peru was not placed on government but on common people for living in unsanitary conditions, notwithstanding that proper housing and infrastructure were wholly inadequate. Poorly constructed housing meant that rats and other rodents easily gained entry into homes such that “huge, almost domesticated rats live there, in gentle intimacy with the neighbourhood’s children.”

Connected to the theme of housing and living conditions is the relationship between disease and marginalized groups. Here the literature has focused on working class people, Indians, and non-European immigrants. In The Return of Epidemics, Cueto examines, in part, the interaction between race and disease. He shows that Chinese laborers in early 20th century Peru were particularly vilified as carriers of bubonic plague. They were accused of having no concept of hygiene and of having little regard for the health and safety of others. In 1900, a leading Peruvian newspaper commented:

“Chinese people in rags, packed one over the other, smelling of opium and filth; men lying all over, trying to sleep as best they can; sick and squalid bodies, half-wrapped in disgusting rags...a bevy of filthy people who ceaselessly cough, thus filling the atmosphere with tuberculosis microbes which join the many others issuing forth from the people and the objects packed in this permanent focus of infection.”


The disdain was not just reserved for Chinese immigrants; indians from the highlands were also stigmatized. Bubonic plague came to be synonymous with marginalized social groups such that catching the disease carried the extra burden of being, associated with those fringe groups:

Denying the plague was thus a way of distinguishing oneself from social groups and living conditions held as inferior. In other words, the denial was not just out of fear of isolation and fumigation; the disease was also associated with misery, poor living conditions and, even worse, with being Chinese or from the highlands—the scum of the earth for some.33

There is a similar kernel of thought in The Redemptive Work. In this study, Kim Clark looks at the role that railways played in the nation building process in Ecuador in the late 19th and early 20th centuries. In chapter 6, she looks at the connection between race and disease in the town of Alausí where authorities struggled to stamp out bubonic plague. They resorted to mandatory vaccination programs and coercive, extra-judicial, methods too, such as burning down houses.34 This is eerily similar to an event in Chile which is discussed in Chapter 8 of this dissertation. Clark’s research demonstrates that the government viewed the plague in Alausí as a national embarrassment rather than a public health emergency:

The authority has received news that the lower classes of Alausí, stirred up by certain individuals who today as in the past exploit their ignorance to provoke them to nefarious ends, are currently concocting a plot against the sanitation employees of that canton.

The sanitation institution is deemed in any civilized country to be the most beneficial of all institutions, and therefore the people who comprise it are esteemed and respected. The very fact that there has been hostility shown to these employees reflects very poorly on the culture of that town.


It is imperative, therefore, that the authorities of Alausi use their influence to prevent the occurrence of acts that, filling us with disgrace, would shame us before the civilized world.\textsuperscript{35}

Diego Armus refers to this common trend in early 20\textsuperscript{th} century Latin American public health politics as “the worn-out tactic of explaining epidemic crisis by blaming the sick.”\textsuperscript{36} As will be seen, this trend has relevance to the Chilean case discussed in this dissertation. The 1918 diagnosis of epidemic typhus and its control reflected the Chilean ruling class' suspicion and disdain for common people whom they blamed for the outbreak notwithstanding that the outbreak was more probably Spanish influenza.

1.3. \textbf{Contribution to the Literature}

This dissertation adds to the literature in many unique ways. At a macro level, the study adds to the rich literature on the history of disease in Latin America by touching on some of the themes discussed in the previous sections, most notably State intrusion into quotidian life, civilization versus barbarism and the use of disease to criticize and alienate marginalized groups. The rhetoric of blame and use of violence to justify what would, otherwise, be considered egregious conduct are prominent themes in this dissertation: in particular, the discussion in Chapter 8, which examines the path of terror left by the \textit{Brigadas Sanitarias} in the southern Chilean cities of Parral and Concepción.

This dissertation also adds to the historiography of Spanish influenza. Presently there are no known major works on Spanish influenza in Chile. As an area study, this dissertation illustrates the commonalities and differences in the Chilean experience, provoking broader

\textsuperscript{35} Governor of Chimborazo to the political administrator of Alausi, Riobamba, 20 July 1914, AJPA, 1914 cited in Ibid., 149.

\textsuperscript{36} Armus, “Disease in the Historiography of Modern Latin America,” 7.
questions about assumptions that have been made, in the literature, regarding Spanish influenza. Thus, it is the first compilation and historical interpretation of information relating to Spanish influenza in Chile. One of the most remarkable, and unexpected, findings of my research was the discovery that the pattern of pandemic waves in Chile differed markedly from the experience recorded in the traditional historical narrative on Spanish influenza. According to the traditional narrative, there were three distinctive waves of Spanish influenza: February-July 1918; August 1918- January 1919 (with the most intense months being October and November 1918); and-December 1918 and February-April 1919 with influenza deaths returning to pre-pandemic levels following the third wave. From my research, it is clear that Chile’s pandemic wave experience was different. Chile did not experience a May-June 1918 wave and while the October-December 1918 wave was destructive, in Chile it was not the apex of the pandemic as it had been in other countries. In Chile, the most destructive pandemic wave occurred in August-September 1919 with an additional serious wave of the disease occurring in 1921. My research also shows that although in the 15 years prior to the pandemic there had been a stable and predictable pattern of influenza deaths, the 15 year period following the pandemic saw a volatile pattern of influenza deaths. In other words, cases of Spanish influenza did not just disappear, they faded slowly away.

This work is also unique for its critical interpretation of the typhus-influenza debate (the concurrent epidemic theory) in Chile. Until now the concurrent epidemic theory has not been challenged in any meaningful way but, rather, is discussed in Chilean history as historical fact. My dissertation explains the concurrent epidemic theory, questions its assumptions, and explains its immediate and enduring impact. During the crisis, working-class people were treated with suspicion and targeted for involuntary medical treatment. Many of the doctors and medical
students who treated the sick were well intentioned and motivated by genuine compassion, a call to service and patriotism. But, the public health campaigns these doctors and students conducted had the effect of stigmatizing the poor and working-class and casting them as social lepers. This came at a time when organized labor was already viewed with suspicion and contempt by the Chilean ruling class. During the crisis, there were instances of abuse of power by public health officials acting in the name of the State. The events in Parral and Concepción, discussed in Chapter 8, are the most notorious. In the longer term, the concurrent epidemic theory cast a shadow of distrust and stigma over working-class Chileans that lasted for decades.

1.4. Sources and Methods

My research pulls together various primary sources from Chile including: newspapers, magazines, Congressional debates, government archives, meeting minutes of medical societies, journal articles, cemetery records, census bureau records and turn-of-the-century academic theses. Most graphs and tables in this dissertation are original and based on quantitative data extracted from annual census bureau reports and cemetery death records. Other quantitative data was extracted from government archive records and newspapers. Government archive records came mainly from the National Archives in Chile. Documents were also pulled from: the Ministry of Interior (which was responsible for public health), the Ministry of Education, the Ministry of War, the Directorate of Labor, the Ministry of the Navy, and the Ministry of Rail. Congressional and Senate debates provided insight into the government’s state of preparedness for and competence in dealing with the crisis. Correspondence from the Dirección General de Sanidad (“DGS”) were examined as were meeting minutes of the Medical Associations of Santiago and Valparaíso. Turn-of-the-century journal articles from Revista Médica de Chile,
Revista Chilena de Higiene and La Tribuna Médica provided insight into the academic debates on Spanish influenza, typhus, the “social question,” and public health. Newspaper reports from all three of Chile’s leading newspapers—El Mercurio, La Nación and La Unión—were consulted and each provided a wealth of information on the daily struggles during the pandemic. Other publications, with specialty focus, were consulted such as Valparaíso Gráfico, which focused on printing press workers, and El Chileno and La Cachimba which were working-class publications. Two high life magazines, Sucesos and Zig Zag, served as a window into the mindset of the upper class.

1.5. Structure

In Chapter 2, perceptions of national decline and a re-evaluation of Chilean exceptionalism are addressed. Chile emerged from the War of the Pacific (1879-1884) a confident nation. It had soundly defeated Peru and Bolivia in battle, occupying the former for years. Chile's territory was augmented by 1/3 and its treasury quadrupled from the influx of mining revenue. The newly acquired northern territories contained rich mineral deposits, giving Chile a virtual monopoly over the global supply of nitrates. The economic boom lasted into the first quarter of the 20th century reaching an apex in 1907. Military victory and sustained economic growth fed the perception that there was something unique about Chile and Chileans; Chile was a different sort of country in Latin America, one with endless opportunity.

At the start of the 20th century, however, optimism began fade. Despite the continued boom there was a growing perception of national decline. Chileans were uneasy about the economy, they were uncomfortable with the degree of foreign control over their natural resources and perceived foreign influence on government, they felt insecure with the growing
labor disputes, and there were frustrated with the political emptiness of the Parliamentary Republic. As the centenary of independence approached, Chileans reflected on their achievements and shortfalls, cynical yet hopeful of what lay ahead.

The lives of the poor and working-class were perilous and forgotten. As Chapter 3 demonstrates, the poor and working-class were the neglected majority of Chile’s economic boom but, as one upper crust magazine put it, they were “los culpables de la miseria” (the makers of their own misery). The poor and working-class were seen as making unwise and foolish decisions that contributed to their own misery. They were viewed with suspicion and patronized for the way they lived. During the early 20th century, infant mortality was appallingly high, maternal health was deficient, childhood labor was rampant, and housing and living conditions were breeding grounds for an endless number of social and physical ills. As one Chilean scholar described it, there was a disease for every season in Chile.37

To understand the magnitude of the impact of Spanish influenza on Chile and how the Chilean experience differed, in some ways, from the global experience, it is necessary to understand Spanish influenza and its global impact. To this end, Chapter 4 surveys details of the illness—its etiology, epidemiology, symptoms, treatment—and chronicles its global diffusion.

Chapters 5, 6, 7, 8, and 9 are the crux of my research and showcase information, data, and analyses on Chile’s experience with Spanish influenza which has never before been compiled, analyzed, or presented.

Chapter 5 is a quantitative analysis piece that maps out geographic and demographic patterns of mortality. The chapter looks at pandemic wave patterns in Chile which contrasted

with wave patterns in certain parts of the world (such as in Europe, Africa and the United State) but resembled wave patterns elsewhere (such as in Argentina and Australia).

Chapter 6 of this dissertation explains epidemic typhus and the great Chilean typhus-Spanish influenza debate. When Spanish influenza arrived in Chile, doctors did not know what to make of it. They were aware that an influenza pandemic was ravaging other parts of the world and some Chilean physicians accepted that what they were witnessing in Chile was the same thing. There were other physicians, however, who, having tremendous influence over government and the medical profession, argued that what Chile was experiencing was not Spanish influenza but rather epidemic typhus, a disease normally associated with societies on the verge of collapse through war or famine. These physicians argued that Chile’s working-class and poor existed in such abject living and sanitary conditions that they had become the carriers of this apocalyptic disease. When it became impossible to refute the existence of Spanish influenza in Chile these physicians took the position that Chile was experiencing two epidemics concurrently: epidemic typhus and Spanish influenza. While it is possible that typhus existed in Chile, it is unlikely that what was experienced between 1918-21 was a typhus epidemic. On the balance of probabilities, it is far more likely than that the outbreak was solely Spanish influenza as some physicians had argued.

In Chapter 7, I examine the impact of Spanish influenza on Chilean society. The outbreak affected printing presses, tram workers, the military, schools, churches, hospitals and cemeteries. Quarantine and isolation measures, based on Chile’s earlier experience with Cholera, proved ineffective. Treatment advice was similarly ineffective and sometimes peddled by unscrupulous individuals.
Chapter 8 explores a micro topic within the broader story of Spanish influenza in Chile. It looks at the *Brigadas Sanitarias* (Public Health Brigades). These Public Health Brigades were established by the newly created public health authority and had the broad power to stamp out “typhus” wherever it was found. Many members of the Public Health Brigades were medical students, inspired by patriotism, their profession, and compassion for their fellow man. They were brave soldiers whose self-sacrifice sometimes cost them their lives. This noble endeavor, however, had its dark moments. The Public Health Brigades treated the working-class and poor paternalistically, ordering them to disrobe, wash, and even submit to invasive treatment such as shaving body hair. This generated tremendous resentment from poor and working-class Chileans. The darkest moment, however, was in 1919 in the southern cities of Parral and Concepción when Public Health Brigades, led by an overzealous physician, exceeded their mandate and forcibly removed hundreds of families from their homes. After weighing the value of “denominating them” to their market value, the Sanitary Brigade decided that it would be better to burn the homes to the ground. Entire neighborhood blocks were incinerated and hundreds of poor families were left homeless.

Chapter 9 assess the longer term impact of the typhus theory on Chile, concluding that it led to both positive and negative long term consequences. On the one hand, the typhus theory brought the plight of the working-class into focus. While I do not believe that the living conditions of the Chilean working-class were worse than those endured by the Russians during the Bolshevik Revolution, the Serbians during World War One, or the Egyptians during the famine of 1917, they were, nevertheless, bad and in need of remediation. The perception that the Chilean working-class lived in conditions which bred epidemic typhus made dealing with social inequities and the housing problem more pressing as these had become problems of national
security. On the other hand, the typhus theory stigmatized poor and working-class Chileans for decades following the influenza outbreak of 1918-21: it made them "others" in their own country, widening the gulf between them and the upper-class.

In Chapter 10, I offer concluding remarks and suggest further areas of research.
Chapter 2: Perceptions of National Decline and the Re-evaluation of Chilean Exceptionalism during the Early 20th Century

Chile, fertile and eminent province
From the famous Antarctic region,
From remote respected nations
Of strength, principal and power;
The people that are born are so great
So proud, gallant and bellicose,
That no king has been able to rule
Nor has any foreign power been able to subjugate.\(^{38}\)

These are the immortal words of Spanish conquistador Alonso de Ercilla in his epic poem, *La Arauacana*, written between 1569 and 1589. The poem recounts Ercilla’s experiences in the frontier war between the Spanish and “Araucanian” Indians of southern Chile.\(^{39}\) The Araucanians were a group of warrior, hunter-gatherer, tribes who gained notoriety, of mythological proportions, for having resisted the invasion of their lands by the Incas, the Spanish and the Chilean State for over 400 years. The Araucanians occupy a curious place in Chilean history. The real Araucanian has been shunned, denigrated, and marginalized, while the mythical Araucanian has been idealized, celebrated, and appropriated into the national mythology.\(^{40}\)

During the War of the Pacific (1879-1884), powerful imagery of the mythical Araucanian (including Ercilla’s poem) was harnessed to explain feats of bravery and to make emotional and

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\(^{38}\) *La Araucana*, ed. Abraham König (Santiago: Imprenta Cervantes, 1888), 1.1.3.

\(^{39}\) The indigenous people of southern Chile were a collection of different aboriginal groups, the Mapuche being the most prominent. The Spanish labeled them, collectively, as the Araucanians and the area of southern Chile where the frontier wars were fought as La Araucania.

hyperbolic pronouncements about the uniqueness of the *raza chilena* (Chilean race). The idea that there was something unique and exceptional about Chile and Chileans was the essence of the Chilean exceptionalism historical narrative that dominated the post-war/nitrate boom era (1884-1916). The Chilean exceptionalism historical narrative took root during the War of the Pacific and was explained in terms of race, religion, social organization, military prowess, and economic strength.

In this chapter, I explore the Chilean exceptionalism historical narrative and its offshoots with a view to understanding how feelings of destiny, confidence, and exuberance permeated the national mood, in the late 19th century, only to come crashing down, in the early 20th century, with the “moral crisis” and the “national decline” counter-narratives. These counter-narratives established a national mood, in 1918, that conditioned physicians and politicians to accept the argument that social conditions had deteriorated to the point that the 1918 disease outbreak could not be anything other than typhus even though there was every logical reason to believe that it was influenza. According to proponents of the typhus theory, the death and sickness that overwhelmed Chile between 1918-21 was largely the result of typhus, not Spanish influenza.

While epidemic typhus outbreaks certainly occurred in the early 20th century, they occurred in places where war and famine led to severe overcrowding and shortages of water necessary for bathing and laundering. In order for Chilean physicians and politicians to have accepted that, in 1918, Chile was overrun by epidemic typhus, they first had to accept that Chilean society had degenerated to the point that conditions were equivalent to those found in war-torn or famine stricken areas of the world. Thus, the medical diagnosis of typhus was predicated upon a social diagnosis of national decay.
2.1. The War of the Pacific (1879-1884): Roots of Chilean Exceptionalism

In the early 20th century, Chile was at a crucial turning point in its history. Behind it lay a quarter century of momentous change.

From 1879 to 1884, Chile had been at war with Peru and Bolivia in a conflict over nitrate-rich land in what is, today, northern Chile. Chile refused to acknowledge Bolivia's claim to sovereignty over the desert area of Antofagasta which was rich in valuable nitrate resources. Peru was dragged into the conflict after Chile alleged that Peru and Bolivia had entered into a secret military pact. The War of the Pacific marked the first time that modern, ironclad, warships had been used in naval battle in the region: Peru had the Independencia and the Huascar while Chile had the Blanco Encalada and the Cochrane. Once Chile had subdued Peru’s navy, a land invasion of the Peruvian capital, carried out by almost twenty thousand Chilean soldiers, followed. Peru was under Chilean military occupation for two years while a guerrilla war was fought deep in the Peruvian sierra. War was concluded with Peru, in 1883, though a treaty that resulted in: the surrender, to Chile, of control over the Peruvian provinces of Tacna and Arica; monetary indemnification, to Chile, for the cost of the war; and unconditional and perpetual sovereignty, for Chile, over the nitrate rich province of Tarapacá. In 1884, Chile and Bolivia signed an armistice agreement. Chile never recognized Bolivia’s claim of sovereignty over Antofagasta which remains an important resource-rich province, in northern Chile, and an ongoing source of political tension between the two countries. Bolivia, a landlocked nation, continues to dispute Chile’s sovereignty over Antofagasta, attributing its country's underdevelopment, in part, to its lack of direct access to the Pacific Ocean. In 1929, Tacna was returned to Peru, but Chile kept Arica, which today stands as the country’s most northern border.
In the wake of the War of the Pacific, Chile’s land mass grew by one-third, its treasury increased fourfold, and it had the largest navy along the Pacific coast, second only to that of the United States. Chile was not only a regional military power, but also a regional model of institutional stability. During the war years, Chile upheld its constitution and conducted presidential and congressional elections without interruption. This is not to say that the Chilean liberal democracy was perfect. A significant portion of the population was disenfranchised. The aristocracy in Chile was strong and controlled cross-sections of the economy including banking, agriculture, and mining. Chile’s strength was in its institutional stability.41

The nitrate resources that Chile acquired as a result of the War of the Pacific fueled a quarter century of economic boom that was just as transformative as the war itself. Until the mass production of synthetic nitrate, in the early 20th century, Chile was the leading global supplier of natural sodium nitrate which fueled agricultural and weapons production in Europe. This new wealth sustained decades of commercial and industrial expansion in Chile. Large internal migration caused by the nitrate boom also led to major social changes in the working-class. According to Barbara Stallings,

Another effect of the Chilean nitrate boom was the formation of the first proletariat in Latin America. Because the mines were located in isolated parts of the north, it was necessary to import large numbers of workers from the south. Thus there were thousands of workers in remote areas, working under arduous conditions which led to the rapid formation of class consciousness.42


Economist Markos Mamalakis wrote that, for Chile, “the boom is almost as significant as the achievement of independence.”43

The success and prosperity of the post-war era made Chileans confident in their national destiny. This confidence shaped the perceptions that Chileans held of themselves, of their Latin American neighbors, and of Chile’s place in Latin America proper. Chileans attributed their success to the exceptionalism of their national institutions, citizenry, and their “race”.

2.2. Post War Chilean Exceptionalism

Chilean historiography has generally portrayed the War of the Pacific as an epic battle of David and Goliath proportions. In theory, the Peruvian and Bolivian armies outnumbered Chile’s army, but, in reality, many of the Peruvian and Bolivian reservists were unwilling combatants, poorly organized and under-equipped. It is also possible that, at the start of the war, Chile may not have been financially prepared to undertake the conflict, although its acquisition of nitrate mining assets, during the war, reversed this disadvantage.44 While Chile may have enjoyed certain military and, ultimately, economic advantages, the belligerents were probably more evenly matched than has been portrayed in Chilean, Bolivian, or Peruvian historiography.45

A centerpiece of the Chilean exceptionalism narrative is the theme of selfless patriotism which was not, simply, the result of disciplined civic duty but stemmed from the character of the Chilean people and the homogeneity of their race. Tomas Caivano wrote that during the

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occupation of Lima, Chilean Rear Admiral Patricio Lynch, touring an area hospital with French Admiral Du Thouars, asked Peruvian and Chilean soldiers what inspired them to battle. The Peruvian soldier reportedly said that he fought out of allegiance to his *hacendado* (landowner), while the Chilean soldier said that he fought in the defense of his country. This exchange purportedly led Lynch to exclaim: “This is why we won. Some fight for the Fatherland, while others fight for don so-and-so.”

The War of the Pacific was a watershed moment in the forging of Chilean nationalism.

Some Chileans felt that the country's military achievements in Peru and Bolivia could only be explained as national exceptionalism. The myth of Chilean exceptionalism held that Chileans were a unique people within South America, destined for greatness. It was Chile’s version of the America’s *Manifest Destiny*:

> And Chile, for its part, was obliged to fulfill its destiny, as the most secluded country in the American continent, having all the maritime liberties, commercial and port tax authority that are for its people the way to robust and great development.

Another newspaper editorial remarked:

> The time has arrived for Chile’s expansion; we have clearly seen that it is the design of Providence that has protected our soldiers. But to keep enjoying its protection, it is necessary that we do not forget that victory has been the fruit of the natural justice of our cause and our love and from our love and faith in God, the fountain of grace, power and justice.

Chilean Congressman, Máximo Lira, put Chile’s military achievement into historical context by highlighting the change in fortunes:

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46 Tommaso Caivano, *Historia de la Guerra de América entre Chile, Perú y Bolivia* (Lima: Lima S.A., 1979), 348. [Original 1883].


48 *Boletín de la Guerra del Pacífico* (Santiago: Editorial Andrés Bello, 1979), vol. 4, 1054.
But here we have arrived in Lima, in the old residence of the Spanish viceroys, in the same place where it was decreed that the future of Chile as an independent nation would not matter. We are in Lima, the city covered with our flags and imposing laws on the vanquished … we are the owner of their capital city and of their forts and ports, we are the arbiters of their destiny. What an immense glory for Chile!  

2.2.1. The "Roto Chileno": The Ethnic/Racial Basis of Chilean Exceptionalism

For some, this national mythology of exceptionalism had a racial element. Nicolas Palacios, author of *Raza Chilena*, described the racial basis for Chilean exceptionalism, theorizing that Chile's racial mix of Basque and indigenous Araucanian blood is what distinguished Chileans from other South Americans. The concept of “dueling races” was a prevailing theme during and after the War of the Pacific. The rhetoric, in both Chile and Peru, attributed the outcome of the war to race. The Peruvian aristocracy blamed the country's lack of racial homogeneity and its large numbers of indigenous people for the country's defeat, thereby endorsing the Chilean view that the attributes of Chile’s racial heritage contributed to its victory.

In his masterful examination of themes in Chilean history, Bernardo Subercaseaux explains that the idea of *raza Chilena* is to anchor the image of the *roto* as the ethnic basis of the nation. *Roto* means ripped or ragged. In Chile, it is a term used to describe commoners. During the War of the Pacific, the *roto* was the foot soldier. Like the Araucanian, the *roto* is another Chilean social construct that is, at once, based in reality and in mythology. The real *roto* is

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51 Maureira, “The War of the Pacific (1879-1884) and the Role of Racial Ideas in the Construction of Chilean Identity”.

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unrefined, vulgar, and held hostage by vice. The mythical *roto* is strong, fierce, patriotic, and brave. To be *roto* can be an insult or compliment.

Amongst scholars and legislators there is little consensus as to how to define the *roto*. Late 19th century conservative legislator and newspaper editor Zorobabel Rodríguez wrote that the word *roto* “cannot properly be called a *chileanism* because its genuine meaning is ragged and tattered. It has a peculiar use amongst us to refer to lower-class people, the same people that would be called cholos in Peru, and lepers in Mexico.”52 Salvatore Bizzarro offers the standard definition of the *roto* that focuses on his poverty and despair. Bizzarro explains that the term is used “for the inhabitant of an urban shanty town or indeed for any lower-class city dweller and, by extension to any poor person.”53 Echoing him, Mimi Baez Kingsley defines *roto* as a “Chilean type of the lower class.”54 Sociologist Alberto Cabero gives a lengthy laundry list of the *roto’s* characteristics—physical and social—but this list is so extensive and captures almost every human virtue, and defect, that it cannot be relied upon as a workable definition.

There are some aspects of the *roto*, particularly his physical attributes and his low socio-economic status that are commonly discussed. Most Chileans would agree that the *roto* is generally a member of the working-class or an urban slum dweller. However, even this vague “definition” is not reliable because the idea of the *roto* is also an attitude that can be possessed by almost any Chilean, regardless of ethnic composition or socio-economic status. Indeed, Arnold Chapman comments that the “*roto* exists less as an actual person than as a belief in a national

52 Zorobabel Rodríguez, *Diccionario de Chilenismos* (Valparaíso: Ediciones Universitarias, 1979) [original 1875].
54 Mimi Báez Kingsley, “Chilenismos,” *Hispania* (USA) 50, no. 3 (September 1967), 552; See also Edna Coll, *Chile y los chilenos en las novelas de Joaquín Edwards Bello* (San Juan, Puerto Rico: Ediciones Juan Ponce de León, 1965), 157.
institution.”

This becomes apparent in the following dialogue between a Chilean and an American worker (note the roto’s dialect of Spanish):

—vea usted, pues hombre. Yo también soy roto. Y al decir esto, mostrable una rotura de sus pantalones. Dióle una mirada el roto auténtico y le replicó

—Rotoso herís; pero pa roto te farta mucho…

These examples point to at least one consistency: the roto is a binary concept. The concept can be applied positively or pejoratively. Although he is typically portrayed as a working-class figure, it is not uncommon, today, to hear of a celebrity or a wealthy person referred to as a roto encachado (a swell roto). The roto can also be a member of the underclass; that is, a person so poor he does not fit into a conventional class category. Living in the slums, commonly referred to as callampas, and suffering from chronic unemployment, some of these rotos are forced into a life of criminality. Clearly, the idea of the roto defies socio-economic categorization. Nor is the roto bound to racial or ethnic categories. He can be Araucanian, mestizo, or “white”.

At the turn of the 20th century, the concept of the roto as the valiant hero of the nation, embodying all that is good, served as an ethnic/racial basis to explain Chilean exceptionalism. Subercasaeux writes, “the roto best preserves the national spirit uncontaminated and without foreign perversion.”

According to Nicolas Palacios’ interpretation, discussed above, the roto resulted from the union of Chile’s Araucanians and the Basque Spaniard. Both ethnic groups, in Palacios’ opinion, possessed extraordinary and racially determinant virtues that combined to create a super race. The mythical Araucanians were revered for their ferocity, strength and valor,

while the Basques were revered, stereotypically, for their industriousness, hard working nature, and being more Germanic than Latin. Through the construct of the *roto*, Chileans dodged the race question that so troubled other racially heterogeneous countries in Latin America in the face of the social Darwinian philosophical paradigm of the late 19th and early 20th centuries.\textsuperscript{58}

2.3. The Decline of Chilean Exceptionalism and the Coming “Moral Crisis”

By the early 20th century, the national mythology of exceptionalism was fading. There was a growing perception, amongst the political elite, that Chile was slipping into decline. Some Chileans spoke of Chile’s *inferioridad económica* (economic inferiority), while others expressed distress over the political instability of the Parliamentary Republic (1891-1925). The 1891 Civil War ended an era of stable, predictable, conservative, presidential rule that had begun in 1830. Still others spoke of a "moral crisis" in leadership and civic responsibility. There was also a general perception that social vices were corroding society from within and affecting not only the present-day well-being of the country but its future productivity and social health.

\textsuperscript{58} Maureira, “The War of the Pacific (1879-1884) and the Role of Racial Ideas in the Construction of Chilean Identity”.
2.3.1. Social Malaise: "La crisis moral"\textsuperscript{59}

It seems to me that we are not happy. There is a notable malaise not just amongst certain classes of people or certain regions, but amongst the general population of the country. The leisure of yesterday has turned into struggle, the hard work into laxity, confidence into uncertainty, hopes into lies.\textsuperscript{60}

By the early 20\textsuperscript{th} century, there was a growing perception amongst many Chileans that the greatness of Chile was waning. On August 1, 1900, Enrique Maclver, a politician from the Partido Radical (PR), a left-of-center, anti-clerical, urban working and middle-class party that enjoyed considerable support at the time, made a speech before the Ateneo Club in Santiago in which he lamented the country's economic decline, its foreign dependence, and the rise of crime, declaring:

I speak of a morality that gives efficacy and life to the functions of the State and without the functions of the State becomes perverted and vanishes altogether inviting despotism and anarchy, and leads to oppression as an inevitable consequence; this hurts the common good, public order and national progress.\textsuperscript{61}

The “moral crisis,” as it came to be known, was a lament over a perceived national decline and a critique of Chilean historiography. In 1910, a school teacher named Alejandro Venegas, writing under the pseudonym Julio Valdés Cange, penned \textit{Sinceridad Chile íntimo en 1910}, a book inspired by his travels throughout Chile.\textsuperscript{62} In this work, Venegas criticizes the ruling class for its opulence and waste during the nitrate boom. The ruling class' self-centered agenda led to a wasted opportunity to extend Chile’s greatness following the War of the Pacific.

\textsuperscript{59} “The moral crisis”

\textsuperscript{60} Enrique Maclver, “Discurso sobre la crisis moral de la República,” \textit{El Ateneo}, 1 August 1900, p.1.

\textsuperscript{61} Enrique Maclver, \textit{Discurso sobre la crisis moral en la República} (Santiago: Imprenta Moderna, 1900), 3.

\textsuperscript{62} Julio Valdés Cange, \textit{Sinceridad Chile íntimo en 1910} (Santiago: Imprenta Universitaria, 1910).
and its myopia resulted in the abandonment of the working-class and the widening of the gulf between rich and poor.

For a nation that prided itself on its military conquests, institutional stability, and regional economic power, the fact that Chile’s infant mortality rate, in 1900, was a record breaking 502 per 1000 (or 50.2%) was not only a tragedy, but an embarrassment, to those who, a generation earlier, had boasted of Chilean exceptionalism. Housing in Chile was particularly disastrous and would, as will be seen in subsequent chapters, become a hot button issue in the country’s public health debate during the Spanish influenza pandemic. Rooms in the conventillos could be quite small. In one documented case, a laundry woman lived in a room that was 2.7 m (8.9 ft) x 2.7 m (8.9 ft) with a height of 3.5 m (11.5 ft). The room was divided in a way that allowed her to have two levels. Her work space was on the main floor and her bed was on the second floor.63 In one extreme case, a person lived in a room that was only 1.2 m² (3.9 ft²).64 Having witnessed these realities in his travels, Venegas famously wrote:

We have armies, warships, fortresses, cities and ports, theatres and racetracks, clubs, hotels, public promenades, monuments, and opulent magnates, lords of true dominions, who live in splendid palaces, but at no great distance from the theatres, gardens, and lordly residences there lives the people, that is to say nine tenths of the population of Chile, plunged in the most fearful economic, physical and moral poverty, and degenerating rapidly through overwork, poor diet, lack of hygiene, extreme ignorance, and the grossest vices.65

Part of the malaise was fueled by intense introspection caused by the arrival of the nation’s Centenary. Chileans reflected on what they had accomplished in one hundred years of independence and considered where their country was headed. Rampant poverty, disease,

63 MERC (Valparaíso), 1 January 1906, p. 1 cited in Carrasco, Los Conventillos de Valparaíso, 127.
64 Carrasco, Los Conventillos de Valparaíso, 128.
65 Julio Valdés Cange, Sinceridad Chile íntimo en 1910 (Santiago: Imprenta Universitaria, 1910), 250.
political dysfunction, opulence, and economic mismanagement through the perceived give-away of its natural resources (i.e. nitrate and copper) generated a sense of indifference amongst Chileans. Mónica Echeverría writes:

My intellectual friends impugn this wasteful and useless centenary. What have we really accomplished in the past century as far as the development and well being of all of our citizens goes? Tacredo Pinochet, Nicolás Palacios, Francisco Encina, Luis Galdames, Alejandro Venegas…criticize the governing class; the lack of an industrial nation; the wastefulness of the education system; the bitter and unjust situation of the common man.  

The “moral crisis” was also an articulation of grievances common throughout the industrial world. In Chile’s case, the ruling aristocracy was unable to recognize that Chile was transitioning into a modern state and, as a result, did little to prepare the country’s institutions and political environment for social transformation. The dawn of mass production and rapid urbanization made many in the industrial world, including in Chile, reflect on hardships, gross inequities, crime, poverty, and the inhumanity of capitalism. This was the time that Rerum Novarum was issued. This papal encyclical denounced the excesses and abuses of capitalism, particularly as it pertained to labor. At this time Marxism, Anarchism, and trade unionism also gained adherents.

In Chile, a generation of novels depicting the cruelty of industrial capitalism went into wide circulation, among them El inútil and El roto. The latter is a historical fiction of the lives of the urban poor in Santiago, written by acclaimed writer and journalist Joaquín Edwards Bello whose social conscience, concern for the poor, and criticism of the Chilean establishment put him at odds with fellow members of Chilean aristocracy.


For many Chileans, the 1891 incident known as the USS Baltimore affair represented a tangible symbol of their country's national decline. In October 1891, a bar brawl broke out between Chilean sailors and American sailors, from the USS Baltimore, who had been on shore leave in Valparaíso. Two American sailors were killed, others badly beaten or jailed. The infuriated American President, Benjamin Harris, issued an ultimatum to Chile that raised the specter of war. To diffuse the situation and avoid war, the Chilean government made reparations and issued a statement of apology. An official from the American delegation commented that the Chilean apology was a “very humiliating letter for these proud people to send.”

Many Chileans were angry that such an apology was made at all. Since the end of the War of the Pacific, Chile had thumbed its nose at the United States as that country’s diplomatic envoys tried to broker post-war settlement discussions between Peru and Chile. Chile did not much care for American involvement in its affairs, particularly since the Americans tended to side with Peru. The USS Baltimore affair was a real sign that Chile’s short-lived days of regional hegemony were coming to an end.

Around the same time, the Araucanians were dealt a crushing defeat by the Chilean army and the south was “pacified”.

In a very short span of time, Chileans experienced monumental changes and unprecedented wealth. It is difficult to sustain such an intense level of exuberance and expansion. Maybe the “moral crisis” was not necessarily a reflection of things that had gone bad in Chile, perhaps it was simply a return to reality.

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2.3.2. Economic Decline

Concurrent with the theme of “moral crisis” was the perception that Chile was in economic decline. This is an interesting phenomenon because the first quarter of the 20th century was, perhaps, Chile’s most prosperous era since independence. According to economist Markos Mamalakis, “The golden era was between 1905 and 1920, when the annual growth rate of government investment expenditures was 10.5 percent for the whole period, 16.6 percent for 1910-20, and 23.0 percent for 1915-20.”\(^6\) Figures 3 to 6, below, concerning revenue and trade confirm Mamalakis’ conclusion.

\(^6\)Mamalakis, *Growth and Structure of the Chilean Economy*, 73-74.
Figure 3: Chile - Public Revenues and Expenditures from 1857 to 1916 (Gold Pesos of 18d).


Figure 4: Chile - Revenue to Expenditure Surpluses and Deficits from 1857 to 1916 (Gold Pesos of 18d).


Figure 5: Chile - Exports and Imports from 1857 to 1916 (Gold Pesos of 18d).


Figure 6: Chile - Balance of Trade from 1857 to 1916 (Gold Pesos of 18d).

If the first quarter of the 20th century were Chile's boom years, then what led Francisco Encina to make his famous declaration of Chile's “economic inferiority?” Much of this debate had to do with economic policy and opportunity. There was a sense that the nitrate riches, which Chilean soldiers had died defending, were being given away to foreign and domestic interests at the expense of every day Chileans. The ruling oligarchy of the Parliamentary Republic was accused of opulent and wasteful spending habits. At a time when urban poverty and disease was on the rise, new mansions were being built and delegations of students, from affluent families, were being sent to Europe for advanced education, financed by the country’s resources.

A Buenos Aires newspaper cited in El Mercurio wrote: “Chile…is corroded to the heart by the poison of nitrate. Nitrate has been for Chile like the famous wine of the Borgias: among the grains of the fertile nitrate is hidden the poison that enervates, rots and kills…” The last quarter of the 19th century brought fundamental changes to Chile that would leave a lasting impact on its development as a nation in every respect. Nitrate exports fuelled economic development but also exacerbated certain fiscal problems such as the gold standard debate. The orero-papelero debate was another episode that seemed to reinforce the idea that Chile was in a downward spiral. The oreros essentially accused the papeleros of pursuing a monetary policy that was self-interested and harmful to the national economy.

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2.3.3. Monetary Policy – The "Orero-Papelero" Debate

Following the War of the Pacific, the Chilean legislature was dominated by the landowning elite who favored paper money (the *papeleros*). The *oreros*, those that believed in the gold standard, accused the landed aristocracy of imposing a monetary system that favored their interests. According to the *oreros*, the *hacendados* intentionally inflated the country's money supply by issuing as much paper as possible so that they could later re-pay their mortgaged land with devalued paper pesos. The accusations may have been exaggerated. In his work, René Millar demonstrated that Chilean landowners were among the most vociferous proponents of the gold standard.\(^7^1\)

The *oreros* saw money as a store of value. They fiercely opposed government involvement in the banking sector particularly as the lender of last resort. Preferring monetary stability over flexibility, the *oreros* favored the gold standard’s natural tendency towards a fixed exchange rate. The problem with a fixed exchange rate, however, was that money supply was entirely dependent on external balance (i.e. balance of payments resulting from inflows and outflows of capital). Under the classical gold standard system, there were only two ways for government to substantially increase its money supply: trade or acquire more gold.

By the late 19\(^{th}\) century, only negligible amounts of new gold were being discovered. The world supply of gold was fairly fixed and nations jealously guarded their supplies.\(^7^2\) By 1879, Chile’s gold reserves had been virtually wiped out due to the imbalance between the country’s legal ratio and the prevailing market ratio which caused gold to be exported from the country. In

\(^7^1\) René Millar Carvacho, *Políticas y Teoría Monetarias en Chile, 1810-1925* (Santiago: Universidad Gabriela Mistral, 1994).

the international arena, trading transactions were conducted in gold. Thus, trade deficits led to a reduction in Chile’s gold reserves and trade surpluses led to an accretion. Coping with trade deficits was aggravated by the combined effects of being on the gold standard and having inadequate gold reserves. During Chile’s brief stint with the gold standard (1895-1898), bank depositors rushed to withdraw their gold, fearing that the payment of trade deficits would lead to a reduction in the supply of gold which might affect their deposits. This caused a run on the bank.

Chilean history has treated the papeleros harshly. Banker and university professor Guillermo Subercaseaux, banker and senator Agustín Ross, and esteemed Professor of Economics Roberto Espinoza were the main authors of this negative campaign. In his treatise, Ross accuses the Chilean landowning class of self-interest in promoting paper money at the expense of the national interest. Ross wrote, “the principal ones who, in Chile, profit by the depreciation of the paper monetary unit, are the owners of agricultural property.” Elaborating further, he wrote,

The forced currency is favorable to the farmers and owners of agricultural property seeing that beneath its protection they may despoil their creditors without the latter uttering lamentations nor bitter complaints. The agriculturalists have also been, as a matter of fact the most decided supporters of the paper money.

Espinoza directed his criticism mainly at the banking sector, for what he felt were its imprudent practices, and at the government for enacting liberal banking laws that permitted banks to issue bank notes with few restrictions. Espinoza also blamed agricultural interests that benefited from the lax banking rules:

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73 Agustín Ross, Chile 1851-1910: Sixty Years of Monetary and Financial Questions and of Banking Problems (Valparaíso: Imprenta Inglesa Westcott & Co., 1919), 129.

74 Ibid., 135.
The laws of conversion that we have examined, are the fruits of the parliamentarian period, incorporated into our democracy with the sole purpose to entrench, even more so, the predominance of our oligarchy in the government of the country.75

Later, Frank Fetter and Edwin Kemmerer would perpetuate these accusations. Fetter wrote:

There is something of a paradox in the fact that a country ruled in the past by a conservative aristocracy, with so stable a political history and so excellent a public record, should have had so checkered a monetary experience. This explanation is to be found principally in the heavy indebtedness of the landed gentry, and their dominance in government affairs.76

Indeed, one has to question how important it really was for Chile to go to the gold standard. An article in Bankers Magazine suggests that many major transactions and even smaller transactions in nitrates—Chile’s largest industry—were contracted in pounds sterling:

Due to the fact no doubt that for years the commerce of Chile was almost entirely in British hands and that she has been financed to so great an extent by England, the people are, one might say, more accustomed to thinking in terms of sterling than in their own money. Then again, nitrate, the dominating factor of the country, coal, copper and some other commodities, are bought in sterling. Even the export tax on nitrate may be paid in part with “good” ninety-day sight bills on London, i.e. bills drawn by banks and mercantile houses which have given security to and have arranged with the Government that their bills be taken for this purpose up to a given amount77

The papeleros were also criticized for not doing enough to rescue the Chilean economy from economic crisis. The government’s need for more money could only be satisfied by direct taxation of the landed elite. This measure was flatly rejected in Congress, however. “These charges,” comments historian Paul Drake, “reflected a broader negative image of affluent

75 Roberto Espinoza, La Reforma Bancaria i Monetaria de Chile (Santiago: Imprenta Barcelona, 1913), 267.
76 Frank Whitson Fetter, Monetary Inflation in Chile (Princeton: Princeton University Press, 1931), viii.
latifundistas exploiting the masses.”78 Edwin Kemmerer, an influential early 20th century American economist whose economic advice to Latin American governments earned him the nickname "money doctor," dubbed the landholding elite in Chile the “debtor classes” and claimed their agenda “corrupted the currency.” According to Kemmerer, “The big landed interests were for years the most powerful forces both in congress and out favoring paper money, the device which enabled them to reap what others sowed.”79 How much of this criticism was true? The truth lies somewhere in the middle; but it would be fair to describe the oreros as a very loud and aggressive bunch who, in terms of history, got more attention than they really deserved.

There is evidence to suggest that the monetary debate was, for the most part, a furious one that raged in government, academic circles, and amongst members of the elite. Occasionally the debate breached these arenas and found its way into mainstream Chilean society, as was the case with organized labor. But labor’s anti-papelero position was driven more by its acceptance of orero propaganda than by its own understanding of the problem. At least two separate newspaper articles expressed exasperation with the orero position. El Mercurio wrote,

The Honorable Deputies that patronize the project of the learned economist, Mr. Subercaseaux, and this renowned professor himself, must recognize the right of the great mass of their fellow-countrymen, those of us who know nothing of Economy and who only aspire to be allowed to work in peace, of uttering in a bitter cry, that is the echo of painful experience and the voice of a poor country devastated by economic laws…for goodness sake leave us in peace.80

Around the same time, Chile’s other major publication, El Ferrocarril, lodged a similar complaint:


During the recent debate on this matter it has been proved over and over again that attempts to impose any solution to the present state of the monetary regime are far from imminent and that they produce the opposite effect causing distortions that inflict disaster on public and private fortunes…we recommend that this debate not be revived and that we come to an acceptance of the current state of affairs.  

Public disinterest aside, the gold standard seemed to be more trouble than it was worth. It was fragile and inflexible. In 1927, two years after Kemmerer convinced Chileans to return to the gold standard, an article in a French journal, which featured excerpts from an interview with the Chilean Ambassador to France, revealed some of the serious limitations of the gold standard. His Excellency Armando Quezada Acharan credited monetary stability in Chile to the country’s return to the gold standard, but warned that it could easily be shattered if a severe economic crisis forced Chile to incur huge foreign expenditures (e.g. loans) or a budget deficit.  

Acharan spoke from the experience of the First World War when every country on the gold standard was forced to abandon it, with the exception of the United States. As elsewhere, the Chilean economy suffered when the war broke out. Subercaseaux wrote, The first telegraphic announcement of the declaration of war in Europe naturally produced a great sensation in Chile, as well as in all the other South American republics. In the principal commercial and industrial centers the dominating thought centered about the course the conflict would take. The economic life of Chile, as also of South America in general, was so closely bound up with that of Europe that it could not fail to feel the show which was necessarily produced.

Evidence suggests, however, that Chile’s monetary policy allowed it to respond to the declaration of World War One with greater flexibility. The Valparaíso and Santiago stock markets were closed for several days and the exchange rate fell from 9.5d in July 1914 to 7.6d in December 1914. Interest rates also rose to alarming levels. Subercaseaux acknowledged that Chile avoided damaging bank runs at this time because it was not on the gold standard. Had it been on the gold standard, depositors would have surely withdrawn and hoarded their gold

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81 El Ferrocarril, 10 June 1910.


83 Guillermo Subercaseaux, Monetary and Banking Policy of Chile, ed. David Kinley (London: Clarendon Press, 1922), 156.
deposits as occurred in Argentina. In his words, Chile’s paper money regime “lent no incentive to private hoarding.” Had Chile been on the gold standard, the economic crisis triggered by the First World War could have endured much longer. Instead, the Chilean economy quickly rebounded and began to recover in 1915.

Recovery was primarily due to the government’s ability to assist those Chilean banks that were experiencing liquidity troubles caused by the large withdrawals of institutional depositors, mainly German banks. The Chilean government deposited £1.5 million in the Caja de Emisión y Conversión which credited three of Chile’s main banks. These banks, in turn, printed 30 million pesos in denominations of 5,000, 1,000, and 500 pesos, which augmented the national monetary circulation to 65 million pesos in 1914. The increased circulation of notes also enabled the government to provide temporary relief to the nitrate industry which had suffered a sharp decline at the start of the war.

The danger of over issued currency and monetary inflation dissipated as confidence in the banking system was restored and the nitrate industry, having weathered the initial shock of the war, worked to keep up with the sharp increase in worldwide demand for nitrate. Subercaseaux wrote that, “the critical period which had begun with the declaration of the war came to an end and was immediately followed by a period of extraordinary economic and financial prosperity.”

The government would not have been able respond to the banking and nitrate industry crises had Chile been on the gold standard. Had it been on the gold standard, Chile would have

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84 Ibid., 157.
85 Ibid.
86 Fetter, Monetary Inflation in Chile, 137.
87 Subercaseaux, Monetary Banking Policy of Chile, 159.
had to do what so many other countries did to resolve their crises: simply abandon it. During the war, the worldwide flow of capital was severely limited. Expansion of the money supply in Chile would have been dependent on these flows of capital. For the remainder of the war, the 18d peso fuerte actually appreciated in value from 18.05d in 1915 to 23.70d in the first half of 1918.\footnote{Agustín Llona, “Chilean Monetary Policy, 1860-1925” (Ph.D. diss., Boston University, 1990), 248.} Chile’s gross domestic product also rose sharply to 1,563 million gold pesos in 1918, at the time, the highest percentage in Chile’s history.\footnote{Equivalent to $US1300 per capita. Ibid., p. 249.}

2.3.4. Dependence on One Product

To a great degree, many of Chile’s economic problems relating to currency fluctuations and inflation had more to do with its rapid growth and its reliance on one product: nitrate. Urban and rural workers were hit hard by the effects of inflation. In the early 20\(^{th}\) century, sixty percent of working-class household income was devoted to food purchases.\footnote{OCT, Boletín de la Oficina del Trabajo, vol. 12, no. 18 (1922), p. 97 cited in Ibid.} It must be said, however, that the inflation rate for food stuffs during the late 19\(^{th}\) and early 20\(^{th}\) centuries never exceeded the overall inflation rate.\footnote{Ibid.} This indicates, clearly, that inflation was high throughout the economy, a natural consequence of the massive economic expansion unfolding, not as a result of the deleterious effects of paper money.

In Mamalakis’ view “the boom is almost as significant as the achievement of independence.”\footnote{Mamalakis, The Growth and Structure of the Chilean Economy, 38.} One needs to appreciate that in 1883, when Chile annexed Antofagasta,
Tarapacá, Arica, and Tacna (Tacna was later returned), its territory was augmented by one third. Suddenly, Chile had to provide infrastructure and development for this newly acquired land. It also had to go through major adjustments due to the quadrupling of its treasury. These were sudden and major changes to the geography and economy of the country. Chile's new northern territories were not just wastelands to be ignored by the government. We know that the Chilean government invested major amounts of money in infrastructure, social programs and resettlement campaigns in Arica and Tacna in anticipation of the, repeatedly delayed, plebiscite to determine the fate of those two provinces. The government was determined to Chileanize the north in order to consolidate its power there. In addition, Chile had also “conquered” the south and was determined to hold its position there lest Argentina lay claim to more land. The sheer military expenditures during the post-war years were incredible. Tensions between Argentina and Chile loomed; indeed, they almost went to war again in 1898. In addition, matters with Bolivia were never resolved. Bolivia maintained its claim to the sea, never concluded a peace treaty (though it did sign an armistice agreement), and never resumed full diplomatic relations with Chile.

Even in difficult times, however, the strength of the Chilean economy was in its fiscal discipline. Consider Figures 3 to 6, above, that illustrate not only disciplined fiscal and trade management, but even fiscal and trade surpluses. In fact, Chile’s finances were solid enough that, in 1901, the New York Times revealed that despite having been granted a £3,000,000 loan, the Chilean government decided the loan was not required since nitrate duties that year had produced a surplus in excess of the amount needed. In this context it is hard to comprehend the orero position of a need for radical change.

93 Raúl Palacios Rodríguez, La chilenización de Tacna y Arica, 1883-1929 (Lima: Editorial Arica, 1974).

Following the War of the Pacific, the newly acquired nitrate deposits resulted in a sharp spike in government revenue and spending. From 1857 to 1916, the government showed remarkable fiscal discipline, keeping revenues and expenditures within range. The graphical representations in Figures 3 to 6, above, highlight a 60 year tradition of fiscal responsibility that only improved following the acquisition of the northern territories. The evidence does not support the orero position that post-war government spending and finances were mismanaged in favor of the conservative landowning elite.

Between 1822 and 1875, the Chilean government contracted 10 foreign loans, all of which were paid and cancelled.95 There were two suspensions of payment during this period because of globally erratic exchange rate fluctuations. There were also payment suspensions during the War of the Pacific. In should be noted, however, that the suspensions were never the result of government decree, but rather the result of mutual refinancing arrangements. Even during the 1891 Civil War, the government in Santiago and the Central Junta in Iquique diligently made loan payments to London lenders, resulting in an overpayment. The majority of foreign credit came from German and English lenders. The Rothschilds, alone, lent Chile over £4 million. Wright notes that the “existing loans on bonds and treasury notes have been met with scrupulous exactitude and never, since 1885, has there been a day’s delay in the payment of the obligations to which the faith of the government was pledged.”96

Between 1882 and 1925, the Chilean economy came to rely on nitrate not just for its prosperity, but for its very survival. One journalist described Chile’s dependency on nitrate as follows:

95 Marie Robinson Wright, The Republic of Chile: The Growth, Resources and Industrial Conditions of a Great Nation (London: George Barrie & Sons, 1904), 56.

96 Ibid.
Since not only the prosperity of Chile, but also the financial machinery of the Government depend to a considerable extent upon the condition of the nitrate and copper industries of the country, it is only natural that economic crises, characterized by widespread deprivation and misery, have occurred from time to time since the establishment of Chile as an independent country. In certain periods, disturbances of economic have occurred due to other causes, such as wars and earthquakes, but the most severe cases have found their origin in the economic structure of the country.97

The government’s over reliance on the nitrate industry, not only for revenue but also as major source of employment, coupled with the tax immunity enjoyed by Chileans accentuated the economic crisis that followed the collapse of the nitrate industry which occurred just as suddenly as the boom.98 Sherwell notes the important impact that nitrates had on public works and income tax: “Nitrates led to undertaking the financing of large projects for public work, which in other countries would have to be largely from domestic taxes.”99 While nitrate revenues were used constructively to build infrastructure and fund education, Mamalakis concedes that there were instances of waste. He cites, for example, the use of these revenues to pay for government employee wages and raises. The big mistake was to treat nitrate revenue as ordinary rather than extraordinary income. Doing this led to a reduction in other stable sources of ordinary revenue that should have been maintained.100

In their campaign against papelero monetary policy, the oreros attributed many of Chile's economic woes to the volatile exchange rate. The truth of the matter, however, was that many of Chile’s problems with inflation and instability of commodity prices were due to the structural realities of its economy. Increases in commodity prices are typically accompanied by a rise in the


99 Butler, “Banking Evolution in Chile,” 257.

value of currency. The rise in currency increases the cost of manufacturing and industrial production and the export of those items which, if serious enough, will inevitably push companies to cut operating costs.\textsuperscript{101} Labor is always the first target.

The best of both worlds would have been an increase in commodities prices and exports while suppressing currency appreciation. That is exactly what the \textit{papeleros} tried to do. Permitting the appreciation of money in Chile would have only worsened industrial development and caused more loss of jobs. The \textit{oreros} wanted to have their cake and eat it too. They wanted the Chilean economy to continue to be driven by the commodities boom but they also wanted industrial expansion. In a developing country, industrial expansion and commodities booms are fundamentally incompatible without mechanisms to deflate inevitable currency appreciation. In the late 19\textsuperscript{th} century, the Chilean government took steps to reduce economic dependency on copper with a series of protectionist policies and investment in infrastructure.

2.4. Political Dysfunction: Civil War and the Parliamentary Republic

Along with the War of Pacific and the Nitrate Boom, the 1891 Civil War was a major turning point for Chile. The 1891 Civil War revolved around the balancing of Congressional and Presidential power. Following the adoption of a Constitution in 1833, the Chilean political system (similar to the American political system with an Executive, a bicameral Congress and an independent judiciary) gave greater power to the Executive. Following the War of the Pacific, this paradigm began to be challenged. Congress began to favor parliamentary system political ideals where cabinet is controlled by Congress rather than the President. Other layers of political

\textsuperscript{101} Llona, “Chilean Monetary Policy,” 200.
differences (secularization of State) were grafted onto this fundamental political division. Then, there was the towering figure of President José Manuel Balmaceda.

Balmaceda was a larger-than-life President. He was a gifted orator, skilled politician, and deal maker. During the Balmaceda presidency, public works dramatically increased and construction of infrastructure could be seen everywhere from new bridges and viaducts to roads and dry docks. During this time, approximately one third of the national budget was dedicated to public works. Despite these signs of progress, Congressionalist forces conspired, in Chile and abroad, to undermine Balmaceda. In early 1891, an open revolt ensued with Congressionalist forces securing the support of the navy and Presidential forces securing the support of the Army.

By August, Congressionalist forces were closing in on Balmaceda and it became apparent that he would lose. Balmaceda took asylum in the Argentine legation a block away from the Moneda (the Presidential palace) and handed control over to General Baquedano (hero of the War of the Pacific). Congressionalist forces arrived in Santiago, formed a Junta, and took control of the country. Balmaceda lived out the remainder of his presidential term in the legation, writing various letters and his political epitaph. On the day after the expiry of his term, too proud to surrender or go into exile, Balmaceda committed suicide with a gunshot to the head.

The victory of the Congressional forces in the 1891 Civil War ushered in the Parliamentary Republic whereby the balance of power was shifted from the President to Congress. The Parliamentary Republic was a chaotic time in Chilean history. Legislation was often delayed by the most junior parliamentarian and for the most inconsequential reason. Cronyism was rampant and debate was endless, so much so that a system was created to end debates. The Cabinet was a revolving door of Ministers. Federico Gil wrote:
Government in Chile reached its lowest ebb during the period of parliamentary rule. The degree of ministerial instability is shown by the fact that while from 1831 to 1866, a 55-year period, the Chilean government was headed by 31 Cabinets, in the 33-year period of the parliamentary republic there existed 121 different Cabinets with a total of 530 ministers.\textsuperscript{102}

When the Spanish influenza pandemic broke out in 1918, President Barros Luco had dozens of Ministers come and go in a rotary system he called *rotativa*. Chileans had little faith in their elected officials, neither of their competence nor commitment to Chile’s greatness. By 1915, civil society channels were molding a coherent alternative vision for their country that would coalesce, by 1920, following the election of President Arturo Alessandri.

Chapter 3: Daily Life of the Marginalized

Figure 7: “Los culpables de la miseria”

Yes Nemesio, you are the ones to blame for the misery of the people of this town. If instead of selling your vote, you sent men of public service to Congress, subsistence wouldn’t cost an eye and we would be able to properly feed our children.  

Everywhere the evidences of home comfort and happiness are seen. In the family life of the Chileans there is unity and happiness. Each member of the household has a share in its pleasures…The breakfast is a sumptuous meal, and an invitation to share it is a favorite form of Chilean hospitality. Some of the most agreeable social gatherings assemble at this hour. The Chileans dance well, and a knowledge of the piano is among the accomplishments of all Chilean ladies, some of whom have had a musical education under the best masters of Europe…The intellectual accomplishments of the Chilean family are carefully developed, and it is quite usual for young daughters to finish their education in Europe as for the sons to go there for their post-graduate studies.  

103 SUC 17, no. 846 (12 December 1918).

104 Wright, Republic of Chile, 125.
The quotes and the caricature—taken from different sources—highlight contrasting images of life in early 20th century Chile. In the quote to the right, Marie Robinson Wright, an American traveler writes about her perception of Chile. The caricature and quote to the left come from an upper-class socialite magazine. The two portrayals of life in Chile could not be more different. In one we are told that “breakfast is a sumptuous meal” and an occasion for the “most agreeable social gathering.” In the other, breakfast is a luxury and an occasion to bicker over a wretched existence. In Wright’s account, sons go off to Europe for post-graduate studies, while the children in the caricature would have been lucky to have learned how to read. Many Chilean children of humble origin in the late 19th and early 20th centuries simply could not afford to go to school. They worked in perilous conditions, with little to no meaningful legal protection and were robbed of childhood so that they could help support their families.

In the caricature, the house wife chides her husband for vote selling. Agricultural laborers, struggling to survive, may not have understood or cared about participating in a political process that seemed so out-of-touch and unresponsive to their everyday needs. Votes would gladly be sold for valuable consideration, and not just by the working-class. Wealthy Chileans also participated in this corrupt practice. Of the practice, one Chilean newspaper noted, “for every independent voter, there are two or more who sell their vote.”105 It is clear that at least some segments of the ruling class believed that the poor were makers of their own misfortune, a theme that would resonate in the typhus-influenza debate.

The steadfast conviction of some physicians and politicians that the outbreak in 1918 was typhus said a lot about their perception of the working-class and poor whom they portrayed as too irresponsible to care for themselves and their families: they were incapable of something as basic as regular bathing and laundering. As a result, the working class and poor were seen to put

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themselves and their country in danger. They were “los culpables de la miseria” [authors of the misery].

This chapter explores the social conditions of Chile’s urban working-class in an effort to contextualize the magnitude of their vulnerability during the Spanish influenza pandemic. Public health dominated many government policy debates, often exposing a myriad of other overlapping social stresses such as vice, poverty, work place safety, child labor, infant mortality, housing, sanitation and education. These debates influenced, and were influenced by, key political figures in Chilean politics. Future President Arturo Alessandri, for example, wrote his law degree thesis on the housing and living conditions of the poor. Alessandri declared, “It should be no surprise to see the incredible mortality in Chile, mortality largely attributable to the poor hygienic conditions of our lower classes.”

Salvador Allende, another future President, wrote his medical school thesis on “Mental Hygiene and Delinquency.” On the importance of housing in the fight against tuberculosis, Allende wrote: “Public authorities should initiate public health projects related to housing; and should stop all construction that does not meet minimum hygiene standards whether in urban or in rural settings.”

3.1. Demographics of Santiago

In the first half of the 20th century, working-class and poor people generally lived in the periphery of Santiago and Valparaíso. In the case of Santiago, DeShazo writes that, in 1927, the movement of working-class suburbs was to areas north and west of Santiago, at the time

106 Arturo Alessandri, “Habitaciones para los obreros” (law thesis, University of Chile, 1892), 5.


occupied by middle/upper class districts. The latter eventually migrated to the eastern and southern corners of the city. The main working-class areas of early 20th century Santiago's periphery were: San Pablo, Estación Central, Ultra Mapocho, Matadero and Avenida Matta. Affluent Santiaguinos lived at the center of the city, near the downtown core or just west of downtown in the Third Precinct. In his work, DeShazo pulls together data from the Policía de Santiago and maps out 116 upper class homes and 446 proletarian homes in Santiago and its periphery. Upper-class homes were found in the greatest concentration along the Alameda de las Delicias (today known as Avenida Libertador General Bernardo O’Higgins or La Alameda for short) and nestled in the triangle of Bandera Street-La Alameda-Mapocho River located near Cerro Santa Lucía. Upper class homes were also located in the quadrants of Latorre-La Alameda-Blanco Encalada-Santa Rosa and San Pablo-Almirante Barroso-La Alameda-Bandera.

Working-class Santiaguinos typically lived in conventillos (tenement housing). These were often single-room dwellings where a family, and even extended family members, might live. Foundations were built of brick, walls of adobe, roofs were constructed of wood, tile or flattened tin cans, and floors of mud and straw. Many conventillos were below grade. During the winter, heavy rainfall sometimes flooded these tenements with water, mud, and overflowing sewage. A public health inspection of 115 Santiago areas homes in 1900 revealed that almost half of the conventillos were below grade making them vulnerable to flooding.

Since the late 19th century, there had been an increasingly urgent need to deal with the urban housing problem in Santiago and Valparaíso. In 1868, a municipal ordinance in Santiago

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109 Ibid.

110 Policía de Santiago, Guía de informaciones policiales (Santiago: n.p., 1910) in DeShazo, Urban Workers, 57-58.

prohibited the construction of *ranchos* within city limits. In 1874, another ordinance was passed concerning the maximum height of buildings and, in 1883, a regulation was adopted that provided incentives to build homes for working-class people. Politicians of all persuasions and from all political parties made affordable housing part of their platforms. They saw it as a moral mission, but also as a practical solution to a real problem. The tide of working-class Chileans moving into the city could not be stopped and with such a move came the risk of bigger and deadlier epidemics. Cholera, smallpox, and tuberculosis outbreaks in Santiago illustrated the need to better manage urban development.

One of the most traumatic infectious disease events in Chile’s republican-era history (aside from Spanish influenza) was the cholera epidemic of 1886. The epidemic originated in India and encircled the world, entering Chile, along the Argentine border, with initial cases occurring on November 25, 1886; no official acknowledgment of such cases occurred until December 25, 1886. At that point the disease was spreading quickly and appeared in the valley of Aconcagua and Valparaíso in early January and in Santiago on January 15, 1887. By the end of January 1887, it was in Buin and by mid-February in Panguilemo. During the month of February, the illness tracked south-east along the waters of the Mapocho and Maipo rivers to Talagante and Melipilla. By the end of February, the illness had reach Talca and then, in early March, descended upon Chillan and Concepción. By the end of March, it was rampant in Tomé, Talcahuano, Lota, and Coronel. There was a lull in the spread of disease in Santiago in April, but it continued its march in southern parts of the country. In the springtime (southern hemisphere) the disease started to pick up again with a small but steady number of cases again appearing in Santiago and Valparaíso. By November 1887, the epidemic hit with such virulence and severity that it was completely out of control in Santiago and Valparaíso. The central government
responded by commandeering medical professionals and resources and deploying these to
affected areas as well as creating a commission to investigate what had happened.\footnote{Memoria de la Comisión Directiva del Servicio Sanitario del Cólera presented to the Minister of Interior by Dr. Wenceslao Díaz, President of the Commission (Santiago: Imprenta Nacional, 1888).} This epidemic was an extraordinarily traumatic event in Chile's history that would shape public health responses to, and assumptions about, future epidemics including the Spanish influenza pandemic.

In her research on smallpox epidemics in Chile and the controversial obligatory vaccination program, María Josefina Cabrera cites Dr. Ricardo Dávila Boza who referred to smallpox as “our national plague, our disease…”\footnote{Ricardo Dávila Boza, “La Viruela,” RMCh 21, no. 3 (1893): 82 cited in Cabrera, “¿Obligar a vivir o resignarse a morir?” 41.} Cabrera explains that cholera and bubonic plague were exotic diseases in Chile with cyclical local outbreaks, but smallpox was virtually endemic in Chile. Either most Chileans had been affected by smallpox or knew someone who had been affected. Cases were reported each year with such a degree of predictability that Dr. Dávila acknowledged that the country's doctors had begun to accept the illness with a certain degree of indifference.\footnote{Boza, “La Viruela,” 86 cited in Ibid.}

3.2. Housing

These disease epidemics brought awareness to the problem of housing. In the case of cholera, the government commission dedicated a chapter in its report to housing and how deficiencies in popular housing contributed to the disease’s spread:

The Cholera Epidemic illustrated in such an obvious way how poor living conditions contribute to the spread of disease. Neighborhoods with poor housing, especially conventillos and ranchos, were ones that most propagated the epidemic.
In summary the *conventillos* and rooming houses are subject to a law that among other things concerns: that the maximum number of occupants be registered with the police determined by the dimensions of the rooms and that they be subject to periodic inspection, humidity of ground, ventilation of rooms, location of dwellings, cleaning of patios and common areas, potable water service, endemic and epidemic diseases, etc.. The *ranchos* are the worst form of dwelling found in the countryside and in the cities.

*Ranchos* in the cities have the worst possible sanitary conditions and it is incomprehensible how city councilors have not tried harder to ban them in accordance with established ordinances. In Santiago, the *ranchos* belong, in general, to usufruct lease holders, not underlying owners, in which case neither are obligated under the law or by municipal regulation to replace materials, the construction or location of ranchos to put them in compliance with construction standards of the city, and erase the barbarous image portrayed by their irregularity, crowding, filth and misery, and above all to provide affordable and healthy living conditions for workers with due regard for their humanity; such humanity that promotes improvement and progress, that which the rancho undermines with disease, high mortality of children, and the corruption that comes from the overcrowding of the sexes, but overall by the wretchedness that permeates the spirit and character of the people who live in these conditions.\(^{115}\)

In its 1895 platform, the Conservative Party called for the “protection of the organization of societies determined to build working-class neighborhoods.”\(^{116}\) The Democratic-Liberal Party campaigned on the promise of construction of working-class neighborhoods that would promote morality and contribute to the economy.\(^{117}\) Working-class housing of the time was, generally, of shoddy construction with poor lighting and ventilation. In its 1888 political platform, the Radical Party argued that safe and clean affordable housing for working-class Chileans was a democratic

\(^{115}\) “Memoria de la Comisión Directiva del Servicio Sanitario del Cólera,” President of the Sanitary Service Directorate for Cholera to the Minister of Interior (Santiago: Imprenta Nacional, 1888), 97.

\(^{116}\) Conservative Party, 1895 Convention, 49 cited in Fernando Ortiz Letelier, *El movimiento obrero en Chile (1891-1919)* (Santiago: LOM, 2005), 199, n. 211.

imperative without which the State would spend more money on hospitals and prisons. In 1892, the House of Representatives passed a law aimed at promoting the construction of safe and clean affordable housing for working-class Chileans:

The truly extraordinary mortality that occurs in the Department of Santiago is owed to, among other things, proletarian housing where hygiene is completely lacking, something that should concern legislators. In the past few years the smallest epidemics have victimized millions and even though private initiatives have tried to prevent these misfortunes, we believe that we are obliged to assist in these ventures. For these reasons we submit for debate the following proposed law:

Article 1: The President of the Republic is authorized to invest up to 500,000 pesos to build working-class neighborhoods in Santiago.

Article 2: It is decided that the works, their administration and management will be the responsibility of the Junta of Beneficence of which it should invest in the rents from the new housing into the same project…

The idea that the very existence of the nation depended on the resolution of the housing problem was a predominant theme in Alessandri’s law school thesis:

There man learns respect, the principle of subordination, reciprocal love, self-denial, indispensable qualities that form the citizen and the man….To be a good citizen, to meet fairly the duties imposed by humanity, the home is of evident necessity, where the affection of a spouse, or mother or of a sister, put forth a man on the path to good and to work as ultimate objectives…

In 1905, the Consejo de Habitaciones Populares was created to inspect Santiago homes with the objective of fixing or condemning insalubrious homes. Similar initiatives were taking place in Valparaíso where rapid urbanization and poor housing was an even bigger problem than in Santiago. In 1904, the Municipality of Valparaíso discussed the problem in its Annual Report:

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120 Arturo Alessandri, “Habitaciones para los obreros,” 5,6.
A study has been commissioned into the living condition of conventillos with a view to proposing more rigorous and complete regulations than those outlined in current ordinances...even though there may be resistance from landlords...\(^{121}\)

As in Santiago, rapid urbanization in Valparaíso led to more severe epidemics. Between 1896 and 1901, the Municipality of Valparaíso experienced numerous smallpox outbreaks which were always containable. In 1904, however, the city was gripped by a major epidemic that spread out of control. City officials blamed the situation on inadequate resources and insufficient funding for *Lazaretos* (quarantine stations).\(^{122}\)

The vast majority of urban workers in Santiago and the periphery could not afford to buy a house. In 1919, the *Caja de Ahorros* sold homes at a cost of 14,000 to 32,000 pesos.\(^{123}\) In 1920, houses in the “Población San Eugenio” and “Población Huemul” housing projects—inaugurated in 1911 by President Ramón Barros Luco—sold for 7,000 pesos, with a down payment of 700 pesos and monthly payments of 42 pesos per month. In 1921, a landless agricultural worker made on average 2.73 pesos per day and between 2.15 and 3.18 pesos per day in the winter months.\(^{124}\) The average miner made 8.27 pesos per day, with copper miners being the best paid.\(^{125}\) Industrial workers (gas and electricity) were paid as much as 10.95 pesos per day and textile workers only 4.63 pesos per day.\(^{126}\) Workers earned between 671 and 4,074

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\(^{121}\) *Memoria administrativa del territorio municipal de Valparaíso, 1904* (1905), 39.

\(^{122}\) Ibid.

\(^{123}\) *ELMS* (October 4, 1919), 15 cited in DeShazo, 64.

\(^{124}\) *BOT* no. 24 (1926), annex 88; *BOT* no. 21 (1923) annex 13, 123 cited in Mamalakis, 65.

\(^{125}\) Ibid.

\(^{126}\) Ibid.
pesos per year (or between 56 and 340 pesos per month), not enough to purchase a house. Working-class Santiaguinos spent 12.5% of their family income on rent and 64.3% on food, 11% on clothing and 10 on fuel.

Inflation was a major problem in the early part of the 20th century, particularly around the 1920s, and contributed to often violent labor unrest. The cost of basic staple foods rose dramatically between 1902 and 1925. For example, 100 kg of beans rose from 9.25 pesos to 70 pesos, low quality cuts of beef rose from 0.34 pesos per kg to 1.80 pesos per kg, and low quality flour rose from 5.30 pesos to 33 pesos per kg. Chilean workers paid a lot for their food and, as DeShazo notes, food was adulterated or rotten, exposing workers and their families to serious public health dangers. Milk and wine were watered down, pork sausages were horse meat and sawdust was added to coffee. Rotten or tubercular diseased meat was sold to workers at a discount. Inflation was exacerbated by the orero-papelero dispute.

3.3. Living Conditions of Infants and Children

It has often been alleged that, at the turn of the 20th century, infant mortality in Chile was the highest in the world notwithstanding that Chile had one of the highest birth rates in the world. Working-class children were the most vulnerable group in early 20th century Santiago. Statistics show that the highest mortality rate amongst all Chileans was for children under one

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127 Assumptions: lowest 2.15 pesos per day, highest 10.95 pesos per day; multiplied by 6 days per week multiplied by 52 weeks.

128 BOT 2 (1911), 21; BOT 18 (1922), 90-91; BOT 24 (1926) annex 50. ADGT, Formularios de monografias (1912) cited in DeShazo, 62.

129 Mario Garcés Durán, Crisis social y motines populares en el 1900 (Santiago: Ediciones Documentas, 1991), 80-84; Ricardo Dávila, “Mortalidad de los niños en Santiago,” RChH no. 5 (1899); “Crónica científica,” in El Porvenir, 1 December 1898 cited in Simón Castillo Fernández, “El barrio Mapocho y el parque Forestal: espacio público y representaciones de ciudad en Santiago de Chile (1885-1900)” (master’s thesis (History), University of Chile, 2008), 97, fn. 180.
year of age. The statistics paint a horrific picture. A frequent cause of death for these children was starvation or malnutrition. Contaminated or adulterated food was also a major cause of death despite inspection by government laboratories.\textsuperscript{130} Without vaccinations or appropriate pediatric care, the only lifeline that newborns had was their mother’s milk and even that was often compromised. A study of 1,064 working-class children in Santiago, in 1922, declared, “Almost all of the infant population of proletarian Santiago is sick.”\textsuperscript{131} Sater observed that in Chile there was a disease for every season.\textsuperscript{132} Bravo observed:

Very often we find children of two, three or four months of age, fed by their mother in perfect health; rarely have we found children of six months of age in equal conditions and only by exception did we find a one year old in perfect health.

Children less than six months of age brought to the clinic for routine treatment, upon close examination were discovered to have had chronic conditions such as rickets, congenital syphilis, tuberculosis, etc.\textsuperscript{133}

Rickets was a particularly tragic illness because it was emblematic of a childhood lost. Often children became sick with rickets because of prolonged sunlight deficiency owing to long work days that kept them indoors and in perpetual night. These children did not know the simple pleasures of playing under the warmth of the sun. Photographs of the era often show poor and working-class children without shoes. Many of these children worked 8 to 10 hours in oppressive conditions where they were exposed to disease, abuse and workplace hazards. They might earn one peso per day working in garment factories, manufacturing plants and foundries. While some

\textsuperscript{130} Memoria administrativa del territorio municipal de Valparaiso, 1904 (1905), 41.

\textsuperscript{131} Raquel Bravo G, “Ensayo sobre el indice de morbilidad en Santiago de Chile” (medical thesis, University of Chile, 1922), 12.

\textsuperscript{132} Sater, “Smallpox in Chile,” 516.

\textsuperscript{133} Bravo, “Ensayo sobre el indice de morbilidad en Santiago de Chile,” 11.
children entered the workforce to help their families survive, others may have been runaways who had to work for their own survival:

> It is indisputable that many of these [child laborers], are underage runaways that have offered themselves up to manufacturing plants and garment factories for no other reason than to gain a living, and invariably their health suffers irreparable damage. Their development has been stunted by the physical labor that is inappropriate for their age, making them susceptible to illnesses…

With bleak prospects for survival, some children turned to crime. *Sucesos* documented one case of a five year old child who had been arrested more times than his age.

Pediatric health was not just viewed as a moral and compassionate imperative, but also a national concern. Unhealthy children, it was reasoned, could “never come to be physically and morally healthy citizens that the country needed to develop economically and to defend itself should our liberties as a free and sovereign nation be threatened.”

Raquel Bravo, a medical student at the time of the pandemic rhetorically asks if Chile’s unhealthy children will be the nation’s “men of tomorrow, those that will defend the Fatherland?” The criticism was all too often focused on the poor and the working-class and not on government policies or the ruling class. In particular, mothers were sometimes blamed for their children’s misfortunes: “the influence and the ignorance of mothers, who it would seem have even lost their maternal instinct that all other animal species posses to raise healthy offspring.”

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137 Ibid., 18.

138 Ibid., 13.
fault, explains the study’s author. Mothers often had to abandon their children so that they could
go to work because their husbands were unemployed alcoholics. “Very rarely” Bravo wrote, “did
we find families that did not have a head of household who was a drinker.”

In 1917, there were limited resources and legislation dedicated to helping working families with infants and children. A 1917 law, implemented in 1922, permitted nurseries in certain workplaces. Also in 1917, a decree was passed to accommodate female rail workers and their children.

By the start of the 20th century, state sponsored education was embraced as a necessary and effective solution to combat child poverty. Education was understood to be an instrument of moral hygiene used to shape future generations into responsible citizens.

3.4. Prisons

During the last half of the 19th century and the first half of the 20th century, the prison population in Chile was generally stable at around 10,000 inmates but sometimes fluctuated to as a high 30,000 inmates. Prison life in late 19th and early 20th century Chile was a death sentence. A corrections publication of the early 20th century noted:

The insalubrious condition of prisons and the cruel treatment that is put in practice, diminish the health of the inmates if they are condemned for a long sentence or they die in custody, or acquire a serious illness, such as tuberculosis…

139 Ibid.
140 Letelier, El movimiento obrero en Chile, 197.
Prisoners were housed in overcrowded and deplorable conditions with little concern for their well being. From a public health perspective, prisons were focal points for the spread of infectious diseases. Contrary to popular views, many infectious diseases did not originate in prisons but, once they made their way into those environments they were uncontrollable. This was certainly the experience during the Spanish influenza pandemic (see Chapter 7). It should be said, however, that the high risk factor of prisons during infectious disease epidemics was not unique to Chile. It was a reality shared by prisons around the world and is, to this day, an area of special concern for public health officials.
Chapter 4: The Pandemic at Chile’s Doorstep. Spanish Influenza Unfolds around the World

4.1. Overview

Spanish influenza is a name that elicits fear and wonder. It defies reason that millions of people, many young and healthy, died of the flu between 1918 and 1921. The flu seems like such an innocuous and routine illness. Caitriona Foley described the paradox as a “troubling incongruity between expectation and reality. Influenza was usually seen as a ‘homey, familiar kind of illness’,,”\(^\text{143}\) typically threatening the young, the old, pregnant women, and persons with compromised immune systems. For this reason, the 1918 Spanish influenza pandemic was a radical departure from humanity’s experience with influenza. In Alfred Crosby’s words, “Nothing else—no infection, no war, no famine—has ever killed so many in as short a period.”\(^\text{144}\) John McNeill and William McNeill aptly described Spanish influenza as the "first truly global pandemic in history."\(^\text{145}\) Physicians, politicians, and ordinary people did not know what to make of the outbreak. It was unlike anything they had ever experienced.


4.2. Influenza Virus

Scientific research suggests that viruses have an ancient origin.\textsuperscript{146} The use of the word \textit{virus} in the context of physical health, however, dates back to the 15\textsuperscript{th} century.\textsuperscript{147} The term was originally used to describe discharge, pus, and general disease. In the early 20\textsuperscript{th} century the term took on a more focused meaning and was used to describe pathogenic agents that were smaller than bacteria and could not be seen, therefore, under an optical microscope.\textsuperscript{148} At this time viruses were often described as “filterable” and “ultramicroscopic”\textsuperscript{149} where "ultramicroscopic" referred to the size of the virus while "filterable" described its ability to travel through filters that normally contained bacteria. In the early 20\textsuperscript{th} century, bacteriologists suspected that something smaller than bacteria existed; however, viruses could not be seen until 1931.

Unlike bacteria or fungi, viruses are generally considered non-living; they are acellular and do not reproduce through cell division. A virus' survival and replication is dependent on the availability of a host cell and surrounding cells. Viruses are much smaller than bacteria. Where bacteria are between 0.5 and 5 micrometers (10\textsuperscript{-6} meters) and can be seen under an optical microscope, viruses are between 80 and 120 nanometers (10\textsuperscript{-9} meters) in diameter and cannot be observed without the use of an electron microscope.\textsuperscript{150}

The influenza virus circulates within swine, equine, avian, and human populations. Unlike other viral infections, such as mumps or chicken pox, people cannot become immune to


\textsuperscript{148} Ibid.

\textsuperscript{149} Ibid.

influenza. This is because the influenza virus is constantly mutating through processes known as antigenic shifts and antigenic drifts. "Antigenic shift" refers to minor changes in the antigenic surface of the virus while "antigenic drift" refers to major changes to the antigenic surface of the virus. Pandemics, such as the one in 1918, result from antigenic shifts.

The influenza viruses come from the *Orthomyxoviridae* family of viruses and exist in three types—A, B and C. Influenza A and B cause seasonal influenza, but only Influenza A is associated with pandemics. Influenza C viruses generally cause mild respiratory tract infections in children. Influenza A viruses are sub-typed according to 2 proteins on the surface of the virus: hemagglutinin (HA) and neuraminidase (NA). There are 16 HA sub-types and 9 different NA sub-types, although the three main strains of influenza virus affecting humans are H1N1, H2N2 and H3N2.¹⁵¹

### 4.2.1. Transmission

Influenza A viruses can survive on hard, non-porous surfaces (e.g. stainless steel and plastic) for 24 to 48 hours.¹⁵² The virus can survive at a detectable level on highly porous surfaces such as handkerchiefs, tissues, pajamas and magazines for up to 8 to 12 hours.¹⁵³ Once contaminated, the virus may be passed from these contaminated surface areas to hands. Viable viruses that can be transferred from tissues to hands are barely detectable on the hands after 15

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¹⁵³ Ibid.
Viable viruses that can be transferred from stainless steel to hands remain at detectable levels for up to 24 hours. Contaminated hands can transmit viable viruses onto stainless steel surfaces leaving the stainless steel surface contaminated for 2 to 8 hours and just a few minutes for tissues. Influenza virus A is affected by temperature and humidity. The virus becomes inactive with higher relative humidity. The rate of inactivation for aerosolized viruses and viruses placed on surfaces spikes at 50% relative humidity, while it tends to survive for longer in low relative humidity environments of 30%. Airborne transmission of influenza can occur through two vectors: droplets or droplet nuclei. Infected saliva or mucous droplets are between 5 and 100 micrometers in size. They can be projected at a distance of 1 meter (3 feet) from an infected person by coughing, laughing, speaking or sneezing. The droplets do not stay suspended in air, but instead fall to the ground. Droplets smaller than 5 microns are referred to as droplet nuclei. They are generally between 1 to 5 microns. At this size, droplet nuclei can remain suspended in the air and travel with air currents while keeping viral particles active for up to twenty four hours, depending on environmental conditions. Talking for five minutes or coughing can generate up to 3000 droplet nuclei and sneezing can generate 40,000 droplet nuclei. Outdoors, the risk of infection is minimized by dilution and dispersion of droplet nuclei as well as their destruction by the sun's ultraviolet rays.

154 Ibid.
155 Ibid.
156 Ibid.
157 Ibid., 50.
159 Ibid., 460
4.2.2. Symptoms

Generally, the period of influenza communicability ranges from 24 hours before and up to 3 to 5 days after symptoms develop. The incubation period is 1 to 3 days. Symptoms can include sudden onset of fever, headache, chills, muscle aches, lethargy, physical exhaustion, and a dry cough. Other symptoms include sore throat, stuffy or runny nose, and worsening cough. Children may feel sick to their stomach, vomit, or have diarrhea. Elderly people and people with compromised immune systems may not develop a fever.

Most people recover from the flu within 7 to 10 days. During the spring 1918 wave, the Spanish flu was referred to as the “three day fever” in some countries because the majority of people infected recovered after only three days of illness.\(^\text{160}\) The British Ministry of Health, which produced one of the most comprehensive contemporaneous chronicles of the Spanish influenza pandemic, confirmed this while still expressing alarm for the very sick:

There were far more cases of ordinary straight-forward benign influenza than there were of “influenza pneumonia”; but these benign cases were overshadowed by the grave ones; and there is a little danger, if one does not emphasize the fact, that future generations might gain the impression that the whole of the 1918-19 epidemic was of “pneumonic” and grave character.\(^\text{161}\)

The Ministry went on to explain that for every 1000 people attacked by the disease, 800 had benign “three day fever” influenza symptoms. The remaining 200 had complications and, of those, 80 died. Those that had “heliotrope cyanosis” were 95% likely to die.\(^\text{162}\) During the pandemic, physicians used the term “heliotrope cyanosis” to describe the cyanosis they observed in some patients. Cyanosis is a condition in which blood oxygen becomes scarce and gets


\(^{161}\) Ibid.

\(^{162}\) Ibid., 73-75.
diverted from blood vessels in the skin to critical organs resulting in a bluish-black discoloration of the lips, ears and skin. During the pandemic, this occurred as a result of advanced pneumonia (often bacterial), an infection secondary to influenza. As penicillin had not yet been invented, most people in this advanced state of infection died.

The more severe symptoms of Spanish influenza documented in the literature include cyanosis, high fever 40.5°C (105°F), petechiae, internal hemorrhaging, conjunctivitis, delirium, nausea, vomiting, extreme weakness, occasional paralysis, coughing sputum and blood, elevated respiration and labored breathing. In some cases, people bled from the nose, ears or rectum. Spanish influenza was distinctive in that, globally, a statistically high number of young, healthy, adult males (20-40 years old) became severely ill or died from the disease.163 As shall be seen in Chapter 5, the same pattern was observed in Chile.

Some Spanish influenza victims suffered what is known as a “cytokine storm”. Cytokines are protein molecules that activate cells in the immune system when infection is detected. Sometimes illness can cause an overproduction of cytokines which can overwhelm organs and lead to death.164 During the Spanish influenza pandemic, cytokine storms were responsible for influenza related deaths in many young people.165

People who were severely affected by the flu tended to die quickly, within one to two days. Generally, less than a quarter of those infected developed secondary infections such as

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pneumonia which, in the pre-antibiotic era, could easily prove fatal. Pneumonic infections tended to be severe, with patients coughing up blood and suffering heliotrope cyanosis. As the Ministry explained, heliotrope cyanosis was an almost certain sign of imminent death:

It was not the temperature chart nor by the physical signs in the chest, nor by feeling the pulse that one could tell the serious cases so well as one could by their colour; the cyanotic tinge might be definite in a patient who was complaining little, who was taking his liquid nourishment well, was taking an intelligent interest in his surroundings, answering questions promptly and clearly, and in no way—except by his colour—indicating that by the next or the day after he would almost certainly be dead.  

As people with severe cases of influenza approached death, they tended to turn a blackish-lilac color and emit a foul, musty smell. In *Pale Horse, Pale Rider*, a reporter, whose fiancé succumbed to the virus while caring for her, became ill and had such a poor prognosis that her obituary was written as she lay dying; but, she lived to describe her near-death experience with the virus:

Pain returned, a terrible compelling pain running through her veins like heavy fire, the stench of corruption filled her nostrils, the sweetish sickening smell of rotting flesh and pus; she opened her eyes and saw pale light through a course white cloth over her face, knew that the smell of death was in her own body, and struggled to lift her hand.  

While *Pale Horse, Pale Rider* is a fictional novel, the author, Katherine Anne Porter had firsthand experience with Spanish influenza having nearly died of the disease in 1918. A young lieutenant, with whom she was in love, died of the disease while she struggled to survive. Alfred Crosby's seminal work on Spanish influenza was heavily influenced by Porter's novel, which he


regarded as an accurate account of life during the pandemic and, more generally, of American society in 1918. In *America's Forgotten Pandemic*, Crosby writes:

The two greatest exceptions to the rule that Spanish influenza left no lasting mark on American literature or its practitioners are Thomas Wolfe and Katherine Anne Porter. They had no choice but to grant the pandemic due recognition because it struck too close to their hearts ever to be forgotten...The story [Pale Horse, Pale Rider] is one of the twentieth century's masterpieces of short fiction, but it is something in addition to that for the historian. It is the most accurate depiction of American society in the fall of 1918 in literature. It synthesizes what is otherwise only obtainable by reading hundreds of pages of newspapers...“169

Some of these symptoms were horrific, but these cases should be put into perspective. Over 98% of people infected with Spanish influenza worldwide had benign symptoms and recovered within days. Of the 2% that died, not all died in the horrific manner sensationalized in some accounts; however, because of the large number of people infected worldwide, the small percentage of people who died such painful deaths translated into millions, which is what made Spanish influenza so distinctive. In his 1922 report to the Ministry of Health (United Kingdom) on the 1918 pandemic, the Minister wrote:

Contrasted with the extensive and acute but non-fatal outbreak of June 1918, the world-wide “plague” of influenza of the following autumn and winter [northern hemisphere], with its millions of deaths, presented very different clinical characters … Nevertheless, it is important to emphasize the fact that although it was the “pneumonic” type of case that attracted much attention, creating such consternation owing to its mortality, and thereby colouring the picture of the epidemic as a whole, these fatal “pneumonic” cases constituted but a minority of the whole. There were far more ordinary straight-forward benign influenza than there were of “influenza-pneumonia.”170 [emphasis added]

Other communicable diseases may have had higher mortality rates than Spanish influenza, but their limited diffusion meant a lower number of deaths. The other alarming reality of the disease

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was that it quickly struck down people who were young and healthy. The unfamiliarity and the unpredictability of such a disease caused panic, which was sensationalized in the media.\textsuperscript{171} While the pandemic was serious and required extraordinary measures, perspective is required—daily life went on.

4.2.3. Prevention and Treatment

Nowadays influenza prevention techniques include social distancing, hand washing, cleaning of frequently touched surfaces, coughing into one’s sleeve, among others. Interestingly, the advice in 1918 was much the same as it is today. In different parts of the world, accounts relating to prevention are consistent, although in some countries excess street cleaning and other general sanitation measures were emphasized. Such measures probably did not do much to prevent the spread of Spanish influenza but, from a general public health perspective, the effort was certainly beneficial. The literature also reveals debates over the efficacy of school closures and masks. These remain unresolved debates to this day. With respect to treatment, nowadays various expensive antiviral medications exist to treat severe flu symptoms and antibiotics are available to treat common secondary infections such as bacterial pneumonia. At the time of the 1918 pandemic, however, neither antiviral nor antibiotic medication had been invented. People had to ride out the disease and rely entirely on the fortitude of their own immune systems. Those who did not die of the influenza virus might have died from pneumonia.

\textsuperscript{171} Debra E. Blakely, \textit{Mass mediated disease: a case study analysis of three flu pandemics and public health policy} (Lanham: Lexington Books, 2006).
4.3. History of Influenza Pandemics

While viruses are as old as humankind, suspected influenza pandemics may have been described by Hippocrates as far back as 412 B.C.\textsuperscript{172} The first probable recorded outbreak of influenza was believed to have occurred in 1173 in England and was described as “sweating fever”\textsuperscript{173} The first accurate description of influenza was in 1679\textsuperscript{174} In the last 400 years there have been at least 31 influenza pandemics occurring at 10 to 50 year intervals\textsuperscript{175} Recognized epidemics occurred as early as 1510 in Europe. Other epidemics occurred in 1557 and 1580 in Europe. The latter eventually spread to Asia and Africa. Throughout the 17th and 18th centuries localized influenza outbreaks occurred. In the 18th century three global pandemics occurred between 1729-30, 1732-33 and 1781-82. In the case of the latter, the virus spread to North America, South America and most of Europe\textsuperscript{176}

In the 19th century three major global influenza pandemics occurred between 1830-31, 1833-34, and 1889-90. The most deadly of these was the Russian flu in 1889. Originating in Russia (hence its name), the virus quickly spread to Europe and North America by Christmas 1889 and later spread to Latin America and Asia. The mortality rate was relatively low (1\%), but because so many people were infected across the world even 1\% translated into a high number of


\textsuperscript{176} Cunha, “Historical Aspects of Epidemics and Pandemics,” 148.
deaths, approximately one million. The majority of people who died were children and the elderly.

Between 1889 and 1890 many countries endured the Russian flu. Until the Spanish influenza pandemic, the Russian flu had been the worst case scenario. As a result, when Spanish influenza arrived, with its extreme symptoms, high mortality rate, and proclivity to attack young healthy adults, no one knew what to make of the illness. Not only were the clinical symptoms of Spanish influenza baffling but so too were the results of laboratory tests. Standard laboratory tests of the era, based on bacteriological assumptions, could not explain what the illness was because it was not bacterial in nature. Thus, the disease was beyond medical comprehension. As Eugenia Tognotti discusses in her work on Spanish influenza in Italy, the disease exposed the limitations of bacteriology ending its “triumphalism.” Until 1918, many physicians believed that all infectious diseases could be explained as bacterial phenomena. They also believed that influenza was caused by the Pfeiffer bacillus so named for Richard Pfeiffer, the German bacteriologist who, in 1892, claimed to have discovered the influenza pathogen. It is not surprising that physicians the world over mistook the disease in 1918 for dengue fever, yellow fever, typhoid fever, plague, meningitis, staphylococcus, streptococcus, and even typhus.177 John Barry writes,

In Paris, while some physicians also diagnosed cholera or dysentery, others interpreted the intensity and location of headache pain as typhoid. Deep into the epidemic Parisian physicians still remained reluctant to diagnose influenza. In Spain public health officials also declared that the complications were due to “typhoid,” which was “general throughout Spain.”

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177 Crosby, America’s Forgotten Pandemic, 264-94;
But neither typhoid nor cholera, neither dengue nor yellow fever, neither plague nor tuberculosis, neither diphtheria nor dysentery, could account for other symptoms. No known disease could.\textsuperscript{178}

There have been three influenza pandemics in the 20\textsuperscript{th} century. Between 1918 and 1921, the Spanish flu (H1N1) ravaged the world, infecting one third of the global population and killing 20 to 100 million people representing a mortality rate of approximately 2.5\% to 5\%.\textsuperscript{179}

The next two pandemics were much milder. In 1957, Asian flu (H2N2) circled the earth killing one million people. Just as many died in 1968 when the Hong Kong flu (H3N2) struck.

The Spanish influenza pandemic was distinctive in that it touched virtually every corner of the world and caused about one third of the global population to fall sick, of which approximately 2\% died. In some places, such as Chile, the mortality was higher. The speed, cruelty and mortality of Spanish flu was unlike anything that had ever been seen before, which, as discussed above, caused many doctors to doubt if the disease was influenza at all. At the time Russian flu was the baseline case for how bad an influenza pandemic could be. However, the symptoms of Spanish influenza and those groups of people affected by it differed so greatly from the Russian flu experience that the two pandemics were incomparable.


4.4. Mortality and Morbidity of Spanish Influenza

Spanish influenza stands as the deadliest epidemic in world history. The precise number of people that died of Spanish influenza is unknown; estimates vary between 20 million and 100 million people worldwide.180 The first major study on Spanish flu mortality, done in the late 1920s, pegged the number of fatalities at 21.9 million.181 This number was widely accepted until the early 1990s when Patterson and Pyle estimated fatalities to be between 24.7 and 39.3 million.182 In their 2002 research, Johnson and Mueller, revise this figure to at least 50 million and perhaps as high as 100 million.183

The disease unfolded globally, with varying levels of intensity in different parts of the world at staggered time periods between February 1918 and June 1920. In some places, the illness had a high morbidity rate but a low mortality rate while in other places the opposite was experienced. Morbidity is the measure of illness in a given population while mortality refers to the percentage of ill people who die from the disease. Both measures employ various statistical techniques. The overall mortality rate for Spanish influenza was higher than seasonal influenza, but certainly nothing alarming except that the illness spread to over one third of the global population. From this perspective, even a small mortality rate would result in millions dead.184

The mortality rates for Spanish influenza ranged from 2% to 10% around the world, including in Chile.\textsuperscript{185} Mortality and morbidity rates differed from country to country and according to waves. They also differed from city-to-city within a given country. In the United States, different patterns of pathogenesis and virulence were observed in different cities and even within different boroughs of those cities.\textsuperscript{186}

Accurate morbidity rates and breakdowns are difficult to come by, even in countries where influenza was a reportable illness and deaths were recorded meticulously.

4.5. Etiology and Epidemiology of Spanish Influenza

The precise origin of the Spanish influenza virus is unknown and subject to debate. Some research suggests that the virus may have originated in China, in 1915, and that it may have begun to make the rounds between 1915-1917 as there were sporadic spikes in influenza activity during this time in the United States and in Europe.\textsuperscript{187} Others theorize that the virus originated in France in 1916.\textsuperscript{188} Still others argue that the virus originated in the United States


and that it spread into Europe with the American troop movement during World War One.\(^{189}\) It is certain, however, that, despite its name, Spanish influenza did not originate in Spain.

The literature generally describes Spanish influenza as having made its impact in three waves. The first wave occurred in different parts of the world and with varying degrees of intensity between February and July 1918. The first wave produced high morbidity and low mortality.\(^{190}\) The second wave took place between end of August 1918 and January 1919 with different geographical regions peaking at different times; however, in most parts of the world October and November 1918 were the most intense months and were characterized by relatively higher levels of mortality. In some places the mortality rate was not unusually high. But, given the widespread nature of infection, even a low mortality rate produced a staggering number of dead, particularly since the deaths occurred so rapidly. The third wave generally occurred between February 1919 and April 1919. Some sources describe a fourth wave occurring in 1920, mainly in Latin America, Scandinavia, and parts of the UK, Canada, and the southern United States.\(^{191}\)

How was it that the second wave of Spanish influenza could impact the entire world at the roughly same time, and with the same ferocity, in an era when mass air travel did not yet exist? As the virus spread, public health officials pondered the same question:

The occurrence of these waves in practically all parts of the world where the pandemic prevailed is most puzzling. It is difficult to conceive of any external, i.e. environmental, influence acting so uniformly throughout the world, and that the virus should

\(^{189}\) Cunha, “Influenza: historical aspects of epidemics and pandemics,” 149.


everywhere show these peculiar variations in infectivity and virulence is certainly most remarkable. 192

Infectious disease experts hypothesize that the illness was spread and seeded around the world before the late-1918 outbreak. 193 They examined “explosive outbreaks” of respiratory disease affecting young people in the winter months between 1916 and 1918. Outbreaks were identified in two British Army camps as early as the winter of 1916. 194

4.6. Diffusion

4.6.1. Spread of Spanish Influenza around the World

Spanish influenza spread across the world with remarkable speed, causing illness, death, and social disruption. The first wave began in Europe between February and April 1918 and quickly progressed to North Africa, Asia and Australia by July of the same year. As the mortality rate was low, the outbreak did not attract much concern. From the end of August 1918 to January 1919 a second wave struck with unprecedented lethality. In many parts of the world, a third wave extended the second wave from February to April 1919. In some parts of the world there was even a fourth wave.

The long held tradition in Spanish influenza historiography to frame the disease in these tightly compartmentalized wave categories is perhaps an obstacle to our better understanding of the disease. The wave patterns oversimplify what happened. In reality the

193 Oxford, “The so-called Great Spanish influenza Pandemic of 1918 may have originated in France in 1916,” 1857.
pandemic unfolded with different peaks and valleys of varying intensity not only in different parts of the world, but within different countries and even within different cities. In the United States, some cities were inexplicably less affected than others. In many parts of the world cities at one end of a country had begun their peak as other cities were falling quiet. The traditional wave narrative also makes influenza seem as if it simply stopped in 1920. It did not. In many parts of the world, including Chile, as we shall see in Chapter 6, the disease did not stop but slowly faded away. While not on the scale as outbreaks in 1918 and 1919, localized influenza outbreaks—whether of the Spanish influenza strain or a variant—continued to cause localized instances of high mortality for years to come. This was not unique to Chile. Following the 1918 pandemic, in Canada, for example, there were documented cases of related influenza outbreaks until at least 1928.\textsuperscript{195}

Epidemic influenza had been present in the United States since 1915. In the last half of 1915, epidemic influenza simultaneously attacked several major US cities causing social and economic disruption. Some believe that Spanish influenza originated in the United States and point to an outbreak in March 1918 at Camp Funston as its beginning. Between April and May 1918 there was a detectable increase in the number of mild, fever-related illness of an undetermined nature in several states including Virginia and Louisiana. Between September 1918 and June 1919 it is estimated that approximately 675,000 people died in the United States, most during the deadly second wave between October and December 1918.196

In Canada, the disease spread quickly during the October-December 1918 wave. In November, the Canadian Medical Association reported the sudden appearance of the illness in

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that country noting that its severe form affects with “predilection young, strong and plethoric individuals, especially men.”\(^{197}\) In Ontario, the Provincial Board of Health distributed a fact-sheet circular on influenza to every physician in the province.\(^{198}\) The efficacy of controlling influenza through school closures was questioned by Dr. John W.S. McCullough, Chief Officer of the Ontario Provincial Board of Health who observed that, “children would be better at school than running the streets and spending their time (as they have in large numbers been doing in Toronto) in the shops where the warmth and attractions are better than many of them have at home.”\(^{199}\)

The second wave of Spanish influenza was felt throughout Latin America in roughly the same time period October 1918 to January 1919. Mexico was the hardest hit by the disease, second only to Brazil. In Mexico, the virus first made its appearance in February 1918 following the arrival of a ship, in Veracruz, that was carrying a number of passengers sick with influenza. The disease quickly spread across the north leaving the cities of Torreón, Gómez Palacios and San Pedro de las Colonias with 300 dead per day. In Mexico City the Hospital General attended to 800 sick people per day.\(^{200}\) The hardest hit region was the State of Michoacán where, out of a population of 991,000 people, approximately 48,000 people died.\(^{201}\) A visitor to Mexico City observed:

No doubt the Mexicans are exceptionally easy victims on account of the conditions brought about by the revolution. There are, moreover, no proper


\(^{199}\) Ibid.

\(^{200}\) Borrás, “Alguna enfermedades y epidemias en torno a la Revolución Mexicana,” 165.

organized medical arrangements and no funds available to meet the emergency. It is reported that in some of the towns in Mexico there is at present no means for burying the dead. In Mexico City the death rate—believed to be the highest in any town of the world—is thought to have doubled the last two or three weeks. Many members of Congress have already died.\textsuperscript{202}

\textbf{Figure 9:} Americas by Country - Number of Spanish Influenza Deaths.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{america_by_country.png}
\caption{Americas by Country - Number of Spanish Influenza Deaths.}
\end{figure}


In Brazil, the second wave of influenza also began in early October with initial cases being reported in Rio de Janeiro. The focal point was the SS Demerara, a British ship that had arrived in Rio Janeiro, from Dakar, on September 16, 1918 carrying two hundred cases of flu. Twenty members of the crew of an American war ship in harbor died. As would be the case in Chile, when the epidemic started it was initially reported that the outbreak was mild. As the virus quickly spread panic ensued:

The sanitary administration broke down, business was at a standstill, the food supplies ran short, and what articles were available were sold at such exorbitant prices as to place them beyond the reach of the poorer classes. Many shops were closed and the streets were almost deserted. Restaurants and places of amusement also closed their doors. Owing to the amount of illness among the men, the railway services were greatly reduced, and communications by telegraph or

\footnote{\textsuperscript{202} Ibid., 330.}
Frank McCann, in his monograph on the history of the Brazilian army, summarized the Spanish flu experience in Brazil:

> From its docking on September 16 [the SS Demerara] until an upper-lass dance at the Club dos Diários October 12, it spread slowly through the lower classes, but after many of the guests took ill that night, a great leveling epidemic swept through rich and poor households. Two weeks later an estimated five hundred thousand people—half of Rio’s population—were down sick, and a thousand bodies lay unburied in the Cjú cemetery. There were not enough hearses to carry the bodies or enough grave diggers to bury them. Everything was paralyzed—transport, schools, stores—as whole families were struck down. Food supplies, especially milk and eggs, disappeared, causing some of the sick to die of starvation. The stench of death that had so marked Europe in the previous four years spread through this tropical paradise with terrifying speed.\(^{204}\)

Brazilian President-elect Francisco de Paula Rodrigues Alves caught the disease in November 1918 thereby preventing him from taking office and forcing his Vice President, Delfim Moreira da Costa Ribeira, to take office. Rodrigues Alves never recover; he died on January 16, 1919.\(^{205}\) McCann writes that the official death toll was 16,997 but that other estimates were as high as 28,000.

As would be the case in Chile, newspapers bitterly attacked the government for failing to provide an adequate health response and drugstores and druggists for peddling bogus products and price gauging.\(^{206}\) As in Chile, during and after the epidemic, an intense debate ensued within

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203 Ibid, 339.


205 Ibid.

the medical community about the causes and treatment of the disease.\textsuperscript{207} The experience overturned some long held attitudes about public health. For example, in the only historical monograph dedicated to the 1918 pandemic in Brazil, Bertucci reflects on a “180 degree” moment in which “sanatoriums [nosocômias], for centuries repudiated by the population as a place of death and treatment for the wretched, transformed themselves at the end of October [1918] into the ‘great solution’ to the epidemic disasters.”\textsuperscript{208}

In Peru, the epidemic first appeared in Lima and stretched out across the country. By October 25, 1918, thousands of cases were reported in Arequipa.\textsuperscript{209}

In May and June 1918, the Argentinean press began to report the appearance of a strange illness in Spain.\textsuperscript{210} Despite the press coverage, Argentineans expressed little concern about the disease’s potential arrival. Tuberculosis, syphilis, bubonic plague, and smallpox were of more immediate concern. The October-December 1918 wave, which was devastating in Europe and North America, was also felt in Argentina but it was not that country's most devastating wave (nor was it Chile's). This again calls into question the traditional Spanish influenza historical narrative that neatly compartmentalizes the three waves of the pandemic.

The pandemic’s fury was felt throughout Argentina (especially in the central and littoral parts of country) during the winter months (southern hemisphere) from June to September 1919

\textsuperscript{207} Ibid.


(mirroring the Chilean experience). It peaked and troughed across the country at different times throughout this period.
5.1. Influenza in Chile’s History

When Chilean physicians debated the nature of the mysterious illness that had arrived in Santiago in October 1918, their respective positions were informed by what they knew about influenza’s history in Chile. The side that supported the view that the epidemic was typhus argued that the constellation of symptoms observed in 1918, and going forward, did not resemble past experiences with influenza. They pointed, in particular, to Chile’s experience with the Russian flu pandemic of 1890 which, until Spanish influenza, had been the most devastating influenza pandemic in Chile.

Dr. Lautaro Ferrer was a key proponent for the side that argued that the outbreak in October was Spanish influenza and not epidemic typhus. He was also an authority on the history of influenza in Chile. In making the case that the October 1918 outbreak was influenza, he outlined Chile’s experience with the illness.

5.1.1. Colonial Period

Chile’s recorded experience with influenza stretches back to early colonial times. According to distinguished influenza researchers J.K. Taubenberger and D.M. Morens, an influenza-like epidemic broke out in Chile in 1617 at a time when there was no influenza activity anywhere in the world.211 It is believed that the epidemic was imported from Spain. After ravaging Chile, it quickly moved through the Americas initiating a period of “semi-autonomous

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American influenza activity”. Dr. Ferrer refers to influenza by many different names in his memoirs, including la bola de fuego (“the ball of fire”). According to Ferrer, Chile’s first recorded influenza epidemic was in 1737 and made thousands sick. This epidemic was part of a global pandemic that ran from 1729 to 1747. In 1753, an influenza outbreak in Europe reached the Americas. The illness, referred to as quebrantahuesos in Chile, peaked in 1758 after years of recrudescence. From October 1779 to January 1780 an outbreak of influenza, referred to as el Malsito, wreaked havoc on Santiago and Concepción. Records show that at least 3,978 women were treated in a local orphanage house in Santiago.

5.1.2. Republican Period

5.1.2.1. 19th Century

Throughout the 19th century Chileans dealt with routine bouts of seasonal and pandemic influenza including the pandemics of 1830-31, 1833 1836-37, 1847, 1852, 1868-69, 1880 and 1889-90 (Russian flu).

The Russian flu pandemic hit Chile with particular lethality during the months of February and March 1890 and led to negative national population growth. The Russian flu was brought to Chile, in January 1890, by passengers arriving to the port of Iquique on a ship

213 Pedro Lautaro Ferrer R., Historia general de la medicina en Chile (Talca: Imprenta Talca de J. Martin Garrido C, 1904), 259.
215 “Influenza – Ciertas reflexiones propósito de las publicaciones sobre esta enfermedad,” El Ferrocarril, 27 February 1890, 3.
from Panama,\textsuperscript{217} making 150,000 ill and killing 700 in Santiago or 2.8 per 1,000. The mortality rate (deaths as a percentage of sick) for the Russian flu was 2.5\%.\textsuperscript{218}

### 5.1.2.2. 20th Century

Chile experienced the three pandemics of the 20th century—Spanish flu (1918-20), Asian flu (1957-58) and Hong Kong flu (1968-69)—with much of the same intensity as the rest of world with some notable exceptions. The wave patterns for the 1918 Spanish flu were different in Chile than in the Northern hemisphere and many parts of the Southern hemisphere. Chile’s most severe wave of disease was not in October-December 1918 (what is conventionally known as the second wave); rather, the severest wave occurred between August-September 1919 (what is conventionally known as the tail end of the third wave). Also, the illness seemed to linger in Chile longer than in most other countries. Influenza illness and deaths were reported with fading recurrence until 1921, a year longer than in most other parts of the world.

Following the Spanish influenza pandemic, Chile experienced four severe influenza epidemics—1923, 1929, 1930 and 1933—that appear to have been domestic or regional epidemics. The 1933 epidemic was noted for its effect on young people aged 15 to 45 and for causing cases of severe pulmonary distress.\textsuperscript{219}

In July 1957, confirmed cases of Asian flu appeared simultaneously in the northern desert provinces of Tarapacá and Antofagasta and the central region cities of Santiago and Valparaiso. By September it had reached Magallanes, the southernmost tip of Chile. In this short span of


\textsuperscript{218} Arturo Mardones, “Consideraciones sobre la influenza o grippe por el Dr. Arturo Mardones A.” \textit{RMCh} 46, no. 9 (September 1918): 230.

\textsuperscript{219} María Carvajal Carvajal, “La epidemia de grippe del año 1933 y sus complicaciones bronco-pulmonares” (medical thesis, University of Chile, 1934), 5.
time, 1.4 million cases of Asian flu were reported, of which 800,000 were from Santiago. Approximately 80% of all cases involved school-aged children.\textsuperscript{220} Mortality rates for the Asian flu were low.\textsuperscript{221}

There is not much information on the Hong Kong pandemic of 1968-69, probably because it did not impact Chile in a significant way. The illness probably progressed in Chile along the same pattern as the rest of South America peaking in mid-1969.\textsuperscript{222} Mortality rates for the Hong Kong flu were also low.\textsuperscript{223}

In 2009, Chile was moderately affected by the so-called “Swine flu” pandemic that had spread from Mexico in June 2009. In Chile, a country of 16.6 million people (2009), 12,302 cases of "Swine flu" were reported of which 155 were fatal, representing morbidity and mortality rates 0.074\% of 1.26\%, respectively.\textsuperscript{224} To put this into perspective, the global mortality rate of Spanish influenza is estimated to have been >2.5\%.\textsuperscript{225} The “Swine flu” pandemic caused alarm in Chile, but the morbidity and mortality rates put the illness well below normal seasonal rates. An alarming difference with the “Swine flu” and seasonal influenza, however, was the difference in age groups affected. Seasonal flu, as illustrated in Figure 10 below, mainly threatens seniors


\textsuperscript{223}Ministry of Health, Chile, “Pandemia de Influenza”


over 60 years of age and, to lesser degree, infants under one. In contrast, “Swine flu” tended to affect adult men under age 50, although many had underlying conditions. This difference in affected age groups is one of the key differences between pandemic and seasonal influenza and was certainly a feature of the Spanish influenza pandemic, as will be seen in subsequent chapters.

**Figure 10:** Chile - Influenza and Pneumonia Deaths by Age Group, 2003-2007.

**Figure 11:** By Country - Influenza and Pneumonia Deaths, 2003-2007.

5.2. Spanish Influenza (1918-1920)

5.2.1. Demographics

5.2.1.1. Population

At the start of the pandemic, in 1918, Chile’s population stood at 3,637,369 people.\textsuperscript{226} At the time Chile had 24 provinces: 5 with populations under 100,000 people; 15 with populations between 100,000 and 200,000 people; and four with populations over 200,000 people. The four provinces with populations in excess of 200,000 people were: Santiago with 627,491 inhabitants; Valparaíso with 347,757 inhabitants; Concepción with 271,497 inhabitants; and Antofagasta with 220,049 inhabitants.\textsuperscript{227} By the end of the pandemic, in 1921, the Chilean national population had fallen by about 160,234 from its 1918 figure.\textsuperscript{228} Many provinces including Valparaíso, Concepción and Antofagasta experienced population declines. Santiago stood out as an exception with a population increase of 70,751 inhabitants.\textsuperscript{229}

5.2.1.2. Population Density

During the pandemic, the city of Santiago was commonly depicted as the center of unhealthy living—overcrowded and dirty—for Chilean workers and the poor. This was not unique to Chile. Throughout the western world, urban life for the working class was wretched and nasty. In reality, Santiago may not have been as bad as other places in Chile or internationally. At the start of the pandemic in 1918, Santiago’s population density was a tame

\textsuperscript{226} OCE, \textit{Anuario Estadístico de la República de Chile}, vol. I (1921) (Santiago: Soc. Imp. Lit. Universo, 1922), 80.

\textsuperscript{227} Ibid., 10-11.

\textsuperscript{228} National population: 3,952,475 (1 January 1918), Ibid.,10; National population: 3,792,241 (1 January 1921); OCE, \textit{Anuario Estadístico de la República de Chile}, vol. I (1921) (Santiago: Soc. Imp. Lit. Universo, 1922), 11.

\textsuperscript{229} Ibid.
129/km² (330.34/mi²) compared to Valparaíso’s 519.6/km² (1,330.18/mi²). Antofagasta and Concepción had population densities of 1.6/km² (4.10/mi²) and 105.1/km² (269.06/mi²), respectively. Many other cities had population densities of less than 50/km² (128/mi²). Population density was a factor in the spread of influenza in Chile; cities with higher population densities, such as Valparaíso, saw the disease spread faster and more severely than in cites with lower density numbers.

In Valparaíso, in 1911, there were 259 conventillos (rooming houses) comprising 5,111 residences and 15,178 people. This translates into 58 residents per conventillo or 2.96 residents per room. In 1916, there were 2,347 conventillos with 24,587 rooms and 60,318 residents which translated into 2.79 residents per room. By way of comparison, during the pandemic, in England and Wales, a density of 1.97 residents per rooming house room was recorded.

A main argument of those Chilean physicians who regarded the 1918 outbreak as typhus was that living conditions in the cities were overcrowded and unclean. In many places there was limited running water and inadequate drainage systems. Oppressive rent forced people to crowd into small living spaces. These living conditions, while bad, were not materially worse than in other Latin American or European countries that did not experience typhus epidemics.

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230 OCE, Anuario Estadístico de la República de Chile (1918), 9. All distances described heretofore are in relation to Santiago.

231 Ibid.

232 Ibid., 9-10.


234 BOT, 9, no. 12, (1919) cited in Urbina Carrasco, Los Conventillos, 121.

5.2.1.3. Births, Deaths, and Excess

Birth and death rates in Chile followed a fairly consistent pattern between 1850 and 1921, with births generally outpacing deaths. However, the number of deaths exceeded the number of births, and signaled a natural population decline, on four occasions: 1885, 1887, 1888, and 1891. In those years, there were more recorded deaths than births with the result that the excess over birth was -4,853 in 1885, -5,615 in 1887, -72 in 1888, and -10,187 in 1891. These four population shocks were all due to disease outbreaks. The largest shock, in 1890, was due to the Russian flu pandemic that struck Chile in July of said year. The shocks in 1885, 1887, and 1888 were due to the fifth global cholera pandemic (1881-1896) (see Figures 12 and 13 below).

Figure 12: Chile - Annual Births, Deaths, and Excess (Aggregate), 1850-1925.

5.2.1.4. Infant Mortality

Infant mortality in Chile was appallingly high in the years leading up to the Spanish influenza outbreak and only worsened during the pandemic. Santiago had the unenviable world record for the highest number of infant deaths in 1900, an astonishing 502 deaths per 1000 births. This meant that 50.2% of children born in Santiago, in 1900, died before the age of one.\textsuperscript{236}

Nationally, between 1914 and 1917, the average number of births was 141,625 and the average number of deaths of children under the age of one was 36,123. During the pandemic years, the average number of births was 146,343 and the average number of infant deaths was 40,345, with the highest number of deaths (44,424) occurring in 1919 at the height of the outbreak in Chile. A

\textsuperscript{236} Commentz, "Estadísticas de mortalidad," cited in María Angélica Illanes, Cuerpo y sangre de la política, 41, n. 35.
quarter of the children under the age of one typically died of “congenital deformity, jaundice and escleroma”. Another 12% died of “other afflictions unique to children under one” of which starvation, from failure to latch or inadequate maternal milk supply, was a leading cause.

Another 12% died of “other causes” that is, infant deaths that had no medical explanation (i.e.: what is known today as “Sudden Infant Death Syndrome”). The remaining 51% of infant deaths were attributed to: pneumonia, influenza, diarrhea, measles, meningitis, “convulsions in children,” and whooping cough.237

**Figure 14**: Chile - Number of Births and Infant Deaths (under the Age of One), 1914-1921.

**Figure 15**: Chile - Number of Infant Deaths (under the Age of One) Relative to Number of Births (per 1,000), 1914-1921.


During the Spanish influenza pandemic (1918-1921), the infant mortality rate in Chile jumped particularly in 1919 when the number of deaths for children under the age of one increased from, a pre-pandemic, 254.7 per 1,000 to 306.4 per 1,000. In 1920 and 1921, the number of infant deaths dropped from its 1919 high but remained elevated relative to pre-

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237 OCE, *Anuario Estadístico de la República de Chile*, vol. I (1918), (1919), (1920), and (1921), Table XI “Causes of death and age of the deceased in the Republic”.
pandemic years. The spike in deaths in 1919 was attributable to a 300% increase in influenza deaths, a 100% increase in pneumonia deaths, and a 150% increase in diarrhea related deaths relative to 1918 figures.\textsuperscript{238} Pneumonia and diarrhea would have been common symptoms of secondary infection to influenza.

5.3. Mortality and Morbidity during the Spanish Influenza Pandemic

5.3.1. Morbidity

There are no accurate morbidity statistics for Spanish influenza in Chile, but that is not unique to Chile. Even in the United States, where meticulous records were kept during the pandemic, there are no accurate morbidity records. Morbidity is the measure of illness in a given population. Morbidity is often deduced from other existing statistics and statistical modeling of smaller documented populations such as jails or hospitals.\textsuperscript{239} In this sense, Chile actually has some advantage over other countries because the Oficina Central de Estadística (“OCE”), the government’s census bureau, tracked the number of patients admitted to Chilean hospitals, nationwide. It also tracked how many patients were released and how many patients died in hospital, by disease. One problem with the Chilean figures, however, is that, for each year of the pandemic, there were a number of cases of illness attributed to typhus when they were, in all likelihood, influenza.

\textsuperscript{238} OCE, \textit{Anuario Estadístico de la República de Chile Estadístico}, vol. 1 (1918), 44; (1919), 44.

5.3.2. Mortality

Between 1918 and 1921, the total number of influenza-related deaths in Chile was between 43,989 and 56,233. I arrive at this figure by considering two scenarios. The scenarios are rough estimates based on reasonable assumptions that serve the illustrative purpose of this dissertation.

The first scenario assumes all deaths directly attributed to influenza by the OCE, between 1918 and 1921, as Spanish influenza deaths. Under this scenario, the total number of Spanish influenza deaths is 43,989. The scenario is plausible. During an inter-pandemic period, any number of influenza virus strains can be in circulation; however, during a pandemic the pandemic influenza virus strain tends be the prevailing strain in circulation. I take the assumption that the pandemic influenza strain was the prevalent strain for all four years (i.e. 1918-1921).

Under the second scenario, I calculate the average number of deaths directly attributed to “influenza” by the OCE for the 15 year period preceding the pandemic (1903-1917). The average number of deaths was 2,890, with minimal year-to-year volatility. Next, I deducted the excess amount from each of the total number of deaths directly attributable to influenza for each of the four years (1918-1921). In this scenario, I also factor in excess-over-average deaths using the same methodology for pneumonia and attributed the excess amount to Spanish influenza. This is a reasonable approach since many people died of secondary bacterial infection (bacterial pneumonia) rather than influenza itself.

Between 1918 and 1921, illnesses associated, or easily confused, with Spanish influenza also rose sharply. It is common in the Spanish influenza statistics of other countries to include excess death rates for incidences of pneumonia during this period on the assumption that excess rates could be reasonably attributed to the pandemic. Pneumonia was a common complication of
influenza. In fact, globally many people died from this secondary infection rather than the influenza virus. Nowadays pneumonia can be treated rather successfully using antibiotics; however, during the Spanish influenza pandemic penicillin had not yet been discovered. In Chile, between 1903 and 1917, the number of pneumonia deaths ranged from 8,756 (1911) to 15,707 (1913) with an annual average of 13,049 deaths and a standard deviation of 2,614. In 1918, the number of pneumonia deaths rose to 16,944 from 15,425 in 1917. In 1919, the number of pneumonia deaths rose to 19,007, in 1920 it rose to 18,500, and in 1921 it rose to 21,549.

In the 15 year period preceding the Spanish influenza pandemic (1903-1917 inclusive), the number of influenza deaths ranged from 1,471 in 1905 to 4,440 in 1908 with a sum of 43,353 deaths, an annual average of 2,890 deaths, and a standard deviation of 755. During this period, the number of influenza deaths year-to-year was stable with little volatility (see Table 2 below).

In the four year pandemic period (1918-1921), the number of influenza deaths ranged from a low of 6,026 in 1918 to a high of 23,789 in 1919 with a sum of 43,431 deaths, a yearly average of 10,835 deaths, and a standard deviation of 8,651. As many people died of influenza during this four year period as they did in the preceding 15 years. The number of deaths year-to-year was highly volatile with a major peak in 1919. In 1918, the number of influenza deaths rose abruptly to 6,026 from 2,798 recorded in 1917. In 1919, a deadly wave of disease hit Chile resulting in 23,789 influenza deaths. In 1920, the number of influenza deaths dropped to 6,928, and in 1921 the number of deaths rose again, slightly, to 7,246 (see Table 2 below).

In the 15 year period following the Spanish influenza pandemic (1922-1936), the number of influenza deaths ranged from a low of 4,746 in 1922 to a high of 17,278 in 1923, with a sum of 119,495 deaths, an annual average of 7,966 deaths, and a standard deviation of 3,320. During
In this period, the number of influenza deaths, year-to-year, was highly volatile (see Table 2 below).

In the 15 year period following the Spanish influenza pandemic (1922-1936) there were three major outbreaks following the August-September 1919 influenza wave: in 1923 there were 17,278 influenza deaths; in 1929 there were 11,216 influenza deaths; and in 1933 there were 11,087 influenza deaths (see Figure 16 below). Chile's influenza outbreaks between 1923-1933 are not conventionally considered to be part of the Spanish influenza pandemic; however, the number of recorded influenza deaths, in these years, illustrates that in Chile's post-pandemic years, influenza mortality did not return, immediately, to pre-pandemic levels but, rather, remained unstable.

The severity of the illness and its recrudescence may have been linked to the steady but high number of cases of tuberculosis in Chile (see Figure 16 below). At least one contemporary study, by Noymer and Garenne, suggests a link between Spanish influenza and tuberculosis:

> Tuberculosis and influenza very likely interacted in 1918. Vital statistics cannot address this question well, because even if contributory causes are listed on the death certificate, a unique cause of death is recorded, a general problem that hinders cause-specific studies of death.  

Noymer and Garenne note that Raymond Pearl, a leading early 20th century American biologist, published a study in 1919 that examined the relationship between influenza and tuberculosis co-infection in 1918. When Noymer and Garenne reanalyzed Pearl's data, using modern statistical techniques, they found that:

> TB infection was a significant risk factor for contracting influenza … The influenza-tuberculosis interaction need not be a molecular phenomenon (i.e. involving some direct interaction between the TB bacillus and the influenza virus). The secondary pneumonia that occurs as a complication of influenza

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infection could be exacerbated by active tuberculosis or by tubercular lesions in the case of latency.241

Table 1: Chile - Influenza and Pneumonia Deaths during the Pre-Pandemic (1903-1917), Pandemic (1918-1921) and Post-Pandemic (1922-1936) Periods.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Pandemic (1903-1917)</th>
<th>Pandemic (1918-1921)</th>
<th>Post Pandemic (1922-1936)</th>
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</thead>
<tbody>
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<td>15</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>High</td>
<td>4,440</td>
<td>23,789</td>
<td>17,278</td>
</tr>
<tr>
<td>Low</td>
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</tr>
<tr>
<td>Sum</td>
<td>43,353</td>
<td>43,431</td>
<td>119,495</td>
</tr>
<tr>
<td>Arithmetic Mean</td>
<td>2,890</td>
<td>10,835</td>
<td>7,966</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>755</td>
<td>8,651</td>
<td>3,320</td>
</tr>
</tbody>
</table>


Figure 16: Chile - Influenza and Tuberculosis Deaths 1903-1936.


241 Ibid.
5.4. Geographic Differences

Table 3, below, shows that the incidence of influenza-related deaths was markedly higher in the provinces of southern Chile than in the country's northern provinces and its capital. It also shows that the incidence of influenza-related deaths, on a per capita basis, was actually lower in the provinces of Santiago and Valparaíso than in most other places in Chile (north and south) and lower than the national average. Further investigation would be necessary to clearly understand the reasons for this pattern but at least one hypothesis can be drawn from the data: Chile's southern provinces were predominantly populated by aboriginal people and during the Spanish influenza pandemic aboriginal peoples, globally, were more severely affected by the disease than non-aboriginal peoples.

In Norway, the mortality and morbidity rates of the Sami were particularly high.242 In Australia and South Africa, aboriginal groups also suffered greatly. The film Last Days of Okak explores how the arrival of Moravian missionaries to Okak and Inuit settlements in Northern Labrador, in 1919, led to the decimation of the settlement owing to Spanish influenza.243 In Saskatchewan, Canada, over 5,000 people died of Spanish influenza, with native peoples suffering a death rate of 33.7 per thousand as compared with a death rate of 6.5 per thousand for non-native peoples.244 Other aboriginal groups in other parts of Canada also recorded high incidences of influenza sickness and death.

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243 The Last Days of Okak directed by Anne Budgell (Ottawa: National Film Board of Canada, 1985).

Table 2: Chile - Influenza Deaths (per 1,000) in the Provinces and Capital.

<table>
<thead>
<tr>
<th>Province</th>
<th>1918</th>
<th>1919</th>
<th>1920</th>
<th>1921</th>
<th>4-yr Avg. 1918-21</th>
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<tbody>
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<td>Bío Bío</td>
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<td>19.46</td>
<td>6.77</td>
<td>4.50</td>
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<td>Arauco</td>
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<td>10.69</td>
<td>7.72</td>
<td>6.22</td>
<td>6.86</td>
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<td>Chiloé</td>
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<td>11.86</td>
<td>3.54</td>
<td>4.04</td>
<td>5.52</td>
</tr>
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<td>Maule</td>
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<td>10.04</td>
<td>4.09</td>
<td>3.07</td>
<td>4.97</td>
</tr>
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<td>Nuble</td>
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<td>9.57</td>
<td>3.14</td>
<td>2.98</td>
<td>4.56</td>
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<td>9.50</td>
<td>3.51</td>
<td>3.21</td>
<td>4.58</td>
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<td>11.22</td>
<td>2.36</td>
<td>3.39</td>
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<td>3.54</td>
<td>4.16</td>
</tr>
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<td>2.82</td>
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<td>3.33</td>
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<td>1.91</td>
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<td>6.72</td>
<td>0.84</td>
<td>1.08</td>
<td>2.32</td>
</tr>
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<td>Talca</td>
<td>1.30</td>
<td>5.83</td>
<td>1.03</td>
<td>1.34</td>
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</tr>
<tr>
<td>Tacna</td>
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<td>6.99</td>
<td>0.51</td>
<td>0.71</td>
<td>2.26</td>
</tr>
<tr>
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<td>6.32</td>
<td>0.48</td>
<td>1.07</td>
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</tr>
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<td>1.12</td>
<td>5.13</td>
<td>0.39</td>
<td>1.04</td>
<td>1.92</td>
</tr>
<tr>
<td>O'Higgins</td>
<td>0.90</td>
<td>3.81</td>
<td>0.28</td>
<td>1.23</td>
<td>1.56</td>
</tr>
<tr>
<td>Santiago</td>
<td>1.60</td>
<td>1.66</td>
<td>0.13</td>
<td>0.55</td>
<td>0.99</td>
</tr>
<tr>
<td>Valparaíso</td>
<td>1.04</td>
<td>1.94</td>
<td>0.13</td>
<td>0.79</td>
<td>0.98</td>
</tr>
<tr>
<td>Magallanes</td>
<td>0.31</td>
<td>2.36</td>
<td>0.07</td>
<td>0.54</td>
<td>0.82</td>
</tr>
<tr>
<td>Atacama</td>
<td>0.28</td>
<td>2.12</td>
<td>0.29</td>
<td>0.25</td>
<td>0.74</td>
</tr>
<tr>
<td>Tarapacá</td>
<td>0.74</td>
<td>0.74</td>
<td>0.56</td>
<td>0.49</td>
<td>0.63</td>
</tr>
<tr>
<td>Antofagasta</td>
<td>0.27</td>
<td>0.59</td>
<td>0.26</td>
<td>0.56</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Source: *Anuario Estadístico de la República de Chile Año 1920*, vol. 2 Beneficencia, Medicina e Higiene (Santiago: Soc. Imp. y Lit. Universo, 1921).
5.5. Pandemic Waves

As was explored in the previous chapter, the conventional Spanish influenza historical narrative describes the pandemic as having unfolded in three distinctive waves, occurring in different parts of the world at roughly the same time. The first wave occurred between February-July 1918 and was highly virulent but mildly pathogenic, resulting in high morbidity and low mortality rates. The second wave ran from late August 1918 to January 1919 and was highly pathogenic, resulting in high mortality. In most parts of the northern hemisphere, the third wave generally ran from February to April 1919 and is typically described, in the literature, as a milder

Figure 17: Chile - Influenza Deaths, 1903-21.

continuation of the second wave. Chile, along with parts of Latin America, Scandinavia, the UK and a number of southern US cities, are said to have endured a fourth wave, in 1920, that some scientists believe may have been a different strain of the virus.\textsuperscript{245} The literature tends to generalize this experience, suggesting that the three waves occurred globally at the same time and with the same relative severity.\textsuperscript{246}

The Spanish influenza pandemic unfolded in Chile between late September 1918 to August 1921 with discernible peaks in October-December 1918 and August-September 1919. However, as in other parts of the world, the occurrence of Spanish influenza in Chile did not abruptly cease in the post-pandemic period. Rather it faded, with fewer and fewer cases of influenza disease reported relative to the number of cases reported in 1919 (see Figure 17 above), a fact recognized by Chilean doctors:

Influenza is never totally extinguished and in subsequent years one notes spikes and local recrudescences that sometime take on serious characteristics.

This recrudescence will, in all likelihood, continue into the next winter and during that time it will be predispose the develop of pulmonary complications, the havoc of the illness will be alarming and grave, the overcrowding of dwellers will facilitate the growth of the epidemic such that exaggerated, sensationalist, reporting from the newspapers will not be necessary.\textsuperscript{247}

Month-to-month birth, death, and excess mortality rates from national census data for the period 1917 to 1921 reveal a wave pattern in Chile that challenges the conventional narrative of the Spanish influenza pandemic waves (see Figure 18 below).

\textsuperscript{245} Johnson and Mueller, “Updating the Accounts,”, 107; Ministry of Health, Report on the pandemic influenza, ix.

\textsuperscript{246} Esylit W. Jones. Influenza 1918: Disease, Death, and Struggle in Winnipeg (Toronto: University of Toronto, 2007), 14.

\textsuperscript{247} Dr. Arturo Atria, Head, Bacteriology to Dr. Ramón Corbalán, Director, Dirección General de Sanidad, Santiago, 20 September 1919 in Boletín de Higiene y Demografía 15, no. 9. (September 1919): 436.
According to the Ministry of Health, Chile experienced a first wave of Spanish influenza in April and May 1918; however, this claim is not supported by the historical record. Government archival records, academic theses/articles, and press reports indicate that few, if any, cases of Spanish influenza appeared in Chile in early 1918. It has been noted, by one mid-20th century influenza researcher, that the early 1918 wave virtually missed South America all together. It is worth noting, however, that Chile experienced an unexpected and unexplained

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spike in typhoid fever cases in February 1918 which quickly subsided in March 1918.\textsuperscript{250}

Globally during the 1918 pandemic, Spanish influenza was commonly mistaken for typhoid fever. The historical record suggests that Chile’s first wave of pandemic influenza actually began in late September 1918 during what is commonly regarded, in the northern hemisphere, as the second wave.

From late September 1918 to January 1919, Chile experienced an alarming rise in the number of influenza-related illnesses and deaths across the country, but the pandemic’s severity had not reached its zenith as it had in Canada, America and western European countries ("CAWE"). In the case of Chile, the pandemic peaked in August and September 1919. The October 1918 wave, as experienced in Chile, was, therefore, a comparatively mild run-up to the cataclysmic August-September 1919 wave. Mortality and excess statistics for these time periods show just how dramatic the August-September 1919 wave was as compared to the September-December wave (see Figures 19 to 24 below).

\textsuperscript{250} Dr. Dávila Boza to President of Consejo Superior de Higiene, Santiago, 2 April 1918 in \textit{RChH} 25 (1919): 55-56.
Births

Deaths

Excess

Figure 19: Province of Santiago - Births, Deaths, and Excess, 1914-1921.

Figure 20: Province of Valparaíso - Births, Deaths and Excess, 1914-1921.

Figure 21: Province of Concepción - Births, Deaths, and Excess, 1914-1921.

Figure 22: Province of Coquimbo - Births, Deaths, and Excess, 1914-1921.

Figure 23: Province of Bio Bio - Births, Deaths, and Excess, 1914-1921.

Figure 24: Province of Ñuble - Births, Deaths, and Excess, 1914-1921.

During the August-September 1919 wave, deaths outnumbered births in some provinces, creating a negative excess total (e.g. Santiago, Concepción, Bío Bío and Ñuble) (see Figures 19, 21, 23, 24 above), while in other provinces, the birth and death totals were nearly the same (e.g. Valparaiso and Coquimbo) (see Figures 20 and 22 above). All provinces experienced a dramatic spike in deaths in 1919. Between August and September 1919, the total national excess was -5,552 (see Figure 18 above) although the overall excess total for the year was positive.

The sheer devastation that the August-September 1919 wave brought to Chile was remarkable not because of the number of deaths—in the early 20th century other illnesses, such as tuberculosis and smallpox, claimed just as many if not more lives—but because of the concentration of deaths in such short period of time. The first 20 days of August 1919 left 1,454 people dead in Santiago alone. In Santiago, 2,190 people died in the month of August, up over 100% from the same time the year before.251 El Mercurio described the desperation of the situation: “There are practically no jails, police stations, army barracks, schools or places that do not harbor an rising number of sick people.”252

The Chilean experience raises questions about how Spanish influenza unfolded in the southern hemisphere and broader questions about assumptions in the general historiography of the disease’s global diffusion. That historiography tends to reflect the CAWE experience casting generalizations on the rest of the world. There are many excellent studies on the impact of Spanish influenza on other countries and regions; however, the historiography is less researched

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251 “Mortalidad en la capital,” MERC, 1 September 1919, 17.

252 “La Grippe,” MERC, 17 August 1919, 23.
and sometimes uncritically accepts assumptions from northern hemisphere narratives as universal fact.  

Some non-CAWE research validates the Chilean pattern of pandemic waves. For example, in New South Wales, Australia—where more than half of the nation’s influenza related deaths occurred—the first wave of Spanish influenza did not occur in October 1918, but rather between mid-March and late-May 1919. The second wave occurred in June and July 1919 and was more severe than the first wave (see Figure 25 below). That wave pattern in New South Wales closely resembles the Chilean wave pattern. Despite the similarities, one would not be able to make generalizations about southern hemispheric wave patterns of Spanish influenza based solely on the New South Wales and Chilean experiences with the disease. There are examples of countries in the southern hemisphere that followed the generally accepted northern hemispheric wave pattern.

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For example, South Africa experienced roughly the same three wave patterns as were experienced in CAWE countries with cases actually peaking in September rather than October 1918. Even more perplexing is the case of New Zealand, where the October-November 1918 wave was ferocious even as neighboring Australia experienced relative calm. Some claim that the Australian experience was due to the effectiveness of its quarantine efforts early in the pandemic. \(^{255}\)

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pandemic; however, this view was challenged by medical experts shortly after the pandemic who said that this was improbable given the gaps in Australia’s quarantine measures.\textsuperscript{256}

In Chile, all age groups were affected by the 1919 wave of Spanish influenza: the country's high infant mortality rate soared and, consistent with mortality patterns in other countries, the number of deaths among the 20 to 49 year old age group jumped by nearly 30% at the peak of the pandemic.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure26.png}
\caption{Chile - Mortality by Age during the Spanish Influenza Pandemic, 1918-1921.}
\end{figure}

Source: OCE, \textit{Anuario Estadístico de la República de Chile}, vol. 1 (1918) (Santiago: Soc. Imp. Lit. Universo, 1919); (1920); (1921).

Figure 27: Chile - Mortality by Gender and Age during the Spanish Influenza Pandemic, 1918-1921.

Source: OCE, *Anuario Estadístico de la República de Chile*, vol. 1 (1918) (Santiago: Soc. Imp. Lit. Universo, 1919); (1920); (1921).
Chapter 6: The Great Chilean Typhus-Influenza Debate

6.1. The Debate

6.1.1. “La Gripe de los pobres”

With public anxiety over the recent H1N1 influenza pandemic at its height, the on-line edition of La Tercera in Chile published an article entitled “The ‘flu of the poor’ that alarmed all of Chile.” The article refers to the 1918-21 Spanish influenza pandemic that, by varying accounts, infected 600 million people and killed at least 20 million (possibly as many as 100 million) people worldwide. According to the article, the Spanish influenza outbreak “began [in Chile] with an infected loader in La Vega [farmer’s market] and ended up affecting even the summer retreats of Santiago’s most wealthy.” The article parrots the unchallenged narrative in Chilean history that claims that the country's 1918-21 outbreak was the result of two concurrent epidemics: influenza and typhus, the latter being propagated by Chile’s working-class and poor who, through their own neglect and irresponsibility, lived in perilously unsanitary conditions. The narrative focuses on the personal hygiene and living conditions of poor and working-class Chileans, blaming this segment of the population for spreading disease to the rest of the country, thereby killing thousands including the country's rich who would, otherwise, have been unaffected by the disease.

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257 “The Flu of the Poor”


260 Poblete, “La “gripe de los pobres” que alarmó a todo Chile.”
The *La Tercera* article is as confusing as the traditional concurrent epidemic historical narrative upon which it is based. As discussed in Chapter 4, influenza is a highly transmissible virus that spreads from human to human. Living conditions, sanitation and personal hygiene—important as they were in preventing other illnesses such as plague, cholera and typhoid fever—did not cause Spanish influenza. The position that the outbreak of 1918-21 stems from the unsanitary living conditions of the poor originates in the argument that the outbreak, in Chile, was not (or at least was not solely) Spanish influenza but epidemic typhus. This position gained an added dimension of complexity with some arguing that the outbreak was influenza, but not Spanish influenza, or that it was a disease with influenza characteristics, but not necessarily influenza proper. To appease those who believed that the outbreak was typhus and those who believed it was influenza, the official position was that, in Chile, both epidemics occurred simultaneously.

6.1.2. “No one is a prophet in his own land”

In a report entitled “No one is a prophet in his own land,” Dr. José Ducci, Secretary of the Faculty of Medicine at the University of Chile, announced the Faculty of Medicine’s endorsement of the twin epidemics theory.261 In an attempt to emphasize the supposed unanimity of the medical community’s diagnosis, he boasted that “ours has been the shortest discussion and the clearest conclusions of all analogous discussions that have taken place in the world.”262 He complained that despite the hard work of its own bacteriologists, the Chilean public still believed that country needed to solicit help from abroad.263 Yet it is this swift and uncritical discussion that should have been cause for concern. There was little debate or critical examination


263 Ibid.
undertaken of the concurrent epidemic theory. One can understand that during the epidemic this may not have been possible, that these leaders needed to make a decision. However, following the outbreak no retrospective study or inquiry was done. Furthermore, the idea that the medical community was united in its finding of a contemporaneous typhus epidemic is not true. Instead, what occurred was the drowning out of dissent by an assertive few who were in positions of leaderships. The real travesty is that the arguments used to justify the typhus diagnosis continued to be untested and unchallenged for decades to come.

The medical community was unable to provide a clear diagnosis of the outbreak. The symptoms experienced by the sick in 1918-21 were atypical of influenza, diverging even from those experienced during the Russian flu pandemic which, until then, had been the benchmark for severe influenza. The relative brevity of the 1918-21 outbreak made it difficult for physicians, in the post-pandemic period, to piece together what had happened until decades later. The Chilean experience, however, was not unique. Throughout the world, physicians struggled to identify, let alone treat, the disease as it developed. Howard Philips and David Killingray observe:

> The medical profession, which had made great strides in epidemiological knowledge and surgery over the previous two decades, found itself unprepared and ill-equipped to deal with the disease and had no effective way of combating or curing it.\(^{264}\)

So unprepared were they that when this mystery illness appeared it was not uncommon for physicians to misdiagnose it. John Barry writes:

> These victims came with an extraordinary array of symptoms, symptoms either previously unknown entirely in influenza or experienced with previously unknown intensity. Initially, physicians, good physicians, intelligent physicians

searching for a disease that fitted the clues before them—and influenza did not fit the clues—routinely misdiagnosed the disease.\textsuperscript{265}

In Spain, the outbreak was ultimately diagnosed, almost unanimously, as influenza, however, not without some spirited debate. Some doctors thought that the disease was dengue or Pappataci fever.\textsuperscript{266} Other doctors suggested that it might be typhus: “A ‘new mysterious disease’ had been reported from all over Spain which, it was said, could easily turn into typhus.”\textsuperscript{267} In Germany, physicians called the disease “pseudo-influenza” to describe a disease that was similar to influenza. Other German physicians branded the illness streptococci, staphylococci and pneumococci.\textsuperscript{268} In Ireland, a Ministry of Health report likened the outbreak to the “famine typhus of Ireland.”\textsuperscript{269} In Mexico, the novel strain of influenza resulted in a confusing categorization of the epidemic’s supposed varieties. Military physician J.A. Palanca classified bronco-pneumonic influenza into eight types:

\textsuperscript{265} Barry, \textit{The Great Influenza}, 234.

\textsuperscript{266} Dávila, \textit{La Gripe Española. La pandemia de 1918-1919}, 138-39.


\textsuperscript{268} Witte, 52.

\textsuperscript{269} Foley, \textit{The Last Irish Plague}, 132.
### Table 3: Eight Types of Bronco-Pneumonia, 1918.

<table>
<thead>
<tr>
<th>Type</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple bronco-pneumonic influenza</td>
<td>headache, cough, body ache, chills, chest pain, dryness of pharynx, thirst</td>
</tr>
<tr>
<td>Similar to typhoid</td>
<td>temperature up to 40 degrees, aphonia (loss of voice due to laryngitis), delirium with occasional loss of consciousness, dry lips and tongue covered with fuliginosities (stained)</td>
</tr>
<tr>
<td>Pseudo-meningitis</td>
<td>only a few cases, inflammation of the meninges</td>
</tr>
<tr>
<td>Comatose</td>
<td>rare, extreme pain, incoherent, unconscious alternating with delirium, incoherence and states of extreme agitation</td>
</tr>
<tr>
<td>Hemolytic</td>
<td>paleness, acrid urine, weak pulse, feeble voice, nasal hemorrhage followed shortly by death</td>
</tr>
<tr>
<td>Hyperpyrexia</td>
<td>temperature up to 42 degrees, septicemia, organ failure due to septicemia</td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>not well understood by doctors</td>
</tr>
<tr>
<td>Eruptive (rash)</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Marciano Netzahualcoyotzi Méndez, *La epidemia de gripe de 1918 en Tlaxcala* (Tlaxcala: Universidad Autónoma de Tlaxcala, 2003), 82.

Even when medical communities came to a consensus and confirmed that the illness was influenza, there were still detractors who argued that the symptoms did not match the diagnosis.

Writing on the scientific debate in Italy, Eugenia Tognotti explains:

> In spite of the official version, vast sectors of the medical world everywhere doubted if it really were influenza or if it were related to the spring outbreak. The specific nature of the symptoms and the variety of the clinical cases gave rise to a whole series of possible interpretations of the illness: 'trench fever' [i.e. typhus], dengue, and anthrax. Intestinal complications also led doctors to believe it might be cholera or some other exotic disease. And certain forms, such as fulminating pneumonic infection, with sub-cutaneous bleeding, even gave credence to the suspicion, found in various medical journals, that this was an outbreak of the pneumonic plague…

Uncertainty over the diagnosis of influenza was caused by repeated failures to fit the illness into the bacteriology framework which had, until then, successfully explained typhoid, rabies, etc. Physicians from all over the world, including Chile, searched for the Pfeiffer bacillus, the supposed bacterial cause of influenza.

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270 Tognotti, “Scientific Triumphantism,” 100.
Following a number of autopsies, Dr. Croizet, Professor of Pathology at the University of Chile's Faculty of Medicine, concluded that an “influenza epidemic did exist and that it was responsible for the vast majority of deaths.” As the August-September 1919 wave began to strengthen, Dr. Croizet urged his colleagues to immediately take the appropriate measures to limit the spread of the disease. He noted that it was the responsibility of the Dirección General de Sanidad ("DGS") to implement these measures and urged his colleagues, within the Faculty of Medicine, and physicians, in Santiago, to write to the DGS to accept that the devastating epidemic was influenza and to respond accordingly. Headed by Dr. Corbalán and heavily influenced by the theories of Dr. Atria, the DGS would continue to approach the crisis as a typhus epidemic.

As the debate raged, various camps, backing the different theories, were formed. They competed with one another, making consensus elusive. Critical of this lack of direction, Sucesos, a national high life magazine, published an article on October 31, 1918 titled “Influenza, typhus or what?” The author surveyed the opinions of seven prominent Chilean physicians and found that each had a different opinion.

Dr. Augusto Orrego Luco argued that the illness was Spanish influenza and that epidemic typhus was a misdiagnosis, it having been confused with Spanish influenza because the strain of influenza. He said that doctors confused the two because the symptoms were unusually vicious and inconsistent with the strains of influenza known to physicians. Perhaps moralizing, a bit, Dr. Orrego believed that alcoholism in Chile aggravated the impact of Spanish influenza. Subsequent research would validate Dr. Orrego's theory. To protect oneself from illness Dr. Orrego recommended good hygiene

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and staying well hydrated. For those already infected he recommended quinine, an analgesic.

Dr. Mauricio Brockmann, Professor of Pathology at the University of Chile's Faculty of Medicine, believed that there were two epidemics in Chile: influenza and typhus. He did not know whether the influenza epidemic was Spanish influenza or some other recrudescent form of influenza, but he believed that it was benign and caused no more than pain and discomfort to patients for which there was no specific treatment. Typhus was a more serious concern to Chileans. In fact, Dr. Brockmann claimed that the typhus epidemic in Chile was as serious as the recent typhus epidemic in Serbia. He explained that the vector of disease were lice. To protect oneself from this illness people were advised to stay away from people or places that might have the illness. Ladies of society who performed charitable works by visiting common people were particularly at risk warned Dr. Brockmann.

Dr. Francisco Land said that while there was insufficient information to conclude the cause of the epidemic, he was inclined to believe that it was Spanish influenza because of lesions found in the lungs and on the skin. He dismissed the suggestion that the outbreak was related to typhus. He recommended that mild fever should not be suppressed but instead be permitted to run its course.

Dr. Ricardo Donoso, Distinguished Professor of Clinical Medicine in the Faculty of Medicine, University of Chile, was more cautious. He would not commit to any position until the Institute of Hygiene had conducted series of inoculation tests.

Dr. Ducci, Professor of Medical Physics in the Faculty of Medicine, University of Chile, believed that the outbreak, in Chile, was influenza with characteristics similar to those of Spanish influenza; however, he did not believe that it was Spanish influenza proper. Dr. Ducci believed
that Chile was also facing an outbreak of typhus, similar in gravity to the outbreak experienced in Serbia. Dr. Ducci said that there was no way to prevent influenza; it could only be alleviated with high dosages of quinine. As for typhus, he recommended social distancing noting that the best prevention was to avoid public gatherings and places where people congregated, such as churches and cars. He also cautioned that maids had to be careful when bringing back clothes that had been sent away to be laundered. Presumably he was alluding to the threat of lice being ferried back to people’s homes after having being contaminated by another person’s clothes or linens.

Dr. Tomás Quesada, a radiologist at the Saint Vincent de Paul Hospital in Santiago, believed that the majority of the severe cases observed were epidemic typhus and that only benign cases were influenza, but not Spanish influenza. For the treatment of influenza, he recommended avoiding exposure to cold, gargling and rinsing the mouth and nose with an antiseptic solution, and inhaling menthol. For the treatment of typhus all he could recommend was the systematic eradication of infected lice.

Dr. Juan de la Vega, Head of the Institute of Pathology at the University of Chile's Faculty of Medicine, reported that he felt that the outbreak was Spanish influenza and recommended inhaling a concoction of caffeine, aspirin and quinine crushed into powder. He neither confirmed nor rejected the possibility of a concurrent typhus epidemic, saying only that he understood that some of his colleagues had observed cases of epidemic typhus.

What kind of practical advice could these doctors provide Chileans so that they could protect themselves? None. Exasperated, the author concluded:

To you who, when you are sick see the expert arrive at your bedside who with the magisterial aura of a priest, and that by merely stretching your hand out you begin to feel revived—I would not deprive anyone of this belief simply because they did not hear the debates. [To you who knows no better] they will speak to
you in dogma making you feel reassured. And by your faith, you shall be healed ...
... And believe it or not maybe the same shall happen to me.272

With such lack of consensus and direction, Chileans could not expect much practical advice. The lack of consensus amongst Chilean physicians frustrated Chileans and government officials. Bothered that some of his colleagues did not share his view, Dr. Arturo Atria, Chief Bacteriologist at the Institute of Hygiene, and the leading proponent of the typhus theory, wrote: “If the present illness is not epidemic typhus, then what is it? Analysis and investigation into other known illnesses have come back negative...this epidemic can be nothing other than epidemic typhus, an illness that has been endemic in Chile, and consequently, we should not lose sight of its permanent prevention.273

The decision to label the epidemic as typhus was made prematurely on October 18, 1918, without official approval from the Medical Association of Santiago or the Ministry of Interior. The unilateral announcement by Dr. Atria caused a great deal of upset and friction amongst physicians and politicians. The debate took on such a combative tone that objectivity was lost. Early on in the outbreak, there was a group of doctors who were intent on declaring the epidemic to be typhus. They refused to seriously consider other options; instead, they invested all their energy into trying to convince others that the outbreak was typhus, taking smug satisfaction in supposedly being proven right:

It is said that when the existence of this illness [epidemic typhus] was being debated, it was passionately confirmed to be an exanthematic form of influenza. I congratulate the doctor who at the time clung to the true diagnosis for which there is no longer any doubt.274

272 Jorge Hubner, “Influenza, tifus o que?” 17, no. 840 SUC (31 October 1918): 12.
274 Meeting Minutes of the Medical Association of Santiago on 4 April 1919 RMCh 47 (1919): 302.
Were they proven right or did enough people buy into the misdiagnosis? Regrettably, these individuals were influential enough that they convinced other doctors, politicians, and the press that their diagnosis was correct. They smothered dissent and, in some cases, even intimidated and publicly ridiculed dissenters.

Dr. Atria made his unequivocal statement that the outbreak was epidemic typhus despite being keenly aware that Spanish influenza was spreading rapidly throughout the rest of the world. Chileans were not in the dark about the global pandemic. They could not have been. A survey of Chilean newspapers, summarized in the following section, shows that the global pandemic was well documented domestically.

6.2. Spanish Influenza in the Chilean Press

On September 23, 1918, El Mercurio (Santiago) reported that the Minister of the Navy had received telegrams from Rio de Janeiro, Brazil, that there were cases of “influenza española” aboard Spanish and other European ships in the harbor.275

On October 8, 1918, La Unión reported “very violent” cases of Spanish influenza in Johannesburg, South Africa.276

Also on October 8, 1918, El Mercurio reported that the steamship “King Alfonso XIII” had arrived in Havana, Cuba, on October 7 carrying 1,200 passengers, of whom 60 were sick with and 19 had died of Spanish influenza, en route. The article explained that the illness “presents high fever and delirium.”277

276 “Sud Africa – Johannesburg,” UN, 8 October 1918, p. 15.
277 “La influenza a bordo del “Alfonso XIII,”” MERC, 8 October 1918, p. 15.
In the same issue of *El Mercurio*, it was also reported that the epidemic of influenza had spread across all of Spain. In Barcelona there was news that the epidemic was spreading quickly and that entire families were bedridden. Factories had closed, classes were cancelled, and agriculture production down because of shortage of hands. The steamship “Infanta Isabel” arrived in Las Palmas, Canary Islands, with 500 passengers; some of the sick (and dead) had been taken off the ship and quarantined at some other remote location during the journey from Spain. When the ship arrived at port it was cordoned off by military personnel.278

On October 12, 1918, *La Unión* reported cases of “Influenza Española” in Cape Town, South Africa, Spain, and Rio de Janeiro.279 In Spain, annual *Día de la raza* celebrations were postponed as a result of the disease.280

On October 17, 1918, *La Unión* reported cases of influenza in Buenos Aires, Argentina, despite maritime quarantine efforts, cognizant that the epidemic had been raging in a “truly violent form” in Spain for “several months.” According to the telegram:

> What is most alarming is the violence and speed of the contagion. In this respect it has no comparison. It can be said that it attacks groups of people, in large numbers and in such a manner that when it reaches barracks all soldiers fall ill at once.281

On October 23, 1918, *La Unión* reported that “La Influenza Española” was rampant in Spain, particularly in the cities of Madrid, Toledo, Barcelona, Segovia, Leon Alicante and Coruña. In Coruña, it was reported that many doctors had fallen ill with the disease. In Alicante, 28,701 people were reported sick and 1,202 dead. In Barcelona, 320 people had died. In

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278 “Madrid – La epidemia,” *MERC*, 8 October 1918, p. 15.

279 “La epidemia de la “Influenza Española” o “Grippe”. Amenazador desarrollo que adquiere. Medidas que se toman para impedir su propagación,” *UN*, 12 October 1918, p. 3.

280 “Postergación de las fiestas de la raza,” *UN*, 12 October 1918, p. 3.

281 “La gripe a las puertas,” *UN*, 17 October 1918, p. 1.
Santander, 52 people were reported dead. In León, there were several reports of entire families succumbing to the disease.

In that same issue of La Unión (October 23, 1918), cases of Spanish influenza were reported from Buenos Aires, New York, Montevideo, Rio de Janeiro, and Rome. It was reported that, in Rio, 1,067 victims had just been buried. In Montevideo, cases of influenza had just started to appear on October 22 and they were relatively benign. All this changed a few days later. By October 28, 1918, Montevideo was being overwhelmed by cases of the disease.

On October 28, 1918, La Unión reported on the disruption caused to the French legislature because of Spanish influenza.

On December 23, 1918, El Mercurio published an interview with the Chilean military attaché to Brazil, Captain Alejandro Salinas, in which the officer spoke, at great lengths, about his observations of the public health response to fighting Spanish influenza in Brazil and Argentina. According to Captain Salinas, 20,000 people in Rio de Janeiro had died of the illness.

In December 1918, Dr. R. Kraus, Head of Bacteriology in Argentina, went to Chile at the invitation of the Chilean medical community to talk about, among other things, the “influenza epidemic.” In a presentation to the Medical Association of Santiago, Dr. Kraus categorically affirmed:

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282 La “Influenza Española” continúa propagándose con caracteres alarmantes,” UN, 23 October 1918, p. 8.
283 “De Francia. Estagos que hace la grippe,” UN, 28 October 1918, p. 3.
284 “Entrevista con el Adicto Militar de Chile en el Brasil, Capitán don Alejandro Salinas,” MERC, 23 December 1918, p. 19.
Not in Europe, nor in America, has anyone questioned the petequial fever characteristic of influenza; there were some doubts about the diagnosis but after bacteriological investigations the character of this illness was confirmed.286

Citing Spanish and French observations, Dr. Kraus reported that medical officials in those countries had confirmed that “the epidemic in France is the same as the one in Spain and in the rest of the world; we can definitively confirm that no epidemic, or even isolated, cases of cholera, pneumonic plague or typhus exanthematicus exist.”287

6.3. Typhus: An Ancient Scourge

6.3.1. History

Typhus is an ancient disease. No one knows when it first appeared but it is a suspected cause of the Athenian plague in the 5th century B.C., the Antonine plague of the 2nd century A.D., and the Justinian plague in the 6th century A.D.. Typhus is thought to have occurred in Europe during the Crusades, in the 13th century, and during the Spanish reconquista, in the 15th century. It is likely to have occurred in Mexico during the 16th, 18th and early 20th centuries, as well as during the 30 Years War, in the 17th century, and in 1812 during the Napoleonic Wars.288 The disease ceased to cause continent-wide epidemics in Europe by 1815, but still produced localized

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286 “Estudios sobre la epidemia de la influenza por el profesor Dr. R. Kraus (Director del Instituto Bacteriológico de Buenos Aires) y por el Dr. L. Kantor,” RMCh 46 (1918): 265.

287 Ibid.

288 For an account of a possible typhus epidemic in Mexico in the 18th century see, América Molina del Villar, La Nueva España y el matlazahuatl, 1736-1739 (Mexico, D.F.: Centro de Investigaciones y Estudios Superiores en Antropología Social, 2001). As with other accounts of typhus in Mexico, it is hard to say if the outbreaks were really epidemic typhus, which is characterized by its very specific mode of transmission through human lice (distinct from animal lice). In Molina del Villar’s book the author talks about “fleas from rats and lice”. Fleas from rats can cause murine typhus outbreaks which are serious but not on the same scale of catastrophe as epidemic typhus. Molina del Villar also suggests that the spread of typhus may have been hastened by malnutrition caused by famine, which suggests a misunderstanding as to the causes of typhus. Typhus usually appears in conditions of upheaval, such as war and famine but not because of lack of nutrition, rather, because these conditions lead to shortages of water and severe overcrowding. Lack of bathing, laundering of clothes and linens combined with severe overcrowding create conditions ripe for the spread of human lice, the vector for epidemic typhus.
outbreaks (some large) until the end of World War Two. Typhus is known to have occurred during World War One, the Bolshevik Revolution, and in Europe and North Africa during World War Two.\textsuperscript{289}

Major outbreaks of epidemic typhus occurred in Serbia and Poland during World War One. Between 1917 and 1925, 25 million people in Russia fell ill with typhus and, of those, 3 million people died.\textsuperscript{290} During World War Two, typhus outbreaks were confined to concentration camps and Prisoner-of-War camps. There is evidence that the Nazis intentionally infected up to 600 prisoners with typhus while attempting to develop a vaccine.\textsuperscript{291} In the U.S.S.R., there were efforts to weaponize typhus by containing aerosolized infected louse excrement. In recent times, concern has been raised about the potential use of typhus as a biological weapon by terrorists.

It is not known, with certainty, when typhus arrived in the New World. The general consensus is that typhus was imported by the conquistadors and slaves during the Spanish Conquest; however, there is reason to suspect that the disease may have been circulating in the New World prior to the arrival of the Spanish. In pre-Columbian times, the Anáhuac people of the central plateau of Mexico described an illness very similar to typhus which they called \textit{Huey Cocoliztli}. Whether this disease, which caused cataclysmic epidemics in Mexico in 1545-48 and 1575-80, was a New World typhus remains uncertain. Charles Nicolle, physician and Nobel Prize winner for his research into typhus, believed the \textit{Huey Cocoliztli} epidemics were smallpox while Hans Zinsser, an early 20\textsuperscript{th} century bacteriologist, and others, including William H.


McNeill, a historian, believed that they were typhus. Other historians believe that the Huey Cocoliztli epidemics were a hemorrhagic fever of New World origin.

Typhus outbreaks definitely occurred during the colonial and republican eras in Central America and in the Andean Plateau. However, typhus was not believed to have existed in epidemic form, in Chile, until certain doctors began expounding theories about its historical presence in the country in an effort to make their case for its presence during the Spanish influenza pandemic of 1918-21.

6.3.2. Cause and Spread

There are several forms of typhus which include: epidemic typhus, caused by human body lice; murine typhus (endemic typhus), caused by fleas on rodents; Scrub typhus, caused by harvest mites on humans or rodents; and Spotted Fever, caused by ticks. Of these types, epidemic typhus, caused by the bacterium *Rickettsia prowazekii*, is the most deadly and is often associated with cataclysmic outbreaks following periods of major social upheaval. Major social upheavals, such as wars or famine, create conditions for the proliferation of typhus: lack of water resulting in poor hygiene and the inability to regularly or properly launder; overcrowded living conditions; and human body lice. As discussed in section 6.1.1, above, epidemic typhus occurred quite frequently in the historic record; in modern times, however, it is rare.


Humans are the single reservoir of significance for epidemic typhus. This means that the disease causing bacteria *Rickettsia prowazekii* dwells naturally within infected people who normally remain asymptomatic. The bacteria spreads with the aid of a vector: in the case of epidemic typhus the vector is human body lice. Human body lice (*Pediculus humanus humanus*) is a specific species of lice. It is different from its cousins, head lice (*Pediculus humanus capitis*) and pubic lice (*Phthirus pubis*) and, it is worth noting, does not come from rats.

Human body lice, which are roughly the size of a sesame seed and, therefore, visible to the naked eye, hide in clothing, bed sheets, or other fabrics that have gone unwashed for prolonged periods of time. In clothing, human body lice is usually found in a garment's underarm, neckline, and waistline areas. When the fabric comes into contact with human skin, the louse crawls from the fabric and on to the skin where, before expiring, it feeds on human blood which may, or may not, carry the *Rickettsia prowazekii* bacteria. If the blood carries the *Rickettsia prowazekii* bacteria, the louse will, itself, die of infection. Before dying, however, the louse crawls onto another human being, bites into that person, and leaves an open wound. It is not the bite of the louse that transmits the bacteria, but the excrement which is left on the wound and inoculated into the wound when the wound is scratched.

The presence of body lice does not guarantee the spread of epidemic typhus. Homeless people, for example, can suffer from human body lice infestation and, as a result, suffer from all sorts of skin infections and secondary infections; however, such an infestation does not automatically mean that the person is infected with epidemic typhus. In order for epidemic typhus to occur, body lice need to feed on a person who is carrying the bacteria and then they

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295 The human body louse will reproduce by gluing its eggs (nits) into clothing and fabrics. It can produce up to 300 eggs in a lifetime.
need to spread it to others. Since body lice do not fly or jump, the only way for them to spread
the infection is by crawling from one person to another. This method of transmission is
facilitated in circumstances of overcrowding where people do not regularly wash, either
themselves or their linens, but frequently share such unlaundered clothing and blankets. Thus,
several conditions have to align before epidemic typhus occurs.

Wars and famine are usually ideal conditions for the proliferation of epidemic typhus
because, in these conditions, water for bathing and laundering becomes scarce and the more
immediate need of survival makes bathing and laundering less of a priority. Further, wars and
famine usually lead to crowding in camps or other locations of refuge. The most effective way of
stopping and preventing the spread of epidemic typhus is by bathing regularly and laundering
clothes in hot water at least once a week.

6.3.4. Symptoms

*Rickettsia prowazekii* has an incubation period of 14 days from the time of the louse bite
to the onset of symptoms.\(^{296}\) Early symptoms include fever and severe headache. Abdominal
pain is present in most cases. Other symptoms include chills, rash, myalgia and arthalgias.
Prolonged sickness, as would have occurred in the pre-antibiotic era, would have lead to a
degradation of the central nervous system with photophobia, tinnitus, stupor, delirium, coma and
seizures ensuing. Pulmonary infection with a nonproductive cough might also occur. Rash and
petechiae is often associated with epidemic typhus, however, this only occurs in half of those
infected. Mortality for typhus differs dramatically depending on the availability of antibiotics.

\(^{296}\) Raoult, Woodward and Dumler, "The History of Epidemic Typhus," 129.
With antibiotic treatment, mortality from typhus is 4%; without antibiotic treatment, as would have been the case in 1918-21, mortality from typhus is 60%.  

Historically, typhus and typhoid were often confused with each other. In 1739, English surgeon and specialist on fevers, John Huxham, first suggested that a fever resembling typhoid, which he described as a "slow nervous fever," was distinct from that of typhus, which he described as "putrid, malignant or pestilential, petechial fevers." In the 18th century, François Boissier de Sauvages, a French physician and botanist, went a step further describing the "putrid, malignant or pestilential, petechial fevers" as "typhus," from the Greek word typhos, to characterize the hazy stupor characteristic of this fever. In 1836, American William Wood Gerhard clearly distinguished the two illnesses. Two years later, German physician, John Lukas Schoenlein referred to typhoid fever as "typhus abdominalis" and typhus fever as "typhus exanthematicus." In 1918, Chilean doctors and advocates of the typhus theory would use this same terminology (i.e.: "typhus exanthematicus") to make the case that typhus had always been present in Chile and that earlier cases of typhoid were, perhaps, really typhus.

In 1909, Charles Nicolle discovered that lice were vectors in the spread of typhus after observing that patients who bathed and had their clothes changed were no longer contagious. Nicolle’s general conclusions about bathing and laundering were correct, but he was wrong.

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300 Ibid.


about the actual cause of infection (he thought it was the bite of the louse). In 1938, Dr. J. Starzyk demonstrated that it was the excrement of the louse, not the bite, that caused infection.\(^{303}\)

6.4. The Argument for Typhus – Dr. Atria’s Letter to the Consejo Superior de Higiene

As discussed above, Dr. Arturo Atria, Chief Bacteriologist at Chile’s Institute of Hygiene, categorically opined that, in 1918, the country was suffering from an outbreak of typhus; the earlier identification of the disease as Spanish influenza was, in his opinion, premature. Dr. Atria provided his diagnosis of the 1918 outbreak on October 21, 1918, in a letter to the Consejo Superior de Higiene in which he proclaimed that the disease "has to do solely with a petechial or exanthematic typhus epidemic."\(^{304}\) On the following day, Dr. Atria had his letter published, in its entirety, in two national newspapers, El Mercurio and La Nación.

Publication of Dr. Atria’s letter caused confusion and uproar. Neither the Ministry of Interior nor the Faculty of Medicine at the University of Chile, whose opinion regarding the nature of the disease had been solicited by the government, had a chance to review, let alone respond to, Dr. Atria’s letter prior to its publication. Dr. Atria, and his followers, confidently proclaimed that the outbreak was typhus amidst the awkward spectacle of conflicting media reports and dissenting physicians who insisted that the disease was Spanish influenza.

When the Director of Public Health in Valparaíso, Dr. D. Senén Palacios, claimed that he had identified fatal cases of typhus, his colleague Dr. Moore rejected the diagnosis and told the Faculty of Medicine that they were, in fact, cases of Spanish influenza, which he could confirm after having performed autopsies.

\(^{303}\) Ibid.

\(^{304}\) Dr. Arturo Atria to Dr. Ramón Corbalán, Director, Dirección General de Sanidad, Santiago, 21 October 1918 in RChH 25 (1919): 70.
Dr. Atria argued that since arrival of the Spanish in the 16th century, typhus had been endemic in Chile. He argued that between 1850 and 1889 historical instances of typhus had been misclassified as typhoid fever. He claimed that cases of typhus were not documented again until 1907. To validate his position, Dr. Atria combed 19th century studies and theses by Chilean doctors to uncover suspected cases of typhus that may have been otherwise diagnosed erroneously.

Referring to Dr. Juan B. Miranda’s 1886 thesis from the Faculty of Medicine, University of Chile, Dr. Atria identified two cases that had rich clinical descriptions but no diagnoses. Based on the clinical descriptions provided in the thesis, Dr. Atria argued that the cases likely involved typhus.

In the May 20, 1892, meeting minutes of the Medical Association of Santiago, Dr. Atria found a discussion concerning typhoid fever reported by one Dr. Molinare. In his report, Dr. Molinare indicated that two individuals, one sick for 8 days and the other for 12 days, had symptoms that resembled typhoid fever. However, because that they had begun to recover earlier than the typical clinical period for typhoid, Dr. Molinare doubted that these were actually cases of typhoid fever. The patients received a treatment plan that involved chamomile and soda of sulfate, followed by an enema and the administration of Salol, a phenyl salicylate used at the time as an intestinal antiseptic. Dr. Atria questioned whether the futility of the treatment plan in these cases could be likened to the futility of the Hexamethylenetetramine (urotopine) treatment plan for suspected cases of "typhus" in October 1918. In 1918, Hexamethylenetetramine (urotropine) was used to treat a variety of infections including typhus, influenza, pneumonia and “nephritis TB.”305 Doctors were aware of its curative properties, but not that it was an antibiotic

305 Meeting Minutes of the Medical Association of Santiago on 16 May 1919 RMCh 47 (1919):482.
suitable for the treatment of intestinal infections, a revelation that would not come until later. It is now know that Hexamethylenetetramine (urotropine) can have damaging effects on the kidneys. Dr. Maximiliano Guzmán, a medical intern at Saint Vincent de Paul Hospital, in Santiago, died of “typhus” in November 1918, following treatment with urotropine. Dr. Prado Tagle, Guzman's physician, would later comment that the drug was not helpful and only seemed to worsen his patient's condition: “We have not seen good results with urotropine; its use in Dr. Guzman's case aggravated his renal phenomena.”

Dr. Atria also discovered a 1901 presentation by Dr. Antonio Tirado, made during the First Congress of Latin American Doctors, which detailed an outbreak of typhoid fever in Ovalle. Dr. Tirado provides the following description of the outbreak in Ovalle:

Epidemic with epidemic recrudescences, common infection or of frequent observation, dominates in permanence in the city in which a defective pipeline and lack of potable water conspire to maintain this endemic disease. Its most intense epidemic exacerbation and its greatest severity of infection manifested in 1894 and 1895 when it invaded the whole department. This epidemic especially affected the poorest people accumulated in unsanitary lodgings and worked by the misery and had serious ataxodinamica forms that were observed from the first days of the disease. Before the first week was over, the typhoid state was very intense, revealing the severity of the infection; in the second week, the eruption took on the appearance of ecchymotic spots or plates, copious and frequent diarrhea, the heart became weak and in the majority of cases, death occurred between the 10th and 14th days. With this serious nature and progression, typhoid fever swept through the entire department devastating the populations or human groupings.

Notwithstanding Dr. Tirado's description of the Ovalle outbreak, Dr. Atria proposed that it was, more properly, an outbreak of typhus.

306 Ibid.

Typhoid fever and similar illnesses, such as salmonella, are commonly found in places with infected water sources or poor hygiene in food handling and food preparation which could easily result from a lack of clean water. Dr. Tirado also mentions that the sick experienced “copious and frequent diarrhea,” a symptom which is characteristic of typhoid but not typhus. Dr. Didier Raoult, perhaps the leading expert on typhus, has said “Compared with typhoid, diarrhea rarely occurs with typhus.”\textsuperscript{308} The conditions described by Dr. Tirado do not appear to be the smoking gun that typhus was present in Chile, yet Dr. Atria seemed certain that the Ovalle outbreak had been an outbreak of typhus and not typhoid, stating: "This relationship, by its clinical picture, by its evolution, by its fatal ending between the 10th and 14th days, and by its epidemic character corresponds exactly, without any omission, to exanthematic typhus. It does not lack a single detail."\textsuperscript{309}

Dr. Atria also refers to a report given by Dr. Alfredo Marín, of Vicuña, in 1900 during the VI Congress of Science in Chile:

\begin{quote}
Among the epidemics of telluric origin that are observed throughout the whole valley, first, typhoid fever, arriving on occasions to take the true form of exanthematic typhus of the warm countries. As with almost all infectious diseases, this one has its maximum recrudescence in the summer. When typhoid takes the character of exanthematic typhus, the prognosis is very serious and despite methods of treatment by direct or indirect antisepsis, the disease usually ends in death. The same does not occur in children; treatment is almost certain, noting, yes, a very long period of recovery.\textsuperscript{310}
\end{quote}

Dr. Atria then connects Dr. Marín’s account from Vicuña with the two cases described by Dr. Tirado, in Ovalle, arguing that the link was so strong between these two cases that “we can say

\textsuperscript{308} Didier Raoult \textit{et al.} “Outbreak of epidemic typhus associated with trench fever in Burundi,” \textit{The Lancet} 352 (1 August1998): 357; See also Raoult, “The history of epidemic typhus,” 134.


\textsuperscript{310} Ibid, 643.
by describing this disease, Dr. Marin has all but labeled [as typhus] the disease described by Dr. Tirado.\textsuperscript{311} According to Dr. Atria, Dr. Marin’s account was so damning that there was no need to clinically describe the illness. Without a doubt, declared Dr. Atria, this was also a case of typhus. While typhus can occur anywhere, it tends to surface in colder climate such as the Peruvian altiplano, Siberia, and more recently in remote areas of higher elevation in Burundi and Rwanda.

Dr. Atria believed the strongest support for his position was the laboratory results he got using the Weil-Felix test; however, it is now known that such a lab test for typhus produces unreliable results. Using test results from the more accurate immunofluorescent antibody (IFA) test as a benchmark, the Weil-Felix test had a low sensitivity (33\%) and low specificity in diagnosing acute rickettsial infections where a positive titer of 1:320 had been reported in 54\% of healthy volunteers and 62\% of non-rickettsial fever patients.\textsuperscript{312}

\textsuperscript{311} Ibid.

Chapter 7: Societal Impact

7.1. Diffusion of Spanish Influenza across the Country

7.1.1. The October-December 1918 Wave

During the October-December 1918 wave, 6,026 people died of influenza, 16,944 people died of pneumonia, and 342 people died of "typhus" in Chile. The October wave came to Chile shortly after Spanish influenza's arrival in Brazil and Argentina in mid-September. Chilean news sources began reporting outbreak cases in Santiago in early October, although medical professionals had been reporting cases as early as late September. Dr. Arturo Mardones, for example, refers to several patients who were observed on September 30, 1918. These individuals may have fallen ill as early as September 24. All were young men (18 to 39 years of age) who worked in butcher shops, barber shops, and fruit stands in La Vega, a popular outdoor farmers' market in central Santiago, one block east of Avenida de la Recoleta and Santa Filomena (see red circle in Figure 28 below).


Figure 28: Excerpt of Map of Santiago and Environs, 1923.

Source: Plano de la ciudad de Santiago y sus alrededores (Santiago: DAK, 1923).
Those patients observed by Dr. Mardones on September 20, 1918, all experienced a week-long fever of 39-40°C (102.2-104°F) accompanied by elevated heart rate, rapid breathing, loss of appetite and, in some cases, delirium and unconsciousness.\textsuperscript{315} As the initial cluster of known cases came from La Vega farmers’ market, Dr. Mardones concluded that this had to be the focal point of infection.\textsuperscript{316} His conclusion was readily accepted by his peers with little debate.\textsuperscript{317} Allegations that the outbreak began in La Vega were greatly exaggerated. On October 22, 1918, vendors from the La Vega published an announcement in \textit{El Mercurio} saying:

Management keeps the cleanliness and hygiene of the market in the best condition possible. It is not easy to keep as clean as one's living room an outdoor market in which 700 to 1,200 mules and 1,000 or more horses pass through daily...at the moment very few vendors of the La Vega have become sick, so few that their names are known, and only five have died...some have been identified as dead in a newspaper, such as "Pedro El Crespo", who goes by the name Segundo Céspedes, who live happily in good health.\textsuperscript{318}

Rogelio Ugarte, the Mayor of Santiago, was notified of the epidemic’s arrival along the outskirts of the Mapocho barrio on October 14, 1918.\textsuperscript{319} In response, he mobilized a group of medical professionals to advise him on the nature of the contagion, its diffusion, containment, and treatment.\textsuperscript{320} The mayor was told that a \textit{conventillo} on Santa Filomena Street and Recoleta Avenue, near La Vega farmers’ market, was the “focal point of a contagious illness resembling

\begin{footnotes}
\item[315] Ibid., 231.
\item[316] Ibid., 227.
\item[317] Ibid.
\item[320] “Una epidemia a las puertas de Santiago,” \textit{NAC}, 15 October 1918, p. 11.
\end{footnotes}
typhus”. The Santa Filomena conventillo was frequented by migrant peasant farmers, from the rural periphery, who travelled to and stayed in the city on an extended but temporary basis to sell vegetables at the farmers’ market:

I also cite the case of an inn for workers on Santa Filomena Street near Recoleta from which numerous lodgers attacked by this illness have been removed during these past few days. To this inn typical of the type that abounds in this barrio, arrive peasants from the surrounding areas of Santiago to sell vegetables at the Vega Central in search of lodging.

Believing that the cause of the epidemic was typhus and that it had begun in the Santa Filomena conventillo, Mayor Ugarte ordered the immediate disinfection of all conventillos in Santiago. Not surprisingly, the initiative bore little effect. The epidemic was influenza, not typhus. As a disease control measure for influenza, the one-time disinfection of domiciles would have had a marginal impact. Frequent disinfection of public spaces such as streetcars, although of marginal benefit, would have been more helpful. This type of disinfection was eventually ordered, but only well after the illness had spread significantly.

The epidemic quickly spread across Chile with reports of widespread illness and death in Melipilla, Ñuñoa, Traiguén, Rengo, Constitución, Concepción, Talcahuano, Talca and Valaparaiso. On October 18, 1918, the Ninth Precinct of Santiago reported six cases of influenza to the Prefect. That same day, a meeting of the Medical Association of Santiago was convened in Salvador Hospital. The meeting was chaired by the Daniel Bernales, the hospital

321 “La Epidemia de Influenza,” MERC, 18 October 1918, p. 17.
322 “La grippe o influenza española,” NAC, 16 October 1918, p. 13.
323 Ibid.
324 Ibid.
326 Ibid.
administrator, and attended by doctors Benavente, Pérez Canto, Fontecilla, Mujica, Córdova, Torres Bonnen, Covarrubias, Ostornol, Charlín, Rodríguez, Molina, Ibarra, Monckenberg, Muñoz Pal, Barraza, Suarez, Villa Novoa and others. By October 23, the epidemic was present in most districts of Santiago with a 5% mortality rate. Around the same time there were more confirmed cases in Valparaíso, Talca, Chillán and other cities in southern Chile. By November 15, it was reported that in 4 days alone there had been 477 influenza related deaths in Santiago. Overall, the month of November 1918 left 2,412 people dead from influenza and “typhus” in Santiago. Rail workers, tram drivers, stable workers, prisoners, and telegraphers, were among some of trades hardest hit by the disease. Despite suggestions to the contrary, members of the upper class were equally affected by the pandemic. They also died abroad. On November 28, 1918, El Chileno reported that don José María Vial Vial, a member of a prominent Santiago family, had died from influenza while in London.

7.1.2. The August-September 1919 Wave and Beyond

The August-September 1919 wave (winter months in the southern hemisphere) struck Chile with lethal ferocity. Unlike most of the western world, Chile’s major pandemic wave did not occur in October-December 1918, but rather in August-September 1919. Argentina and

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327 “Reunion de medicos en el Hospital del Salvador,” MERC, 18 October 1918, p. 17.
328 “La Influenza,” CHIL, 23 October 1918, p. 1.
331 “Mortalidad en Santiago,” CHIL, 2 December 1918, p. 1.
Australia experienced a similar epidemiology. The August-September 1919 wave rolled into Chile from Córdoba and Salta, Argentina after having devastated those cities. In 1919, there were 23,789 deaths directly related to influenza, up nearly 400% from the year before. The outbreak began quickly and in multiple locations. At its start, in early August, the Minister of Interior received telegrams of new cases from the north and south of the country.334 In Valparaíso, 20,000 people were reported ill in early August—the start of the August-September 1919 wave.335 On one particular day, in the small town of Tomé, there was such an influx in the number of sick and dead—260 sick of whom 40 died—that the town’s cemeteries, cadaver transportation teams, and mortuaries were overwhelmed and unable to keep up thereby leaving people unburied for longer than required by law. The town’s physician, Dr. Franco, commented that the macabre sight prompted many to draw comparison to the plagues of the medieval period.336 In the town of Colbún (193 mi south of Santiago) in the southern province of Linares, 70% of the town was sick with 7 people dying per day. The town’s officials pleaded for a doctor to be sent to their town. 337 At the time Colbún had a population that was in the hundreds. During the August-September 1919 wave, entire cities were temporarily crippled with sick and dying people. In Vicuña, a city just outside of Coquimbo, which was among the hardest hit, 1,500 people in the city were reported sick, all at once, and virtually the entire police force was bedridden leaving hospitals overstretched.338 In the northern city of La Serena, entire families

335 “La grippe, el tifus y el desinfectorio,” UN, 3 August 1919, p. 10.
336 “Sanidad, hospitales, alarmas,” MERC, 23 August 1919, p. 3.
fell at once. During peak outbreaks sanitary police patrolled the streets to recover the cadavers of people who had dropped dead in the street.

Doctors continued to speak of two epidemics, attributing the spike in deaths to typhus rather than influenza even as spikes in illnesses highly correlated with influenza, such as pneumonia, were also on the rise:

Dr. González H. – The mortality rate fluctuates at around 16% this year. The mortality rate within the first 48 hours is high...The sick arrive at the hospital only to die.

Dr. Vargas S. – We have been informed that 70% die within the first 48 hours of being admitted to the hospital.

Dr. Rodríguez – Something similar is happening with pneumonia. Many who are sick come to die in hospital rooms...

During the August-September 1919 wave, “no prison, police barracks, army barracks, school or meeting place” was spared.

7.2. Hospitals

During the Spanish influenza epidemic, hospitals were overwhelmed by the number of sick and were forced to turn people away. The magnitude of the crisis in 1919 can be seen when one looks at the month-to-month admission numbers for Santiago area hospitals. During the October-December 1918 wave, hospital admissions rose dramatically from those numbers recorded in 1917 over the same period. This change was structural, for admissions stayed at 1918

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339 “La Serena,” MERC, 12 August 1919.

340 Meeting Minutes of the Medical Association of Santiago on 12 December 1919 per Dr. Valenzuela B. RMCh 49 (1919): 546.

341 Meeting Minutes of the Medical Association of Santiago on 28 November 1919, RMCh 49 (1919): 542.
levels in subsequent years. A discernible spike occurred in August 1919 with 12,889 admissions, the highest admission figure for any month between 1919 and 1921 (see Figure 29).

Figure 29: Chile - Number of Hospital Admissions, 1917-1921.

![Graph showing hospital admissions from 1917 to 1921.]


Figure 30, below, shows the number of people, by age group, who were diagnosed with influenza, typhus, and pneumonia and who died or were discharged from hospital, in Chile, in 1919. Consistent with statistical trends in other parts of the world, the 20 to 39 and 40 to 59 year age groups had very high mortality rates. Again, this is consistent with global trends for Spanish influenza.
The inability of hospitals and doctors to deal with the surge of illness in September-August 1919 provoked calls for better hospital funding, a contentious subject even before the epidemic began. During the crisis, the DGS and the Medical Association of Santiago often described the state of the health care system in the most dire and hyperbolic terms. For example, the Talcahuano hospital was described as “completely inadequate” and worthy of demolition. For the Medical Association of Santiago, the main deficiency of the hospitals was the lack of space. It complained:
This Society always motivated by the public good, and alarmed by the steady growth of the typhus exanthema epidemic, takes this opportunity to remind you that it is necessary to work as diligently as possible to end the epidemic and again recommends the construction of special barracks as an isolation center for the sick.  

Throughout the epidemic, hospitals routinely pleaded to Congress for additional funds to pay for staff, beds, and supplies. The Medical Association of Santiago often lamented what it saw as government neglect:

The lack of resources to fight the epidemic persists to this moment. In Talcahuano they have had to suspend prevention work since August 10 due to lack of money and personnel. In Concepcion, employees get drunk and there is no way to fire them because they are owed pay. In Santiago it's the same situation as starving women come to the offices asking for certificates certifying that their husbands have not been paid so that they are not evicted from their homes. In the meantime there is little hope that new funding will be found. And there you have the situation.

As Figure 31 shows, revenue and expenses for hospitals was close to balanced in 1918 but then abruptly began to widen with growing deficits.

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342 Dr. J. Valenzuela B., President, Medical Association of Santiago to Minister of Interior, Santiago, 7 January 1919, ARNAD MININT, vol. 5120.

343 4 April 1919, ARNAD MINIT, vol. 5120.

344 Meeting Minutes of the Medical Association of Santiago on 31 October 1919 RMCh 49 (1919): 338.
Such requests became fodder for debate in Chile’s fractured and regionalized Congress where non-Santiago representatives and senators complained bitterly about the Santiago-centric national agenda, a long standing reality of Chile’s unitary political system.

The impact of the crisis was probably exaggerated in some localities to justify funding requests that had little to do with Spanish influenza. For example, in August 1919, opportunistic Senators representing their constituents from the various provinces overplayed the disease's impact in an effort to siphon funding from the central government. In one exchange, Senator Samuel González Julio (Curicó-Radical Party), speaking on behalf of the Junta de Beneficencia of Talca, requested funding for hospitals in his riding ostensibly to deal with overcrowding and resource shortages. He warned that without funding a hospital and nursing facility would have to
close. The original request, however, made little mention of the epidemic; instead it highlighted strains on health services relating to the medical treatment of women “attacked by social illnesses.” Funding was needed to ensure care for these “contagious women,” whose illnesses constituted “a plague on the community” and contributed to “the degeneration of the race.” The Minister of Interior approved the appropriation, which led Senator Bulnes to request money for the rise in epidemic cases in his province of Malleco. The Minister responded with an offer to send a public health brigade to Malleco to help stamp out the epidemic. Unimpressed, Senator Bulnes asked when the brigade would be sent and warned that there would be new victims if action was not taken immediately.

When Congress debated the appropriation of up to 250,000 pesos to provide relief to overwhelmed Santiago-area hospitals, Senator Rafael Urrejola (Valparaíso-Conservative) asked if a similar appropriation was being considered for Valparaíso-area hospitals given that the epidemic was unfolding there with greater severity. Senator Gonzalo Bulnes (Malleco-Liberal) added that he received word that the epidemic was unfolding with greater ferocity in Viña del Mar—Valparaíso’s twin city—than in Santiago, and that in any case he did not believe that the proposed appropriation was adequate. Pedro García de la Huerta, Minister of Interior (Maule-Liberal), responded saying:

The Government does not have official knowledge that the epidemic has unfolded in Valparaiso with symptoms more serious that those found in Santiago. The latest that is known is that the disease has spread to the Naval School.  

The exchange illustrates the all but common petty squabbling that characterized Congressional debates, but also poor communication between the central government and the provinces during the early days of the epidemic. The government appeared to be unaware of how quickly the disease was spreading outside of Santiago. While aggregate number of sick and dead

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in Santiago was higher than in other parts of the country—owing to its larger population—on a per capita basis, the mortality rate in Santiago was quite low as compared to southern Chilean cities and even Valparaíso. If Minister de la Huerta did not have an official reporting of the spread of the disease in Valparaíso by November 6, all he had to do was read the newspaper to get a sense of what was unfolding.

Chileans firmly held on to the theory that hospitals could be used to effectively shield the rest of society from contagion by admitting and isolating its carriers. Hospitals certainly had a role in combating infant mortality, which was notoriously high, but its benefit in coping with influenza outbreaks would have been limited; however, at the time few Chilean doctors took such a view. In justifying the movement of people from their homes to hospitals, Dr. Vial told the Medical Association of Santiago that: “It would have been a lot more dangerous to leave the sick in their homes.”346

Chilean doctors were influenced by European medical journals and scientific publications which described various isolation protocols that by definition required the existence of hospitals. Dr. Mamerto Cádiz, who had been sent to the Pasteur Institute by the Minister of Interior and commissioned with various studies, wrote that isolation protocols could be categorized according to their ideal method of isolation for prophylaxis and treatment. In 1917 he published Hospitales especiales para infecciosos where he claimed that the only way to effectively deal with infectious diseases was to increase construction of hospitals that are uniquely designed to deal with different isolation standards by disease. During the pandemic, Chile did not have hospitals designed according to these isolation standards. When the pandemic struck there was a perception amongst the medical community that the situation had been aggravated by this

346 Meeting Minutes of the Medical Association of Santiago on 31 October 1919 RMCh 47 (1919): 337.
deficiency. Having the appropriate isolation standards in place in a modern hospital was critical not only for the health and safety of patients, but also for caregivers:

The only thing that has been done to fight it has been to admit the sick in hospital where isolation practices have been defective which is the reason why so many nuns have been infected and fallen sick. 347

The most frequent grievance was that hospitals were inadequately prepared to deal with the crush of people. Was this an inadequacy that predated the outbreak and made worse by crowds of people overwhelming hospitals in search of medical treatment? It is difficult to say; however, the strategy that the Medical Association of Santiago and the DGS insisted upon would have stretched any hospital system to its limits. The strategy was as ineffective as it was costly (see Figure 31 above). The strategy advocated by the DGS and the Medical Association of Santiago was to get as many of the ill into the hospitals as soon as possible. It was reasoned that treating the sick in the hospital under the watchful eye of doctors was the only effective means to stop the spread of infectious diseases, in this case, believed to be epidemic typhus. Considering that the authorities were cramming contagious people, sick with influenza rather than typhus, into the hospital may explain why the hospitals had such high mortality rates. All the disinfecting of clothes and giving of baths advocated for the treatment and prevention of typhus would not have stopped the spread of influenza in severely overcrowded hospitals.

Transporting the sick to and from the hospital was also a problem. In early 1919, Rogelio Ugarte, the Mayor of Santiago, began investigating the possibility of renting trucks to supplement the municipality’s fleet of ambulances. 348 Mayor Ugarte was reportedly moved to make this decision following the case of Manuel Vásquez of 1669 Sargento Aldea Street. Mr.

347 Dr. J Valenzuela B., President, Medical Association of Santiago to Minister of Interior, Santiago, 7 January 1919, ARNAD MININT, vol. 5120.

348 “Tifus exantemático,” MERC, 10 January 1919, p. 18.
Vásquez was stranded in his home, unable to go to the hospital because of insufficient transportation for the sick. \(^{349}\)

**Figure 32: Ambulance used for Transporting Contagious Individuals.**

![Ambulance used for Transporting Contagious Individuals.](image)

*Source: RBP 2, no.4 (December 1918): 193*

### 7.3. Professions and Commerce

The professions, commerce, and industry were rocked by the pandemic. *El Valparaíso Gráfico*, a publication for printing press union workers, had to delay the printing of the “erogaciones” section because of the staffing shortage. \(^{350}\) On November 15, 1918, the *Valparaíso Gráfico* reported that it would have to forgo its usual practice of identifying sick members of the public because there would not be enough space to list everyone. Over 60% of

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\(^{349}\) Ibid.

\(^{350}\) “La lista de erogaciones,” *Valparaíso Gráfico. Periódico para las obreros de imprenta*, 15 November 1918, p. 4.
union members nationwide had fallen ill. Such an astonishing morbidity rate had a direct, albeit temporary, impact on national publications such as *El Mercurio* and *La Nación* as well as book printing presses:

This new illness that has come upon us hitting us with grave symptoms has also impacted Santiago printing especially personnel from *La Nación* and *El Mercurio* where numerous employees took time off but thankfully have returned to work.

Mr. Isidoro Pozo of the publishing company, *La Ilustración* in Valparaíso, was among those who succumbed to the illness. By December 1918, *La Unión*, a major national newspaper, and publishing houses, *La Opinión* and *El Diario*, were among other presses impacted by the labor shortages. The widespread disruption increased costs for the *Sociedad Unión de los Tipógrafos* as it tried to assist its members. While Spanish influenza was an economic disruption and health scare for most union members, some died suddenly and violently, often in the prime of their lives and having been otherwise healthy.

Luis Santiago Martínez, of Santiago, died on December 3, 1918. Mr. Martínez worked for the newspaper *El Diario Ilustrado* as head of the classified advertisements section. He died at 33 years old, in the "prime of youth," of pneumonia, a "cruel illness" that had been "impossible to suppress." It is quite possible that others died of Spanish influenza or related complications and that the nature of their illness was not publicly disclosed. Misinformation about the disease,


353 Ibid.


355 Although not always. On 15 November 1918, the *Valparaíso Gráfico* reported that an “older” union member who worked for “La Ilustración” died of Spanish influenza.

further complicated by the lack of coherent public health advice, led some to believe that Spanish influenza was the result of poor sanitary conditions at home and in the workplace. On November 15, 1918, the *Valparaíso Gráfico* wrote:

> In other publications it has been noted with regard to this epidemic, which they call *Spanish influenza*, that one of the causes by which our colleagues are falling ill is the complete unsanitary state of the spaces in which the different newspaper sections operate.\(^{357}\)

Acknowledging that a person died of such an illness might have been tantamount to saying that one lived or worked in unsanitary conditions. With such a stigma attached to Spanish influenza, what family or employer would want to admit that one of their own died of such an illness? For the time periods October-December 1918 and August-September 1919, when Spanish influenza struck Chile the hardest, many death announcements appear, particularly for the upper classes, in which individuals died suddenly, at a young age, yet the causes of death were not disclosed. Is it possible that some of these deaths were influenza?

In his work on bubonic plague in early 20\(^{th}\) century Peru, Marcus Cueto notes that admitting that one was sick with plague would have invited not only the humiliation and inconvenience of having one's property fumigated but also social stigma.\(^{358}\) One would be grouped with the most marginalized members of society derided for their lack of hygiene and licentious lifestyles. It would have been better to die quietly and with little notice than to admit the shame of being infected with plague observes Cueto. Could the same angst have influenced the reporting of outbreak deaths in Chile during the Spanish influenza pandemic?

*La Cachimba*, a periodical with a Northern Chilean working-class following, acknowledged challenges dealt to it during the pandemic with humor:

\(^{357}\) "La Gripe," *Valparaíso Gráfico: Periódico para las obreros de imprenta*, 15 November 1918, p. 4.

There is no doubt that the notorious flu in its bid to make itself fashionable is toppling people indiscriminately and has left almost no one standing. So much is its fury that it even paid a visit to La Cachimba [a tiny local publication], which people usually ignore, and even managed to disrupt the Sunday edition. But we are back up on our feet once again and forward we go with greater energy.\textsuperscript{359}

\textit{Don Mercurio}, a major publication and regional news cable provider in northern Chile, was also affected. Short-staffed, the publication struggled to deal with the dearth in content by publishing whatever stories it could muster resulting in an odd, grab-bag variety of content and non-conforming style with articles that were “too big, too small, too wide, too narrow, with fewer columns, etc., etc. That is to say a disaster with capital letters.”\textsuperscript{360} The pandemic dealt a fatal blow to publications that were already struggling. \textit{El Día Cóxico} was one such publication that died “sickly and with flu”.\textsuperscript{361} “Requiscat in pace” eulogized \textit{La Cachimba}.\textsuperscript{362} Other entertainment suffered too. With morbid humor, \textit{La Cachimba} described how the Cinema Prat in Antofagasta had succumbed to the Spanish flu, leaving behind inconsolable mourners that included “el Gringo chico,” Mr. Bidwell.\textsuperscript{363}

Telegraph workers were also severely affected, probably due in large part to their work environment which caused them to be clustered in densely populated rooms for extended periods of time (see Figure 33 below). This was an experience reported in Buenos Aires and throughout the world;\textsuperscript{364} indeed, it was also a characteristic observed decades earlier during the Russian flu pandemic. Erokera notes that the first cases of Russian flu in Paris were “benign and affected,

\begin{footnotes}
\item[360] Ibid.
\item[361] Ibid.
\item[362] Ibid.
\item[363] Ibid.
\item[364] Christine M. Kreiser, “Influenza 1918: Enemy Within, " \textit{American History} 41, no. 5 (December 2006): 26.
\end{footnotes}
among others, employees of large commercial stores, and of the post and telegraph officer service."³⁶⁵

**Figure 33: Telegraph Workers, (Santiago, 1918).**

Source: “Telegrafo y telegrafistas,” ZZ 14, no. 717 (16 November 1918).

In March 1919, the *Inspección de Higiene y Salubridad Municipal* expressed serious concern about hygienic practices in pawn shops where used clothing was sometimes held as collateral or put up for sale. Pawn shops were already subject to a five cent tax per receipt, which the municipality of Santiago justified as necessary to offset public health costs associated with the activities of pawn shops that public health officials believed facilitated disease transmission.³⁶⁶ A similar tax was imposed on barber shops and brothels. With respect to the pawn shops, the Mayor’s office, in Santiago, was concerned that appropriate measures were not


taken to screen and sanitize the clothes. Consequently, the Municipality of Santiago issued a decree mandating the following:

1st. That the pledge of used clothes involves a grave public health danger due to germs and infections with which they can be contaminated and can easily be transmitted to other people, if the appropriate precautions are not taken.

2nd. That it is a fact that the agencies that receive this sort of items without taking any precaution and store them unpacked until they become their redemption or sale.

3rd. That there is manifest good in adopting hygienic measures to prevent the possible danger, especially now that there is need to fight energetically. 367

As health officials continued to view the outbreak as a typhus epidemic rather than an influenza epidemic, the Inspección de Higiene y Salubridad Municipal ordered clothes received by pawn shops to be disinfected in a prescribed manner before being packed and stored. Failure to comply would result in a 20 peso fine. 368 This disrupted commerce and created resentment amongst working class people who were the main users of this service. Pawn shops in Chile, particularly at this time, were important quasi-financial institutions because they helped maintain the liquidity of family budgets in between paychecks. As month-end approached, families sometimes ran out of money and had to collateralize whatever assets they could find around the house in order to borrow money to bridge the gap to their next paycheck.

Commerce in rural Chile was also impacted by the Spanish flu outbreak. Interruptions in train service disrupted the shipment of wheat and other agricultural products. 369 In this case, however, the interruption was not related to government policy, but rather to the number of sick.

368 Ibid.
The shortage of train conductors, rail workers and loaders paralyzed train service preventing landowners from shipping their product causing spoilage and backed up inventory.

7.4. Schools

The education system was hit hard by the pandemic. Countless numbers of teachers had to request administrative sick leave, known as licencia, during the months of October to December 1918, often for as long as 15 days. Eduardo Astete, a teacher’s aide in Escuela Elemental No. 29 de Hombres in Concepción, was sick for one month with acute bronchitis. Sara Cinfuentes, an inspector and professor at the National Conservatory of Music in Santiago, was diagnosed with influenza and given licencia for 15 days in early November 1918. Ricardo Espina, an assistant who had just been hired at the National Library, would have a short tenure. The day after his first day he was diagnosed with influenza and given 15 days licencia—he died a few days later. Mr. Disiderio Lambbrecht was named his replacement.

Manuel Palma, the Prefect of the Escuela Superior de Hombres No. 6 in Santiago, was given 15 days licencia after being diagnosed by Dr. Nicolás Fuenzalida with influenza on October 22, 1918. Dr. Fuenzalida also diagnosed and gave licencia to Luz Berta Molina, a teaching assistant, and Emilia Jara, headmaster, both of Escuela No. 12 in Santiago. During the outbreak, the Servicio Médico Escolar was busy diagnosing, treating and handing out licencias to education professionals throughout Santiago. Dr. Eloisa Díaz was a doctor with the

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370 Santiago, 7 November 1918, ARNAD MININTRU, vol. 3747, no. 4401-4450; Santiago, 8 November 1918, ARNAD MININTRU, vol. 3747, no. 4417.

371 Santiago, 9 November 1918, ARNAD MININTRU vol. 3747, no. 4418.

372 Santiago, 22 October 1918, ARNAD MININTRU vol. 3747, no. 4418.

373 Santiago, 21 October 1918, ARNAD MININTRU vol. 3747, no. 4418.
Servicio Médico Escolar. She diagnosed and gave licencia to a number of teaching staff including Ema Vasquez, a teaching assistant at Escuela Superior No. 45, Benjamín Vicuña Mackenna diagnosed with “gastrointestinal” influenza on November 14, and Ana Jofré, a teaching assistant at Escuela Elemental No. 233 and Carlos Spech, a teaching assistant at Escuela Superior de Hombres No. 11. On November 15, 1918, the Inspector for Primary Education ordered a 15 day closure of the Escuela Normal de Hombres J. Abelardo Núñez and schools 6,16, 19, 28, 33, 46, 74, 82, 124, 199, 211. Throughout the pandemic, schools were routinely subject to temporary closure for sanitization. Whether one subscribed to the typhus, Spanish influenza, or concurrent epidemic theory, it was believed that cleaning buildings and streets would stop the spread of infectious disease. This conviction was rooted in the miasmatic tradition, which held that disease was spread from foul odors and filth. Despite the acceptance of bacteriology, faith in the miasmatic tradition persisted. In January 1919, the Ministry of Public Education authorized the Inspector for Primary Education to disinfect all establishments within his control. These disruptions continued through March 1919 as children returned to classes from summer holiday. On March 7, 1919, the Ministry ordered the closure of schools in Santiago. During the August-

374 Santiago, 14 November 1918, A.RNAD MININTRU vol. 3751, no. 4601-4650.
376 Marcos Cueto makes a similar observation in his study of disease in early twentieth-century Lima: “Bacteriology, a field of study the 1880s onwards, and was taught in the University of San Marcos from 1895, eroded but did not end the miasmatic theories that ascribed the origin of infectious diseases to decomposing organic matter that entered the skin or the bloodstream.” Marcos Cueto, The Return of Epidemics, 11.
September 1919 wave, so many people became ill that too many schools closed to officially record. In Rancagua all schools were forced to close in mid-August.\textsuperscript{379}

Schools were closed not just to control the spread of illness amongst children but to make school buildings available as temporary quarantine locations. Believing that the severe forms of influenza were typhus, doctors argued that peasants—who travelled from the periphery of Santiago to the city weekly and stayed in temporary lodgings—had to be completely removed from their dwellings for several days so that they and their dwellings could be sanitized effectively.\textsuperscript{380}

7.5. Prisons

On October 2, 1918 the Mayor of Santiago was informed of several cases of “typhus” that had occurred in the Santiago Penitentiary. Officials had reported a few cases, but there were concerns that the situation could turn into a full outbreak within the prison. The sick included prisoner Pedro Vargas Undurraga, who had been relocated from the prison to a quarantined area of Saint Vincent Hospital. Two other prisoners, Manuel Gutiérrez Gaete and Guillermo Betholet, arrived at the jail sick with “typhus.”\textsuperscript{381} By October 25, influenza was ravaging Santiago prisons.\textsuperscript{382} By early November the situation had spiraled out of control. By November 20 there were over 100 cases of influenza in the Santiago Penitentiary.\textsuperscript{383}

\textsuperscript{379} “Rancagua, clausura escolar,” \textit{MERC}, 18 August 1919.

\textsuperscript{380} Meeting Minutes of the Medical Association of Santiago on 3 October 1919 per Dr. Prado T, \textit{RMCh} 47 (1919): 133.

\textsuperscript{381} “La sanidad de la Cárcel Pública: Reos enfermos de tifus,” \textit{NAC}, 4 October 1918, p. 12.


A similar situation had unfolded in Valparaíso where, on October 7, 1918, the first case of “typhus” was reported. The prison warden brought the situation to the attention of the Minister of Justice, asking for 1,200 pesos in funding for emergency spending on disinfection.\textsuperscript{384} The same paper, reported an outbreak of influenza on October 23, 1918:

The influenza epidemic continues to propagate in an alarming manner. Yesterday there were new cases in different boroughs of the city [Valparaíso]. They isolated one hundred and ten people sick with this illness in various hospitals and the mortality rate is five per cent. The local authorities and the medical associations work together to stop the spread of the epidemic.\textsuperscript{385}

The public jail of Santiago was four times over capacity at the time of the outbreak: “The inmates that are in solitary confinement have to be housed three to a cell where repugnant and undignified vices form.”\textsuperscript{386} The Mayor of Santiago and the Director of Public Works, Guillermo Illanes, accompanied by other public officials, toured the Santiago Penitentiary on November 12 to get a better sense of conditions there. They observed crowded and deplorable living conditions which they believed were a focal point for infection and a public health threat. They urged the President to authorize the relocation of inmates to ease overcrowding. As with criticism of sanitary conditions in La Vega, it is possible that deplorable conditions cited by the Mayor and his colleagues were exaggerated. The Jail’s medical doctor, Máximo Latorre, sent an administrative note to the Minister of Justice. In that note, Dr. Latorre expressed bewilderment at the Mayor’s accusations and insisted that the prison was kept in a proper state of hygiene and cleanliness with rigorous janitorial attention. He rejected the Mayor’s assertion that the prison was a focal point for infection.


\textsuperscript{385} “La Influenza,” \textit{CHIL}, 23 October 1918, p. 1.

During the crisis some officials who had responsibility for reporting typhus cases to public health officials may not have understood what to look for. A common error was believing that head lice caused typhus. As discussed previously, the vector for epidemic typhus is the human body louse which is a biologically different species from the head louse. The head louse is common amongst rich and poor and, despite stereotypes, is not caused by lack of hygiene. The body louse on the other hand is the result of widespread lack of hygiene and more specifically the complete absence of bathing and clothes or linen washing.

Many of the first cases of Spanish influenza around the world were in jails. A note in the Archives of the Health Services of the French Army, by Dr. Pic, that says that the pandemic “began in February, in the USA, in the Sing-Sing Prison, in New York.”³⁸⁷ The first cases of Spanish influenza in Boston were in Charles Street Jail.³⁸⁸ Also in the United States, some of the first cases of Spanish influenza were reported in San Quentin prison in California. The first outbreak of Spanish flu in San Quentin occurred on April 13, 1918.

A prisoner who had come from the county jail in Los Angeles, where, he stated, a number of other inmates had been ill. The man himself had been sick before he came here, having had pains over his body accompanied by fever. On his entrance to this prison he mingled with the 1,900 men who were congregated in the yard on Sunday, April 14, ate in the general mess with them, and at night was locked in the receiving room with about 20 other newcomers. His illness returned the following day, or at least was aggravated, for he was admitted to the hospital with temperatures of 101, chills, and an aching sensation in the back and bones. From this time on until May 26 there was an epidemic of unusual severity, with 101 patients admitted to the hospital, of whom 7 developed branco-pneumonia and 3 died.³⁸⁹

³⁸⁸ “The Epidemic of Influenza,” The Boston Medical and Surgical Journal 179 (26 September 1918): 432.
In May, *El Sol* in Spain reported “Undoubtedly, there is little difference between the disease observed in the prisons by our reporters and that which has been affecting Madrid for the last few days.”\(^390\) In Dublin, Ireland, Mountjoy Prison was reported to have had some of the most severe cases of influenza in early 1919. Caitriona Foley writes:

> The epidemic caused anxiety among the inmates, pervading the atmosphere of the prison and leaving the men somewhat subdued—when they were refused permission to exercise near the hospital, their response was unusually compliant, which the Governor put down to their ‘fear of influenza.’\(^391\)

One account of a Belfast prison in December 1918 illustrates how bad the situation was: “the prison chaplain asked that the cell doors be left open so that the prisoners could help each other.”\(^392\) Influenza is known to spread in densely populated or confined areas. A similar observation was made by Dr. S. del Campo with respect to nitrate miners during the Russian flu (1889-90) in Iquique, Chile.\(^393\)

### 7.6. Armed Services

For the Chilean Army and Navy, Spanish influenza was more of a disruption than anything else, particularly for the Navy. Many soldiers and seamen fell ill, but relatively few died. It is a curious situation since throughout the world—particularly in North America and Europe—servicemen were among the most severely affected, suffering high mortality rates. Why did Chilean servicemen buck this trend? The difference might be explained by the circumstances surrounding Chilean servicemen and their European and North American counterparts. By 1918,


\(^{391}\) Foley, *The Last Irish Plague*, 38.

\(^{392}\) Ibid., 142.

the latter were returning from months or years of cruel battle. They were crowded into ships, trains and camps, coughing and breathing contagion on one another. Under slept, physically drained, malnourished, and generally unhealthy, North American and European servicemen were vulnerable when Spanish influenza struck. In contrast, Chilean servicemen were not actively engaged in a state of war. They were relatively well fed, and rested. Apart from the normal rigors of military life, Chilean servicemen were not under the same physical and mental stress as their European and North American counterparts when Spanish influenza broke out. When they got sick they received the medical care they needed. Thus, being a serviceman alone was not a determinative factor of higher mortality during the Spanish influenza pandemic; rather, it was the underlying health and well being of the servicemen heading into the pandemic that seemed to matter.

It is possible that Major Humberto Banderas Le Brun may have been the armed forces’ first victim of Spanish influenza or of a complication related to the disease (see Figure 34 below), although this has never been officially acknowledged. In his late 30s or early 40s, Major Banderas Le Brun was serving as a military attaché in France when he died from a sudden and “violent bronco-pneumonia” on October 1, 1918. Major Banderas Le Brun had been named military attaché in France in February 1917 after a series of promotions in a remarkable 22 year career.

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By October 18, 1918, the Army’s Second Division had reported an increase in the number of sick soldiers and announced measures to deal with the spread of disease. On October 21, certain battalions had reported an alarming number of fatalities attributable to influenza. The Batallón de Exploración in Puente Alto, Santiago, reported approximately 40 deaths. Military authorities ordered the immediate quarantining of sick soldiers. On November 8, 1918, the Escuela Militar (Military Academy) suspended classes after 48 cadets and 23 soldiers and professors fell ill. During the August-September 1919 wave, soldiers were again falling ill with influenza. The Batallón de Exploración in Puente Alto was again impacted. This time, however, the battalion was said to have suffered from a case of typhus with the affected

395 “La epidemia y las unidades militares,” MERC, 18 October 1918, p. 17.
396 “La Influenza en el Ejercito,” UN, 21 October 1918, p. 4.
conscript removed from the battalion and sent to a Santiago hospital.\textsuperscript{398} Soldiers were given some comfort with a directive from the top brass that sick soldiers should be permitted to sleep-in until 7 am.\textsuperscript{399}

Tables 5 and 6, below, illustrate how widespread Spanish influenza was in the military. The number of sick was disruptive to the military especially when one considers that essential functions such as “Ferrocarrileros” (soldiers assigned to rail service) and “Batallón Telégrafos” (soldiers assigned to telegraph services) were hardest hit. This mirrors the civilian experience, where the number of ill from Spanish influenza was high amongst telegraph and rail employees. Garrisons in the south of Chile were also noticeably impacted, which is consistent with statistical figures from the Oficina Central de Estadística that show that southern Chile, on a per capita basis (per 1,000), was far more affected by Spanish influenza than any other region of the country (see Table 3 above).

The number of sick garrisons in northern Chile, near the Peruvian and Bolivian borders, would have alarmed the military. Hostility still simmered amongst the once bellicose countries. Bolivia, which had been left landlocked after it was defeated in the War of the Pacific, was demanding access to the sea. Peru was demanding that Chile hold a long overdue plebiscite to determine who should own the northern provinces of Arica and Tacna that were ceded from Peru as indemnification following the War of the Pacific. The possibility of hostilities resuming in northern Chile was ever present.

\textsuperscript{398} “Enfermos del tifus,” \textit{MERC}, 1 September 1919, p. 11.

Table 4: Chilean Army - Number of Sick, Spanish Influenza Outbreak (Week of November 13, 1918).

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**TOTAL** 1,339


Table 5: Chilean Army - Number of Sick, Spanish Influenza Outbreak (Week of November 29, 1918).

<table>
<thead>
<tr>
<th>Detachment</th>
<th>Sick</th>
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</tr>
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<tbody>
<tr>
<td>Buin</td>
<td>-</td>
<td>Escuela de Aviación</td>
<td>-</td>
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<td>Guarnición de Chillán</td>
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<td>Compañía de Aviación</td>
<td>-</td>
<td>Guarnición de Concepción</td>
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<td>Guarnición de Curicó</td>
<td>-</td>
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<td>Guarnición de Temuco</td>
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<td>Guarnición de Membrillo</td>
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<tr>
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<td>Zapatadores número 2</td>
<td>-</td>
<td>Guarnición de Los Angeles</td>
<td>137</td>
<td>Guarnición de Puerto Montt</td>
<td>5</td>
</tr>
<tr>
<td>Batallón de Trén</td>
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<td>Guarnición de El Bosque</td>
<td>9</td>
<td>Guarnición de Traiguén</td>
<td>26</td>
<td>Guarnición de Lautaro</td>
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<tr>
<td>Grupo Escala</td>
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<td>Guarnición de Puente Alto</td>
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<td>Guarnición de Angol</td>
<td>169</td>
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<td>Batallón Telégrafos</td>
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<td>Guarnición de Valparaíso</td>
<td>18</td>
<td>Guarnición de Osororno</td>
<td>5</td>
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<tr>
<td></td>
<td>1</td>
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<td>Guarnición de Iquique</td>
<td>13</td>
<td>Guarnición de San Fernando</td>
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</table>

**TOTAL** 700

The Navy was also impacted by Spanish influenza, although the number of fatalities was lower than in the Army. Nevertheless, the sheer number of sick caused disruptions, as was noted in the Navy’s annual report for 1918:

In the month of October there was an influenza epidemic that spread in the Academy with great intensity, which obliged us to close it for a week for disinfection purposes. Fortunately all the sick recovered and there were no fatalities. ⁴⁰⁰

The Navy rationed and stockpiled emergency supplies over concern that it would run out. ⁴⁰¹ The government supplemented these efforts with an extra 12,000 pesos in funding earmarked for infection control. ⁴⁰² In early December 1918, the Government called into active military service the 1917-18 contingent for 90 days for the I, II, III and IV Division. Officers from the reserve belonging to those Divisions were also called into active military service. ⁴⁰³ This mobilization of additional forces may have contributed to the further spread of influenza.

The August-September 1919 wave struck the armed forces hard. In late July, Artillery Company No. 4 in Lautaro, southern Chile, reported 114 servicemen sick all at once. ⁴⁰⁴ Police barracks were equally devastated. In mid-August, 1919, the Llanquihue Regiment in the southern city of Puerto Montt reported the deaths of five conscripts and more than 200 sick in only two days. ⁴⁰⁵ The Tucapel Regiment in Temuco reported more than 300 sick soldiers. ⁴⁰⁶

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⁴⁰¹ Ibid., 30.
⁴⁰² "La “Grippe” Continúa el avance de la epidemia,” UN, 3 August 1919, p. 7.
⁴⁰⁵ “La grippe,” MERC, 13 August 1919.
⁴⁰⁶ “Temuco,” MERC, 18 August 1919.
7.7. Children

Little is known about the impact that Spanish influenza had on children in Chile. References to children being sick with Spanish influenza or being admitted to hospital for the illness were rare. On November 11, 1918, six children arrived with influenza and one with “typhus” at the Roberto del Rio children’s hospital. On November 12, three more arrived with influenza and three with “typhus.” While newspaper, magazines and government archives make little mention of the pandemic’s impact on children, one strongly suspects that it did have a major impact.

Census bureau statistics for 1919 show large spikes in mortality, as compared to the previous year, for children less than 1 (+19.58%) and those between the ages of 1 to 5 (+36.62%). Although influenza related deaths amongst children in these two categories was low, the sharp spike in deaths may well be attributed to starvation, dehydration, neglect or abandon that may have occurred as a result of parents being too sick to care for and feed their children. During influenza pandemics, children under the age of five years were, and continue to be, considered at high risk.

7.8. Disease Management

In the early days of the October 1918 wave, the Medical Associations of Santiago and Valparaíso reached out to the public, providing general disease prevention tips. The Medical Association of Valparaíso tended to offer tips that were more concrete and practical than those

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407 Responding to the problem of high infant mortality, the government created to pediatric hospitals: Roberto del Rio hospital (1913) and Manual Arriarán Hospital (1922).

offered by the Medical Association of Santiago. The former addressed hand hygiene and public gatherings, while the latter published the following advice:

1. Water and vegetables are unaffected, at least from this disease
2. Closure of the focal point of infection that was determined to be the conventillo on Santa Filomena street
3. Cases must be reported and quarantine of the sick must be strictly observed, especially in hospitals
4. Public gatherings of adults should be avoided
5. Avoid water overflow and clean ditches of mud
6. Disinfect conventillos and extra cleaning of the city especially the Recoleta borough.409

Pursuant to its powers, the DGS established and deployed Brigadas Sanitarias (“Public Health Brigades”) to Santiago, Valparaiso, Rengo, Temuco, Osorno and Puerto Montt.410 Travel to the Chilean island of Chiloe from Puerto Montt was monitored and controlled to prevent the disease from spreading to the Chilean archipelago;411 this effort was misguided since influenza had already been present in archipelago for some time possibly even before outbreaks in Santiago. The British vice-consul in Punta Arenas had reported influenza outbreaks in mid-September.

From the onset of the epidemic public access to cemeteries, especially by children, was limited. Cemeteries were viewed as a high risk area for infection. In Santiago, general public access to the National Cemetery was prohibited.412 In Valparaiso, La Administración del Cementerio No. 3 (Playa Ancha) announced that because of “well-founded health and hygiene reasons” it would not permit entry to children younger than four years old. The Administrators also prohibited entry of “small sealed packages” which presumably were being used to shuttle

409 Ibid.
410 A more detailed discussion on the Brigadas Sanitarias can be found in Chapter 8.
412 “Cementerios,” CHIL, 1 November 1918, p. 1.
children past the gates to circumvent this rule.413 Mortuary, cemeteries and burial services were overwhelmed during the outbreak in late 1918. The number of burial permits issued rose sharply. On November 10 and 13, 1918, for example, Santiago’s fourteen districts reported 477 deaths with over 120 in one day alone.

As the August-September 1919 wave peaked, burying the dead again became a logistical nightmare. Cemeteries and ancillary services were simply overwhelmed. Dr. Franco, of Tomé, explains that in his town, during the August-September 1919 wave, peasants would transport the bodies of their deceased loved ones with nothing more than a sheet over the body. Because of the shortage of cemetery workers, cadaver transportation teams, and mortuary services, sometimes the body would remain unburied in the open for five or more days. There was also a social dimension to the problem of burying the dead. El Mercurio paints a ghastly portrait of what it called “sorrowful caravans” of working-class and poor people who invaded the city with their wild and licentious ways to bury their dead, all the while ferrying their dead in public transportation and spreading disease.414 “These caravans of sorrow” wrote El Mercurio, “became wild over time as loved ones and grave diggers [transporting the cadavers] drowned their sorrows in drink in local taverns along the way [to the cemeteries].”415

7.8.1. Disinfection

Disinfection efforts focused on cleaning and sanitizing buildings, streets, and public places. During the October-December 1918 wave, government funds were earmarked for paving

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413 “En el Cementerio de Playa Ancha,” UN, 26 October 1918, p. 3.

414 “Sanidad, hospitales, alarmas,” MERC, 2 August 1919, p. 3.

415 Ibid.
and the construction of commercial grade ovens for burning up to 100 tons of garbage and waste to help prevent the spread of disease.\footnote{“Pavimentación y horno crematorios – En las grandes ciudades Norteamericanas – Informe presentado a la Alcaldía,” \textit{MERC}, 14 March 1919, p. 11.} While beneficial in promoting a higher quality of life and suppressing the spread of other infectious diseases such as cholera or plague, these measures were of little benefit in combating influenza. They may have even distracted public health officials from pursuing more effective measures. During the August-September 1919 wave, despite many sick and dead, public health officials in La Serena were obsessed with plumbing and sewage projects to bring more potable water to the city in order to properly clean streets which they saw as an effective means of controlling the spread of influenza.\footnote{“La Serena,” \textit{MERC}, 12 August 1919.} They reflected the lingering miasmatic ideology amongst politicians and public health officials that equated disease with dirt and foul odor. These misconceptions, rooted in the pre-bacteriological era of public health philosophy, were not unique to Chile. Officials in other countries reverted to miasmatic principles too. It was likely a reflection of the dissatisfaction in bacteriology’s explanation of the influenza pandemic. Unaware of the existence of viruses much less of their distinction from bacteria, officials were desperate for answers.

Despite what one believed the disease to have been—typhus or influenza—most people associated personal and public hygiene with illness and believed that aggressive disinfection campaigns could fix the problem. By the end of 1920, the DGS had ordered the disinfection of 118,000 pieces of clothing, 50,000 people and 12,000 homes during 23,000 visits in Santiago alone.\footnote{Meeting Minutes of the Medical Association of Santiago on 4 November 1921, \textit{RMCh} 49 (1921): 65.}
Major Santiago arteries such as Mapocho, Andes, Matucana, Patricio Lynch, Juan Miranda, Torreblanca, Francisco Lobos and Lourdes were cleaned diligently. Streets in other districts were also cleaned regularly, as directed by the Inspección de Higiene. Disinfection efforts also focused on trams. It became apparent to local authorities, early in the epidemic, that trams facilitated the spread of disease. In Valparaíso, the manager of the Empresa de Tracción was asked to ensure that the trams—coach as well as first class seating—were routinely cleaned with the guidance of the Inspección de Higiene. The company was also urged to install sinks with soap and water in ticket booths to facilitate the obligatory hand washing of the ticket takers as the start of each trip. Ticket takers would also be required to immerse their hands in disinfectant solution. Upon returning from each trip, it was also recommended that the trams be mopped.

The spike in disinfection activity between October to December 1918 was due to the epidemic outbreak. On October 31, 27 requests for disinfection service were made in Valparaíso. Keeping up with the requests seemed futile. Dr. Murúa Pérez explained that he did not have sufficient personnel to operate the disinfection equipment to keep up with the daily requests. Under his management he had a mechanic, two technicians and a driver to operate one of seven disinfection machines held by his office. Dr. Pérez pleaded for more personnel during the epidemic.

Throughout 1918 disinfection services in Santiago had been provided in response to 15 different categories of diseases such as smallpox, whooping cough, scarlet fever and even cancer.


421 “La gripe y el desinfectorio público,” UN, 1 November 1918), p. 7.

422 Ibid.
In total 3,485 disinfections for 361,814 articles of clothing had been conducted. From October to December 1918, disinfection services for all categories of disease had been suspended so that disinfection services could focus on the epidemic.\(^{423}\)

The disinfection probably had a marginal impact on the control of contagion and, by today’s standards, certainly would not be considered an effective or an efficient means of disease control; however, at the time, this service was one of the principal tools in the battle against influenza in Chile as well as in Europe and North America.

7.8.2. Public Gatherings

Despite official and unofficial warnings, assemblies and public gatherings continued throughout the pandemic. In some cases the gatherings were enormous, dense and even officially sanctioned. When events were cancelled, such as a soccer game between staff teams of the newspapers \textit{Valparaiso Gráfico} and \textit{El Mercurio}, it was only because too many people were absent.\(^{424}\) Despite the closure of schools, theaters and other places of assembly, large public gatherings still took place, although many of the gathering places were subject to routine disinfection procedures.\(^{425}\) Citizens and officials alike disregarded public health warnings against large gatherings. Contrary to the reaction of the citizens of Rio de Janeiro in October 1918, Chileans did not succumb to widespread panic at the outbreak of the pandemic.

In late October as the epidemic was unfolding in earnest, people were celebrating the \textit{Fiesta de la Primavera} (Celebration of Springtime) throughout Chile (see Figure 35 below). The

\(^{423}\) Carlos Altamirano S. to Dr. Ricardo Dávila Boza, Director, Institutó de Higiene, Santiago, 1 February 1919, \textit{RChH} 25 (1919): 53.


*Fiesta de la Primavera* was an annual event, held in October, to celebrate the arrival of Spring in the southern hemisphere. During these celebrations, adults and children would dress up in costume and hold community and sports events throughout the city. Charitable events, mainly for underprivileged children, were also held with great fanfare. In celebration of spring, a parade, followed by a party and dance in the municipal park, was held in Santiago: through Parque del Litre, down Merced turning on Pedro Montt Avenue to Victory Plaza and from there down Condell, Esmeralda and Cochrane Streets until arriving at Sotomayor Plaza. The event was even celebrated in some local penitentiaries.\(^{426}\)

**Figure 35: Spring Festival, (Valparaíso, October 25, 1918).**

![Spring Festival](image)

*Source: “Parque Municipal de Valparaíso,”* ZZ 14, no. 716 (9 November 1918).

\(^{426}\) “Ecos de la fiesta a los reos de la carcel,” *UN*, 26 October 1918, p. 3.
In November 13, 1918, major celebrations erupted all over the country with news of the armistice agreement in Europe which ended World War One (see Figure 36 above). In Lima, Peru, Armistice celebrations, in which thousands gathered, triggered an explosion of the disease in that city.\footnote{Ministry of Health, \textit{Report on the pandemic influenza}, 335.}

Source: “La enorme concurrencia pasando por la calle Morande,” \textit{SUC} 16, no. 843 (21 November 1918).
On January 9, 1919, 200 young people affiliated with Radical Party gathered in the terrace of Cerro Santa Lucía to honor Congressman Antonio Pinto Durán of Antofagasta. The catastrophic August-September 1919 wave would occur as Chileans celebrated Independence festivities that are usually celebrated over a one month period and culminating on September 18 and 19. During this season it would have been common for Chileans to set up Fondas in parks and fields where typical national dishes would be served along with chicha and folklore shows, music and dancing. Cities and towns would be draped with Chilean flags and red, white and blue everywhere and children would be seen flying kites. On September 19, citizens of Santiago would gather to honor the Army for the annual parade.

Did Chileans dismiss the risk or were they determined to live their lives as normally as possible? The presence of humor amidst fear, illness, and death suggests the latter. El Burro, a Chilean periodical catering to the working class, wrote “Always read this wonderful “Burrito” if you don’t want to get the flu.”

7.8.3. Quarantine

Quarantine and isolation were employed ineffectively and late in the epidemic. Drawing from the experience of the 1887 cholera epidemic, the Government responded by setting up Lazaretos (quarantine and isolation centers), particularly at border crossings. All suspected cases of illness were quarantined in the Lazaretos until persons were properly disinfected and deemed to be non-infectious. The establishment of Lazaretos was a sensitive political topic for a

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428 “Manifestación Pinto Durán,” MERC, 10 January 1919, p. 18.

variety of reasons. Provincial and municipal officials frequently complained about lack of funding and that there were not sufficient *Lazarettos* to handle the influx.

Isolation was the main strategy in hospitals, along with disinfection of clothes and people. A considerable amount of effort went into ensuring that patients admitted and suspected of being sick with epidemic typhus were not mixed with regular patients. Patients admitted to hospitals were bathed in warm baths and their clothes disinfected in an isolation room before being allowed to enter the hospital.430

The strategy of striving to treat all influenza patients in hospitals relied heavily on the availability of hospital beds, staff, food, medication and disinfectants. As in other parts of the world, this strategy would fail because hospitals—already underfunded—lacked the surge capacity to deal with so many patients in such a short period of time. No amount of government support could fix such a problem, even though politicians made it seem that the problem was funding. They either did not know any better or used the shortages as an opportunity to secure funding for their regions. The latter is more likely the case. The Medical Association of Santiago and the DGS insisted, throughout the crisis, that the best way to confront this medical emergency was to treat as many people as possible in hospitals. It is possible that they also believed that funding was the cure but, as a nascent institution, the DGS had its own political agenda and motives for wanting more funding.

The Spanish influenza epidemic in Chile coincided with the nascent institutionalization of government-controlled public health that relied heavily on the expertise and advice of the medical community in Santiago. The Medical Association of Santiago and its members became more assertive and vigilant with their new-found authority. The crisis justified budgets and

spending on the maintenance and expansion of public health spending.\textsuperscript{431} Even before the pandemic, the role of public health in Chile was being intensely debated, nationally and internationally. The debates engaged both the ideological and the practical. From an ideological point of view, physicians and politicians debated, implicitly and explicitly, the role of the State in public health. At the time Chile was an active participant in the Pan American Conference on public hygiene and even hosted the conference in 1911. It was in this forum that Chilean physicians tried to put pressure on the Chilean government. They did this by highlighting the accomplishments of American and European public health initiatives, while contrasting those with Chile’s public health shortcomings. Pushing for greater funding, Dr. Alejandro del Rio said, in a speech at the University of Chile:

We come now to the capital question, the financial one. The State and municipality should seriously consider the vital necessity of improving the sanitary conditions of the country on the one hand, and on the other, the ways and means of securing this result and complying honorably with what Disraeli defines as “the first duty of a statesman” in referring to the care of the public health… Our country has a vital need; we have the right not only to live, but to live in health.\textsuperscript{432}

The idea of public health as a right was divisive and the position that one took on this point reflected one’s view on public sector financing. Those who saw public health as a right advocated increased government spending, those who did not believed in limited government and reliance on charities and fraternal societies.

Quarantine and isolation measures can be effective strategies for responding to certain infectious diseases that have not yet spread; however, they are generally regarded as ineffective strategies for dealing with full blown influenza pandemics. In early November 1918, aware that

\textsuperscript{431} “Peticiones del Personal de la Policía de Aseo,” \textit{MERC}, 14 March 1919, p. 12.

\textsuperscript{432} Alejandro del Rio, “The Sanitary Problem. Address Delivered at the University of Chile, July 28, 1923, by Dr. Alejandro Del Rio,” \textit{Public Health Reports} 39, no. 23 (6 June 1924): 1373.
the epidemic had likely spread from Argentina, where it had started weeks earlier and drawing from their experience with the 1887 cholera epidemic, politicians contemplated imposing tighter border controls at land crossings with that country. Congressman Luis Claro Solar (Aconcagua-Liberal) observed:

In reality, communication between our country and Argentina, and the corresponding commercial trade, tends to facilitate the propagation of illness that come from our neighboring republic…In light of these special circumstances, it would be a good idea to establish in [the city of] The Andes a public health station, which could limit the introduction of infectious diseases in the country, by way of border monitoring and other similar measures.\(^\text{433}\)

Fearing a situation similar to that of the cholera outbreak in 1887 which devastated the frontier province of Aconcagua, Senator Claro Solar suggested setting up a “Casa de Sanidad” or “Estación Sanitaria” at the border to quarantine sick individuals arriving from Argentina. He proposed an appropriation of 60,000 pesos to that end and recommended that the quarantine facility be converted into a permanent facility following the epidemic. Such measures, complained Senator Claro Solar, were actually contemplated in the Sanitary Code that had just passed into law. In his view, the challenge in implementing his proposal was not its legal basis but budgetary.

A disinfection station did in fact exist at the border, however, Senator Claro Solar mocked that it was all in name:

There is over there a house with a large sign with the words Disinfection, but inside there is absolutely nothing, no stove or any other type of apparatus. In the meantime, they pay the salaries of employees of that service, but the Disinfection has offers no utility whatsoever.\(^\text{434}\)

\(^{433}\) Chilean Congress, House, Extraordinary Session 15 “Recursos para combatir la epidemia” (6 November 1918): 312.

\(^{434}\) Ibid.
Senator Claro Solar was probably not exaggerating. In his research on Chilean smallpox epidemics in the late 19th century, William Sater refers to various examples of various lazarettos in the provinces outside of Santiago that “were at best temporary edifices, often open to the elements, sometimes staffed only by attendants.”

Senator Claro Solar was not the only one to openly gripe about insufficient government funding for public health. Members of the Consejo Superior de Higiene, who were responsible for advising and enforcing the newly minted Code, complained that, without money, the Code was meaningless. This was an attack not just on the Government’s handling of the influenza epidemic, but also on its attitude towards public health. If Senator Claro Solar was in agreement about inadequate funding, he certainly was not in agreement about the idea of setting up a Sanitation Station. The Consejo had advised the Minister of Interior on the ineffectiveness of such a solution, noting that it had been attempted without success in other more developed countries.

The epidemic returned to Chile in July 1919. The southern cities of Talca and Constitución reported new and rapidly spreading cases of Spanish influenza. In the case of Constitución, it was reported that 30% to 40% of its residents had fallen ill. Fernando Liborio Lazcano’s (Curicó-Liberal) reported an all-too-familiar situation where the sick had travelled far from rural areas to arrive at the hospital in Curicó only to be turned away, but not have the strength to return home.

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7.9. Treatment, Remedies and Prophylaxis

As was the case in the rest of the world, there is little that Chileans could have done to treat Spanish influenza. At the time, the underlying laboratory cause of the illness was not known (the influenza virus was not observed until 1931) and antibiotics for treating complications such as bacterial pneumonia were not available either (penicillin was not discovered until 1944). Still, there was no shortage of advice on how to treat Spanish influenza. Some of the advice was well-intentioned and based on the best medical knowledge available at the time, while other treatment plans were just plain quackery, too often motivated by the unscrupulous profiteering of drug manufactures. Some treatment advice was useless, other recommendations helped to relieve symptoms such as the use of antitussive and pain medication (including the use of compounds still used today), while other treatment plans involved compounds that would have exposed survivors to other risks such as cancer and dependency.

This experience was not unique to Chile. Around the world doctors struggled to come up with cures and pain relief for the mystery illness. Some treatment plans were nothing more than blind experimentation, and so long as the results were not a complete failure, the treatment plan might be heralded as a success. In the United States, one physician gave 25 patients intravenous injections of hydrogen peroxide. While twelve died, thirteen managed to recover, leading the physician to declare success.437

La Unión reported that the best prophylaxis was good hygiene:

Avoid colds, have the skin perfectly clean to facilitate the elimination of toxins and blood circulation, stay away from compromised foods, to keep one’s home clean; in summary, to adopt all the basic principles that serve to promote health, regardless of whether or not there are epidemics…438

437 Barry, The Great Influenza, 353.

The most sound treatment advice consistently offered by medical practitioners was plenty of bed rest and liquids. People were also reminded of the value of proper nutrition. Throughout the early 19th century Chile struggled to control inflation; rising prices during the pandemic made nutritious food too expensive to buy:

The retail price of goods is alarming. They don’t sell cookies in packs, but as singles, the most ordinary costing five cents. A newly published scientific magazine from Paris refers to the global danger of poor nutrition and concludes that the great influenza epidemic is the result of avitaminosis; that is, a vitamin deficiency in food. A note on this has been sent to the Minister of Interior to bring the risk to his attention; nations are again threatened by the terrible influenza epidemic.439

Doctors recommended mild laxatives and purgatives including sodium sulfate, milk of magnesia, citrus magnesia, Carlsbad salt, antifebriles such as aspirin with caffeine, sulfate of quinine with Phenacetin, fenalgin, and cryogenine.440 Quinine was a known remedy for malaria, but its efficacy in treating influenza patients was a shot in the dark.441 A shortage of quinine in Brazil caused panic when the epidemic began there.442 Patients were instructed to drink plenty of liquids, especially teas, borage water, tilo water, flores pectorales, hot lemonade and Vichy water. Patients suffering from more complicated respiratory infections were told to use expectorant potions such as polygala, sodium benzoate, ammonium acetate liqueur, or ammonium anise liqueur. Incessant coughing was to be treated with codeine or dionine.

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439 Meeting Minutes of the Medical Association of Santiago on 31 October 1919 per Dr. Ferrer, RMCh 47 (1919): 332-33.

440 Later in the century it was discovered that Phenacetin, a compound that had been used commonly throughout the world certain painkillers (e.g. A.P.C. asperin-phenactin-caffeine) was carcinogenic and harmful to kidneys.

441 Barry, The Great Influenza, 353.

(ethylmorphine). The latter is still is used in low dosages in some cough medication. During the August-September 1919 wave at least one Chilean physician, Dr. E. Soza of San Borja Hospital in Santiago promoted the used of the “Mulford sero-bacterial influenza mix” named after H.K. Mulford Company in Philadelphia.

Spanish influenza created opportunities for unscrupulous or well-intentioned but dangerously unqualified healers. The public was repeatedly warned about accepting treatment from unlicensed professionals:

As long as it is possible, it makes sense to resort to the professional advice of a doctor and never to be cured by herbalists or charlatans who endanger the lives of the sick. The indigent sick should resort to a walk-in or in severe cases a hospital.

The public health response in Valparaiso seemed more effective than in Santiago. In Santiago it would seem that time was wasted arguing over the cause of the illness and spending incredible human and financial resources for disinfection. By contrast, in Valparaiso, there was a greater emphasis on promoting public awareness of the illness, modes of transmission and basic public health measures. On October 28 1918, Dr. Benjamín Manterola led an information session on influenza and public hygiene at the Commerce Institute on Condell Street for children, parents, and school staff of Valparaiso area grade schools.

La Unión published advice from international experts advising on how to stay healthy during the epidemic. Quoting Dr. Louis Harris, Director of the Office of Disease Prevention in New York, the newspaper reported that people should avoid large gatherings in trams, theaters, public gathering and

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444 “La epidemia de grippe,” MERC, 31 July 1919.


446 “Conferencia Sobre la Influenza o Grippe,” UN, 26 October 1918, p.3.
enclosed spaces. People should work and live in well ventilated places and avoid using plate and glasses in cafes and not use used towels in public places. He also advised people to cover their sneeze or cough with a handkerchief and to get plenty of rest when sickness was even suspected and to stay isolated during illness.447

In late October, the Argentine medical delegation, that had been at the Medical Congress in Rio Janeiro, informed its government, by telegram, of a concoction developed which allegedly prevented the spread of influenza. The potion was composed of 90 grams of cinnamon and 90º alcohol. Mixed together in sugar water, the sick were to drink it every three hours while with high fever and then three times per day after fever had broken.448

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448 Ibid.
Chapter 8: March of the Brigadas Sanitarias

The Brigadas Sanitarias (Public Health Brigades) stood as an indelible symbol of the nascent public health system in Chile. The Brigades began forming immediately after the creation of the Dirección General de Sanidad ("DGS") on January 3, 1919. Many of the Brigadistas (those working in the Brigades) were medical students motivated by a sense of adventure, professional duty, and patriotism. They fanned out across the country to help control outbreaks of infectious diseases. Although mainly focused on the so-called “typhus” epidemic, they were also responsible for mobilizing disease prevention campaigns against other infectious diseases. They were sent to fight outbreaks of yellow fever, smallpox, influenza, tuberculosis, and trachoma, among other infectious diseases.449 As foot soldiers on the frontline, many of these men (and some women) sacrificed their lives in the service of their country and fellow man.450

Armed with legislative power, some funding, and an overzealous Director, the DGS confidently jumped head first into the outbreak crisis. After years of bemoaning government inaction and sounding alarm bells about a looming public health crisis, it was time for the DGS to implement its vision of public health, focussed on community activism. The political background and convictions of the DGS’s first Director, Dr. Ramón Corbalán, guaranteed that the agency's pro-active vision would be executed with resolve.

Born in the northern Chilean city of Copiapó, Atacama Province, in 1863, Dr. Corbalán was active in government for 21 years before his public health posting at the DGS. He was a member of the Radical Party of Chile, a social democratic party, created in the year and city of

449 Ministro del Interior sobre los informes de la comisión designada por el Gobierno para estudia los Servicios Sanitarios (Imprenta Nacional: Santiago, 1922), 10-11.

450 Report from Dr. Vial to Dr. Corbalán. Re: datos de atención y muertos de las diferentes Brigadas, Santiago, December 1920, ARNAD MININT, vol. 5759, annex no. 4.
Corbalán's birth, which was devoted to secularization, administrative decentralization, and limitations to presidential authority.  

Dr. Corbalán was elected to Congress as: Representative for Copiapó in 1894-97, 1897-1900; Representative for Arauco in 1900-1903; Representative for Santiago in 1903-06 and 1906-09; Representative for Illapel in 1909-12; Representative for Ovalle in 1912-15 and 1915-18. He was passionate in his belief that Chilean public health was in a desperate state and in need of radical change. His convictions frequently put him at odds with his peers, government officials, and even members of the military. The subject of Dr. Corbalán’s 1890 medical school thesis was the “Treatment of Syphilis,” a primer to his decades long advocacy for public health issues.

In 1895, Dr. Corbalán co-authored legislation to establish public health inspectors. In 1909, he introduced legislation to create the country’s first public health code. The Public Health Code was finally adopted in 1918, nine years after it was first tabled; this lengthy delay in passing important legislation evidences the ineffectiveness and dysfunction of the Parliamentary Republic, discussed, above, in Chapter 2. As the architect of Chile's first Public Health Code, Dr. Corbalán insisted that he head the government agency it spawned, namely, the DGS.

Dr. Corbalán eagerly accepted the theory that, between 1918-21, both epidemic typhus and Spanish influenza were rampant in the country; although, throughout his tenure Dr. Corbalán's primary focus was on controlling the “typhus” epidemic. Influenza was virtually ignored notwithstanding that the number of sick and dead from the disease outnumbered the

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number of “typhus” cases by 4:1 and that, initially, "typhus" cases were exclusive to Santiago. "Typhus" cases were eventually “discovered” elsewhere in the country.

8.1. Organization and Legal Basis

Under Article 7 of the 1918 Public Health Code, the Director of the DGS was authorized, by the Minister of Interior, to establish Public Health Brigades, anywhere in the country, to lead or assist prophylactic measures against infectious diseases or to assist with mass inoculation campaigns.

Medical personnel visiting people sick with smallpox, scarlet fever, diphtheria, typhoid fever, epidemic typhus, yellow fever, plague, cholera, leprosy, or trachoma, were required to report such illness to the Office of Disinfection or, alternatively, to the Governor of the implicated province within 24 hours of having made the diagnosis or establishing the disease's probable existence. Upon the declaration of an outbreak, the Public Health Code required heads of households and heads of public or private enterprises to report cases, or probable cases, of enumerated infectious diseases; failure to do so was an offence punishable, in first instance, by a fine of 50 to 200 pesos and double that for subsequent offences.452

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452 Article 6, “Reglamento dictado por la Dirección de Sanidad para la Profilaxis del Tifus Exantemático,” RMCh 49 (1919): 327.
Figure 37: Chile - Governmental Organization of Public Health, 1921

Source: Alejandro del Río, “Problema Sanitaria,” Anales de la Universidad de Chile, 2d ser, 1, no. 3 (1923): 35.
In 1918, Chile did not have a ministry or department of public health. Issues of public health were under the supervision of the Ministry of Interior which was also mandated to oversee workplace safety and social assistance. From the public health desk at the Ministry of Interior sprung the Dirección General de Sanidad. The DGS was, itself, sub-divided into eight departments: Pediatric Hygiene, Social Hygiene, Prophylaxis, Urban Hygiene, Rural Hygiene, Food and Drink Inspection, Medical, Pharmacist and Pharmaceutical Supervision, and Sanitary Engineering.

The Department of Prophylaxis oversaw maritime, port and border crossing inspections, infectious disease hospitals, disinfection services, bacteriology laboratories, vaccinations, diagnostics, illnesses of the nervous system, animal prophylaxis and land prophylaxis with specific focus on tuberculosis, venereal diseases, smallpox, and typhus.

In June 1919, the DGS issued a regulation in respect of prophylaxis of “typhus.” Pursuant to Article 59 of the Public Health Code, the Directorate created a Public Health Service that was in charge of combating “typhus” in Santiago. The Brigades reported to Dr. Benjamín Manterola, Head of Public Health Brigades, who, in turn, reported to Dr. Corbalán.453 In Santiago, the Public Health Brigades were organized into four public health zones defined by the streets below:

- Zone I – Urban and suburban borough north of the Mapocho River;
- Zone II – from Las Delicias Avenue (La Alameda) to the Mapocho River, from Plaza Italia to Matucana Avenue and the boroughs of Providencia and Ñuñoa;
- Zone III – south of Las Delicias Avenue (La Alameda) to Zanjón de la Aguada, and from Vicuña Mackenna Avenue to Exposición; and

453 “Reglamento dictado por la Dirección de Sanidad para la profilaxis del tifus exantemático,” *RMCh* 47 (1919): 326.
• Zone IV – between the bridges that encompass Exposición and Matucana, and the boroughs of Yungay and Quinta Normal

It is likely that Santiago's Public Health Brigades had oversight responsibility with respect to the carrying out of Brigade activities in the rest of the country; however, the research sources consulted for this dissertation do not definitively address this issue.

Each zone had a Public Health Inspector: Dr. Luis Montero was Public Health Inspector for Zone I; Dr. Manuel Camilo Vial was the inspector for Zone II as well as the Head of Public Health Service for Santiago; Dr. Rafeal Sierralta was the interim inspector for Zone III; and Dr. Arturo Barraza was the interim inspector for Zone IV. Each Public Health Inspector commanded Public Health Brigades in their zone. According to regulation, the Brigades were composed of one doctor and two medical students. Additional Brigades were established, as needed,\(^\text{454}\) and, as discussed above, were likely placed under the supervision of Santiago's Zone I-IV inspectors.

At the height of Chile's Spanish influenza crisis, in September 1919, the DGS sent additional resources across the country. In Santiago, four additional Brigades, composed of medical students, reported to the Public Health Inspector for Zone II. They were supported by eight staff workers who helped with disinfection, transportation, and cleaning houses.\(^\text{455}\)

In Valparaíso, Dr. Pedro A. Macuada was supported by five disinfection employees and two medical students. The team was equipped with stretchers and mobile bathing facilities to treat suspected cases as they moved through the boroughs of Valparaiso. In Llay-Llay, an auxiliary disinfecter was hired by that town’s mayor. As in many towns and cities, municipal disinfectors were not public health or disinfection professionals; rather, they were average people.

\(^{454}\) Ibid.

\(^{455}\) “Servicios extraordinarios de sanidad creados por la Dirección General de Sanidad para combatir las epidemias de tifus exantemático y de grippe, y que están actualmente en funciones,” *RMCh* 47 (1919): 796
hired into service by municipal politicians (often the mayor) who instructed them on who, and what, to disinfect. It was a curious situation to have politicians, with no medical expertise, directing staff, also with no medical training, in the execution of public health disease control measures.

In San Fernando, an auxiliary disinfector was hired and reported to the Public Health Inspector for Zone III. In Nancagua y Placilla a sixth year medical student directed disinfection campaigns aided by a fourth year medical student. In Villa Alegre, Carols Pérez Besoain, a seventh year medical student, was in charge of an auxiliary disinfector. In Quirihue, Cauguenes, and Cobaquecura, Alejandro Vásquez, a sixth year medical student, led disinfection efforts. In Portezuelo and Itata, Antonio Alcaíno, another sixth year medical student, led disinfection efforts with the help of an auxiliary disinfector. In Concepción, the Public Health Inspector for Zone III led disinfection efforts with the help of Pedro Pulgar, a fifth year medical student, and two auxiliary disinfectors.

8.2. Use of Medical Students

8.2.1. “Víctimas del Deber” (Victims of Duty)

The DGS actively recruited medical students throughout the Spanish influenza outbreak. Many medical students served selflessly in the name of their profession and their country; some paid with their lives. These brave heroes of the Republic came to be known as the víctimas del deber (Victims of Duty). Many of these Victims of Duty were healthy, young, adults whose characteristics were consistent with Spanish influenza mortality demographics in other parts of the world.
In late November 1918, at the age of 26, Claudio Manterola Cumplido, a medical student at the University of Chile, in Santiago, fell victim to the outbreak. Manterola was a medical student preparing to complete the final requirement for his medical license. He was working at the downtown Public Assistance Hospital when he was struck down by disease. Dr. Vial recounts:

One night I met up with Claudio in the Hospital. I saw an unusual uneasiness from the look on face and discomfort in his movements…He said: I have fever and feel awful…It’s the “gripe”, murmured someone as his body was struck with chills of a troubling premonition. He excused himself to go home; the next day he could not get up from bed. After a few days of convalescing, he had a dramatic relapse…

Figure 38: Funeral for Claudio Manterola Cumplido, Medical Student, University of Chile, (Santiago, November 1918)

Figure 39: Medical Students in Funeral Procession bringing the Remains of Fellow Medical Student, Claudio Manterola Cumplido, to the National Cemetery (Santiago, November 1918).


Dr. Enrique Salinas Fajardo, who worked alongside Manterola, died in December 1918, at the age of 28, after falling severely ill. He had been working selflessly and tirelessly in the Brigades, serving some of the most vulnerable elements of society. 457 Just shy of his 27th birthday, and freshly minted as a physician, Dr. Guillermo Meyer died on May 7, 1919, of what his colleagues ambiguously referred to as "the "reigning epidemic." 458 Dr. Meyer had worked at Santiago's St. Vincent de Paul Hospital and Casa Orates, a psychiatric care facility.

Dr. Maxmiliano Guzmán, a medical intern at the St. Vincent de Paul Hospital and Public Assistance Hospital No. 2, died of “typhus” in November 1918. Three of his colleagues from the

457 Ibid., 1-2.
458 “Víctima del deber,” RMCh 47, no. 6 (June 1919): 257-58.
same hospital, Dr. Juan Wood, Don Rodrigo Donoso, and Don Félix Daza fell gravely ill, but cheated death.459

Nurse Elena Diaz, only 19 years old, died on November 20, 1918, after working in the “typhus” ward at the Roberto del Rio hospital; her colleague on the ward, Sister Marta de Jesús died two weeks earlier at the age of 41. Sister Maria, 43 years of age, also died of “typhus” on November 20; she worked in the “typhus” ward in the San Borja Hospital as did Sister Esteranía who died of “typhus” on December 5, 1918.460

8.2.2. Motivation

When the Governor of Imperial, in southern Chile, sent an urgent telegram requesting a doctor to assist with the sick, Dr. Corbalán denied the request on the basis that doctors were in short supply and needed for other priorities. Instead, Dr. Corbalán offered to send Don Carlos Haupt J., a medical student, who would be compensated 800 pesos. Dr. Corbalán informed the Governor that Don Carlos would be put “in charge of prophylaxis against Exanthematicus typhus in the locality.”461 In March, Dr. Corbalán sent medical student Don Eulojio Mujica to preside over prophylaxis services in Angol for 500 pesos in remuneration.462 The same day, he sent medical student Don Juan Marín to the third sector in Santiago for 400 pesos.463

459 “Tributo del personal de la Asistencia Pública de Santiago a la epidemia de tifus exantemático,” RMCh 47, no. 7 (July 1919): 682-83.

460 “Victimas del deber,” RBP 2, no. 4 (December 1918): 433-34.

461 Dr. Corbalán, Director, Dirección General de Sanidad to don Manuel Martines, Governor of Imperial. Re: tifus exantemático en el departamento de Imperial, Santiago, 5 January 1920, ARNAD MINIST, vol. 5179, no. 3721.


463 Re: comunica nombramiento, 4 December 1919, ARNAD MINIST, v. 5179, no. 3723-40.
Cecchi was sent to Paniahue for 800 pesos. In 1919, Dr. Corbalán sent medical student Guillermo Boechler to Chillán for 800 pesos in remuneration.\textsuperscript{464}

Medical students were usually paid 800 pesos per month for their work in the Brigades; however, if they had family in the city in which they were sent to work, the remuneration was 400 pesos.\textsuperscript{465} Brigade assistants were typically paid 300-400 pesos per month while fully licensed doctors were paid 1,500 pesos per month. The salaries of the Brigadistas were 5 to 19 times higher than the monthly pay of agricultural laborers, a good salary by any measure. Yet, it was unlikely that money was a motivating factor for the Brigadistas as most were, likely, from affluent families. These individuals were motivated by a higher ideal.

As the crisis was unfolding, no one really knew what was happening except that the outbreak produced life-threatening illness in some. Nevertheless, these brave individuals worked tirelessly with the Public Health Brigades in an effort to control outbreaks when they would have been much safer staying away. Such acts cannot be called anything other than selfless valor. What inspired these individuals to such feats?

At the turn of the century, a wave of social activism and calling to higher purpose spread across university campuses, including the professions, as evidenced by a survey of medical and law school theses. Students tackled topics such as the debate over the welfare state;\textsuperscript{466}

\textsuperscript{464} Ibid.

\textsuperscript{465} Ibid.

\textsuperscript{466} Ernesto Libano Letelier, “Beneficencia” (law thesis, University of Chile, 1904); Julio Villarroel M., “Beneficencia” (law thesis, University of Chile, 1906); Pedro J. Ojeda R. “Sobre Beneficencia” (law thesis, University of Chile, 1903); Victor M. Espejo Ch., “La Beneficencia y la Población” (law thesis, University of Chile, 1914).
prostitution; venereal disease; alcoholism; crime; elementary school education; workplace safety; infant mortality and neonatal care; poverty and economic inequality; affordable housing; and, of course, hygiene, sanitation, and public health.

Citing Stein, Denis Diderot, Albert Palmberg and Lothar Buchar, the students of these theses understood their chosen topics as the dilemmas of civilized nations. One student declared that the implementation of hygiene—understood to mean physical as well as social and moral cleanliness—was critical. Without it “the progress of nations would be an aberration.”

As discussed in Chapter 2, above, there was a feeling of disillusionment in Chile at the time of the Spanish influenza outbreak. Government action was slow and when laws were passed they were not enforced. The turn of the century brought new hopeful minds eager to bring about positive change. This wave of inspiration culminated in 1920 with the election of Arturo Alessandri and the promulgation of the 1925 Constitution.

8.2.3. Efficacy and Controversy Surrounding the use of Medical Students and Brigadas Generally

The use of medical students in the Public Health Brigades was a thorny issue for the government and the Medical Association of Santiago. Following the destructive August-September 1919 wave, Dr. Ferrer questioned the accuracy of identifying the outbreak as

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467 Arturo Torres Pinto, “Asilos para Alcohólicos. Como medio de lucha contra el alcoholismo” (law thesis, University of Chile, 1905); Daniel Bernales Lazcano, “Sobre la Lei No. 1515” (law thesis, University of Chile, 1907).

468 Fernando Sandoval Hurtado, “Ensayo sobre la cuestión social en Chile” (law thesis, University of Chile, 1913).


470 Ibid., 43.
“typhus,” noting that, in various cases, medical students, who lacked appropriate training and supervision, had diagnosed “typhus” when, in fact, the patient had pneumonia, rheumatic fever or, in the case of some women, were simply pregnant or in post-natal recovery.\(^472\) During a meeting of the Medical Association of Santiago, a clearly agitated Dr. Ferrer sarcastically asked his colleagues: “Who is performing these services, the public health brigades? The physicians? No, surely it must be the general help.”\(^473\)

Dr. Vial, Public health Inspector for Zone II, responded to these allegations by saying, “The students from the brigades that combat the epidemic are true heroes, virtually unpaid and exposing their lives [to danger] they are dedicated to their work. It should come as no surprise that some diagnostic errors are made.”\(^474\) He also reassured the Medical Association of Santiago that disease diagnosis within the capital region was subject to three layers of validation by: a Brigadista; a doctor from the Public Assistance Hospital No. 3; and a doctor from the hospital.\(^475\) Nevertheless, the Medical Association of Santiago and the local governments warned about the unlicensed practice of medicine.\(^476\) Concerns about the activities of the Public Health Brigades mounted as revelations about the intrusiveness of their campaigns came to light.

The DGS was a government agency that, within a year of its creation, was asserting extraordinary powers normally reserved for the police or the military. Furthermore, there was a perception—justified or not—that such extraordinary powers were being executed by inexperienced and unqualified students and others with only limited experience. To appreciate

\(^472\) Meeting Minutes of the Medical Association of Santiago on 24 October 1919 per Dr. Ferrer, \(RMCh\ 47\ (1919): 238-39.\)

\(^473\) Ibid., 239.

\(^474\) Ibid. per Dr. Santander, 239.

\(^475\) Meeting Minutes of the Medical Association of Santiago on 31 October 1919 per Dr. Vial, \(RMCh\ 47\ (1919): 337.\)

\(^476\) “Ejercicio ilegal de la Medicina," \(RMCh\ 47\ (1919): 409.\)
the magnitude of these concerns, one has to consider what disinfection and prophylaxis, the primary activities of the Public Health Brigades, entailed.

8.3. Casas de Limpieza and Despojamiento

Whenever possible, the Brigadistas would transport those suspected of carrying body lice to Casas de Limpieza (Cleaning Houses). The infected individuals would be transported in retrofitted trucks and the Brigadistas would be covered from head-to-toe in protective gear (see Figure 42).
Persons with suspected cases of typhus would be herded into isolation rooms and stripped of their clothing. Their clothes and shoes would be disinfected using any number of methods including vapor, chemicals, or fumigation and their hair would be, partially or completely, cut depending on the advice of the public health official. Any remaining hair would be rubbed with a lotion (sometimes an insecticide was used). Use of these chemicals on the hair was offered as a compromise to the preferred option of shaving off all body hair, which option, unsurprisingly, resulted in confrontation.477

In mid-March 1919, a sanitary brigade transported 12 individuals infected with "typhus" to the hospital while their abode was disinfected. Ten of the twelve individuals were from a conventillo located at 184 Vivaceta and five of them died. In the San Rafael Hostel, 50 “suspicious” individuals were rounded up, cleaned, and vaccinated.478

Dr. Barraza, the interim Public Health Inspector for Santiago's Zone IV, was dispatched to Parral, in the south of Chile, to examine 8 suspicious cases of illness. At around the same time, Dr. Macuada, a Public Health Inspector in


478 “El Tifus Exantemático” MERC, March 16, 1919, p. 23.
Valparaíso, reported that 8 new cases of typhus had been confirmed in that city and that the number of cases in Viña del Mar was rising; it was, therefore, appropriate to dispatch a Sanitary Brigade to that city.\textsuperscript{479}

In Osorno, \textit{El Mercurio} reported that Dr. Suarez and his public health brigade had launched an aggressive campaign to disinfect hotels and restaurants in several working-class boroughs. In Puerto Montt, Dr. Mujica began disease prevention efforts.\textsuperscript{480}

In 1921, the Public Health Brigades conducted 1,113 visits to infection focal points and hospitalized 193 people. Brigade auxiliaries removed 4,394 people to “Clean Houses” for quarantine and isolation; they disinfected 1,200 homes and coordinated with the Public Disinfector to clean 6,276 pieces of clothing belonging to persons in hospital or in contact with the sick.\textsuperscript{481}

The Public Health Brigades often clashed with workers who questioned the efficacy and even the intent of the Brigades' work. Workers complained bitterly that their clothes were being ruined by the methods used to disinfect them.\textsuperscript{482} Some of these methods included: (i) steam or heat at a temperature of 80°C (176°F) using a Geneste-Herscher heater which device discolored and wrinkled clothing; (ii) chemicals, notably petroleum, paraffin, insecticides, 5% gomenal, 3% creolin, and 3% cresol; and (iii) fumigation by gas and cianhidric acid. The efficacy of some of the chemicals used to disinfect clothing was tested by intentionally releasing live lice onto clean clothing and observing how quickly they died; in many instances, the lice usually died within ten minutes.

\textsuperscript{479} Ibid.

\textsuperscript{480} Ibid.

\textsuperscript{481} Ibid.

\textsuperscript{482} Santiago, 25 October 1924, ARNAD DT, vol. 95.
In response to the workers' complaints, as lodged with the Director General of Labor, the Minister of Hygiene and Social Prevention dismissed their concerns, stating: “What typically happens is that the clothing of the workers get degraded regardless of the disinfection method chosen whether oven or ironing.”483

Dr. Corbalán lauded the disinfection devices used by the Public Health Brigades, explaining that the disinfection stoves used vapor, under pressure, to kill the parasites that lived on the workers’ clothes and which were ferried from place to place. According to Dr. Corbalán, the vapor did not burn the clothes and they remained intact through the disinfection process; clothes were susceptible to being burnt, however, when they were ironed but this disinfection technique was used less commonly given the volume of clothing to be disinfected.484 The historical record, however, shows that clothes were indeed destroyed as a result of the disinfection process: “As you know the delousing of the unemployed is difficult to execute in any effective manner, as they need new clothes, given that upon disinfection the clothes become so degraded that they are no longer useable.”485

8.4. Unchecked Power: Tragedy and Abuse of Power in Parral and Concepción

On August 1919, a Public Health Brigade, led by Dr. Santelices, marched on to the city of Concepción, the third largest city in Chile and the largest city in southern Chile. There, in the fight against the epidemic, he instructed the Brigade to burn down a number of houses after he decided that it would cost less to raze them than to disinfect them:

483 Ibid.

484 Ibid.

485 C. Molina, Médico de la Policía de Santiago, 1 July 1922, ARNAD MININT, vol. 5171, no. 3680.
I was sent immediately to fight the epidemic in Concepción. Disinfection houses had already been established. The local authorities put at their disposal all the services and resources necessary and authorized their members to proceed according to their own judgment and as advised without any reservation.

... The main focal point was a neighborhood of stable workers ... the disinfection would have cost 3000 pesos; it made more sense to burn it [the neighborhood] to the ground, and that is what I did. 486

Shortly thereafter, he ordered a further six and half blocks of houses to be burned to the ground.

Dr. Santelices admitted that, with a view to disinfecting persons, their clothing, and belongings, and to ultimately relocating them, he ordered his Public Health Brigade to forcibly remove four to five thousand people from their homes in Parral and an equal number in Concepción. Aided by municipal authorities, and the acquiescence of the central government, Dr. Santelices' Sanitary Brigade brought terror to the people of Concepción and Parral in, what is best described as, a shameful example of abuse of power in Chilean history. The fear is described in the following account:

The moment arrived in which the brigades were guided by higher authority and the whole world seeing their homes under threat of destruction pressured them to disinfect. Nobody could move from their home without prior permission from the sanitary authority; in this way we prevented the transmission of the contagion and the spread of new focal points in faraway places. 487

Following this tragic episode the Medical Association of Santiago debated the efficacy of burning property to control what they believed was a typhus epidemic, but much of their focus was on indemnification rather than on the legality, efficacy, or morality of the measure.

Dr. Santelices, who was present for the debate, argued that such extreme measures were justified for the sake of the greater good: “Why would we permit an endemic illness to run

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486 Meeting Minutes of the Medical Association of Santiago on 1 August 1919 RMCh 47 (1919): 48.

487 Ibid., 49.
through the nation when it is possible to suppress it?" When asked about indemnification, Dr. Santelices dodged the question, instead giving a highly dubious account of what had happened. According to Dr. Santelices, people were so eager to have their clothes and homes sanitized that they gave the keys to their homes to the Public Health Brigades and invited, even assisted, them to take whatever steps were necessary to carry out the disinfection:

In the present case, the whole world united under the threat of an epidemic and was cooperative. There were landlords that turned over the keys to their rooming houses giving them permission to do whatever was required; others asked only to salvage their roofing tiles. A neighborhood committee made collection of 36,000 pesos to give assistance to those most in need.

Dr. Santelices’ account is highly suspect. It is difficult to believe that anyone would willingly allow others to burn their homes and personal property or to be herded like cattle and subjected to the humiliating disinfection procedures described above. What was going through the minds of these people when they were ordered to leave their homes? What kind of duress were they under and who was there to advocate on their behalves?

Under Article 8 of the Reglamento dictado por la Dirección de Sanidad para la Profilaxis del Tifus Exantemático (the DGS' Regulation for the Prophalaxis of Exanthematic Typhus), anyone impeding a public health official’s duties could be fined between 50 and 200 pesos. Under the threat of such a sanction, what options would a person who made less than 80 pesos per month have in the face of a mandatory order from a public health body? In the midst of so much fear, sickness, death, and uncertainty, how would these people have perceived the Public Health Brigades and their authority? Public health as a government agency only emerged in Chile, in 1919; in this regard, the extreme disinfection measures carried out by Dr. Santelices' Public Health Brigades, in Parral and Concepción, occurred at a time when state sponsored

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488 Ibid.

489 Ibid.
public health was an extremely new concept in the country. Many of those people affected would have had limited education. How would they have understood the outbreak and the idea of state sponsored public health? Even amongst highly educated people and the political elite there were disagreements about the role of the state in such things.

The events in Parral and Concepción occurred without legal authority or indemnification. Given that the disease outbreak of 1918-21 was more likely influenza than typhus, the efficacy of burning homes and belongings to the ground was questionable, even from a public health standpoint. Even assuming that the disease was epidemic typhus, the efficacy of Dr. Santelices' actions is still doubtful. Some doctors involved in the Medical Association of Santiago's debate pointed to isolated cases of the razing practice in Northwestern Argentina and the United States, but the most compelling arguments against the measure came from Dr. Icaza who advocated isolation over razing and burning:

It is true that there are cases in which cremation is the only method. But as the vector for typhus is the louse, it is enough that the infected home be abandoned for a prudent period of time. During the current war [i.e. World War One] only individuals were disinfected. They entered up to a certain point; their clothes and personal belongings were collected; all areas of the body with hair were shaved; they were put in 3 baths and their clothes were put in ovens. These individuals with their same belongings returned to frontlines to fight. The focal point was abandoned and placarded and cordoned off by sanitary officials order to prohibit access. The results were terrific.

In the United States infant paralysis was fought by isolating suspicious cases in special tents located in the streets, on the snow, completely isolated from the rest of the population cordoned off by sanitary order.

It is not necessary therefore to burn or destroy, only to isolate. In the present case individuals were not isolated from the beginning and now it’s too late. Infection travels with newspapers boys, ticket takers, etc.490

Dr. Vial, who was in charge of Public Health Zone II, would later acknowledge the marginal efficacy of disinfecting building structures: “…we know well that the disinfection of

490 Ibid., 49-50.
homes is of secondary importance as the louse does not hide underneath furniture or in corners but solely in the clothes of those who are ill.”491 This advice ultimately found its way into a manual published by the Dirección General de Sanidad (DGS):

Why is disinfection of homes virtually useless? Because the disinfection of these abodes obliges its occupants to leave covered in parasite and later return with them to their homes.492

This guidance recognized that disinfecting homes (much less burning them down) was not an effective strategy. Until this official policy change, in the post-pandemic years, the practice of disinfecting homes during the pandemic likely exhausted human and capital resources that were already in limited supply.

The Medical Association of Santiago ultimately ordered Dr. Santelices to stop burning down houses and reminded him that he was only authorized to disinfect people and property, not destroy it. Despite this admonition by the Medical Association of Santiago, Dr. Santelices was never sanctioned. On the contrary, some members of the Medical Association of Santiago applauded his zeal:

Exactly how far reaching is the authority’s [i.e. DGS] power such that it can burn down houses? A fairly serious matter to ponder. It is only fitting that we should congratulate Dr. Santelices for his acts, efforts and dedication that can only be applauded.” 493

There was certainly a double standard when it came to deciding what to burn. One month after the Parral and Concepción incidents, the Bishop of Concepción wrote a letter to Dr. Corbalán expressing his concern about the forced closure of a church, by a local Public Health Brigade in San Carlos, because its priest was suspected of having died of typhus. Dr. Corbalán

491 Meeting Minutes of the Medical Association of Santiago on 31 October 1919 per Dr. Vial RMCh 47 (1919): 336.
492 Dirección General de Sanidad, Tifo Exantemático. Lo que deben saber los auxiliares sanitarios (Santiago: Imprenta Santiago, 1925), 13.
493 Meeting Minutes of the Medical Association of Santiago on 1 August 1919 per Dr. Valenzuela B. RMCh 47 (1919): 50-51.
promptly replied, apologizing for the misguided actions of the Brigade. He explained, to the Bishop, that disinfecting buildings was an ineffective disease control measure for typhus and that only the priest’s room would have to be sanitized:

The measures adopted by the mayor of San Carlos are absolutely inadequate from a exanthematicus typhus point of view. It is established scientific fact that only the person transporting *pediculus vestimenti* by which other people are bitten can transmit the illness.

There is no reason by way of sanitary regulation to order the closure of the temple simply because the person who lived there was sick.494

The contrast between the treatment of the poor in Parral and Concepción and the treatment of the church in San Carlos could not have been greater.

The state of siege mentality appeared early in the outbreak and was foolhardy in that it gave people, like Dr. Santelices, license to take matters into their own hands. Earlier in 1919, during a meeting of the Medical Association of Santiago, Dr. Prado Tagle made an impassioned and ominous appeal to employ whatever means necessary to eradicate the illness: "The spread continues the same as before. The sanitary section is criticized harshly and unreasonably. It is necessary to go against many private interests, and in this there should be no consideration. Proceed with all energy."495 In Valparaíso, a similar attitude prevailed. There, some spoke of forcibly bringing about the abandonment of unsanitary *conventillos* without regard to the objection of property owners and, if necessary, to “vulgarize the struggle against lice and their nits.”496


495 Meeting Minutes of the Medical Association of Santiago on 4 April 1919 per Dr. Prado Tagle *RMCh* 47 (1919): 304.

496 Meeting Minutes of the Medical Association of Valparaíso on 9 December 1919 *RMCh* 47 (1919): 232.
The central government stood with indifference as this militant core of individuals, without legal oversight, pursued an internal war that, at its heart, was motivated by a doctrinal conviction that Chile had become an uncivilized nation. They believed that it was their calling to save the country and the race.
Chapter 9: The Legacy of Typhus Theory

The propagation of the typhus theory had two profound effects on Chile: one negative, the other positive.

On the one hand, the typhus theory was a rush to judgment that stigmatized the working-class and poor during the pandemic and for years to come. It also validated the continued supremacy of bacteriology as a definitive framework for understanding infectious diseases. This ran counter to a broader trend in the western world where the idealization of bacteriology as the blueprint for understanding infectious diseases had come under attack.

On the other hand, the belief that public health had degenerated to the point that apocalyptic scourges, such as typhus, had been unleashed highlighted the abysmal living conditions of working-class and poor Chileans and stoked calls for social and economic reform.

9.1. Stigmatization

The terrifying diagnosis of typhus and the generalized position of physicians that the poor and working-class were the carriers, and transmitters, of the disease, in conjunction with provocative images in the media—written and photographic,—depicted the Chilean working-class and poor as marginalized “others” in their own country. The literature often described the poor and working-class as “carriers of the disease” (i.e. typhus) for no other reason than that they were poor and lived in humble conditions; thus, typhus became synonymous with poverty and those living in it. In this regard, the typhus diagnosis was a social one rather than a medical one.

In a Chilean textbook on typhus in the 1930s, the author stresses the importance of educating the working-class about typhus and the benefits of hygiene. He talks about the need to
mobilize labor unions to disseminate this important public health message. The author also provides photographs of people he describes as “carriers of typhus” (see Figures 43 and 44). By including these photographs in the book, the author implies that all poor and working-class people are potential carriers of typhus and, therefore, potential public health threats.

Figure 43: Picture of an Indigent Person from a Text Book on Typhus. The Person is Described as an Example of a “Carrier of Typhus”.

Figure 44: Picture of an Indigent Person Sleeping on a Park Bench from a Text Book on Typhus. The Person is Described as an Example of a “Carrier of Typhus”.

Source: Emilio Budnik B. Tifo Exantemático en 1939 (Santiago: Editorial Nascimento, 1940), 140.
Figures 43 and 44, above, are images of indigent people in the worst state possible. Figure 45 is an image of poor working-class people and their homes. While the homes depicted are humble, they do not suggest the state of social collapse that would occasion the spread of epidemic typhus. The interesting thing about Figure 45, and many other pictures of conventillos during the 1918-21 pandemic period, is that clothes and linens are shown drying outside on clothes lines; the presence of drying clothes and linens undermines the argument, by those favoring the typhus theory, that working-class people did not launder or bathe. Recall that a
precondition for the emergence and proliferation of epidemic typhus is a widespread scarcity of water which leads to poor hygiene and laundering practices. This, along with overcrowding, creates optimal conditions for the spread of human body lice, a particular form of lice that is distinct from hair and pubic lice and from other forms of infestation, such as bed bugs or fleas. Figures 43, 44 and 45, above, are windows into the mindset of upper class Chileans who seemed to view indigent people (depicted in Figures 43 and 44) and working-class people (depicted in Figure 45) as similarly situated: both groups of people were subject to negative social profiling. It is a pretentious worldview that overtly suggests two societies: one affluent, clean, progressive, healthy, and orderly; the other poor, dirty, backward, sick, and disorderly. This comparison falls into the civilization versus barbarism dichotomy that prevailed, in Latin America, in late 19th and early 20th century nation building rhetoric.

Disease as a basis of discrimination, particularly amongst the poor, is a well researched field. Beginning in the late 19th century, treatment of infectious disease, in Europe, changed from placing the emphasis on sanitation and cleaning to focusing on the treatment of individuals. With that came the doctrine of personal responsibility: “disease and consequent mortality were measures of relative well-being, indices of civilization. The excess sickness and premature deaths of the poor were evidence of social defects demanding remedy.”

During the late 19th and early 20th centuries, it was a common practice, in many western countries, to use the authority of medical science, inadvertently or by design, to stigmatize entire groups of people. This was motivated, on the one hand, by theories of quarantine but also by nativist prejudice and xenophobia influenced by Social Darwinian theories. There are conceptual parallels between the medical exclusion of immigrants and that of working-class Chileans by

their countrymen. In both cases, medicine was used as a public policy tool to lead society in a desired direction and to cast away all those who did not conform to this vision.

Of certain American perceptions on immigration in the early 20th century, Anne-Emanuelle Birn writes, “Immigrants became the menace of all menaces: physically, intellectually, and morally impaired, according to eugenics subscribers.” Disease served as a useful tool for denying undesirable immigrants an equal part in society. In the 1830s, Irish immigrants were discriminated against as carriers of cholera. In the 1890s, Jews were discriminated against as vectors of tuberculosis. In 1900, San Francisco was gripped by fear of the Chinese bubonic plague menace. In 1916, an outbreak of polio along the east coast of the United States raised the specter of “Italian disease.” Even as late as the 1980s, Haitians were stigmatized as carriers of AIDS.

There is a history of xenophobic and nativist tendencies, in Chile, which reached their peak following the War of the Pacific. As discussed in Chapter 2, these tendencies were used to explain Chilean exceptionalism during the euphoric post-War/Nitrate boom era; however, the exceptionalism painted a misleading picture of Chilean unity. Under the cloak of flag-waving,


nationalism, and bravado was a fractured country. The social classism that existed before the War of the Pacific was still there after the war. The ruling class fell in love with the idealized *roto* and *araucano* and the imagery that surrounded these mythical figures. In reality, the real *roto* returned to his humble existence, ill-equipped for reintegration after having faithfully served the country that now left him on the fringes. Chileans cynically refer to this phenomenon as *el pago de Chile* (Chile's repayment).\(^{505}\)

This marginalization was not deliberate in the sense that the State endorsed segregationist policies. Rather, it was the consequence of prevailing social attitudes among certain upper class Chileans who looked at the working-class with distrust and paternalism. They saw the working-class as uncivilized, wild, lacking in vision, irresponsible, and incapable of improving their situation without State assistance. There is no doubt that the poor and working-class needed the State’s help but their marginalization was hardly the result of their ineptitude or negligence; rather it was due to gross social inequities that offered few realistic avenues for improvement. Patricio Gross writes:

> The exclusion of the poor is exemplified in legal and urban discrimination (illegal and precarious neighborhoods), public health (unhealthy living), living conditions (slums and tenement housing); economic (high incidence of unemployment and underemployment) and social and cultural (segregation).\(^{506}\)

During the first half of the 20th century, working-class Chileans were often accused of living immoral lives. They were accused of being committed to a life of vice that included sex, alcohol, and gambling. During the pandemic of 1918-21, one doctor said that the disease,

\(^{505}\) On the challenges facing the reintegration of soldiers into Chilean society see Carlos Mendez Notari, *Heroes del Silencio: Los Veteranos de la Guerra del Pacífico (1884-1924)* (Santiago: Centro de Estudios Bicentenario, 2004).

identified as typhus, belonged to “unkept people of vice.”  

Leonora Reyes Jedlicki writes: “For the ruling class, popular culture was synonymous with barbarity, ignorance, laziness and lack of ambition.”

This licentious behavior was not only morally repulsive but also socially degenerative as it was an affront to the concept of family. It was a source embarrassment for ruling class Chileans who felt that it hindered Chile’s progress:

The liberal doctrines, particularly those imported from France, do not even make it as of the great pyramid of this epoch. The concepts of democracy and liberty are defended in impassioned speeches, but they do not translate into measures that crystallize into reality, they are privileges of one part of society that is educated and refined, owners of banks, owners of mines, as the rest of society continues on as an ignorant, dirty, sick and depraved conglomeration of people.

There was a sense that Chile was an unrulable country taken hostage by the barbaric masses.

The image of two Chile’s was a variant to the entrenched civilization versus barbarism narrative popularized by Domingo Faustino Sarmiento in his social commentary on the gaucho. The narrative has been used to contrast class differences. In 1872, Benjamín Vicuña Mackenna, one of Chile’s greatest statesman, spoke of two Santiagos, one that was “proper, a model city, affluent, Christian” versus another that was “an immense sewer of infection and vice, of crime and disease, a veritable field of death.”

Allegations that the epidemic in 1918-21 was caused by typhus drew from, and further fuelled, the perception of two Chiles in conflict with one and other. Typhus and its public health implications were examples in the ongoing dispute of what some saw as civilization versus

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507 “Encuesta sobre las epidemias reinantes en Santiago,” RMCh 46 (1918): 348.
510 Benjamín Vicuña Mackenna, La transformación de Santiago (Santiago: Imprenta de la Librería El Mercurio, 1872).
barbarism. Figure 46, below, epitomizes this dual vision of Chile. On the left is the common man: dirty, unkept and a carrier of disease. He is shown without his family, perhaps in deference to the popular perception that the common man was a family man, in name only. Typhus was another outlet for divisive classism. The imagery in Figure 46, below, is a powerful example of just how typhus reinforced classist divisions. On the right of the picture is the affluent man, concerned, and protecting his family who are clean, well dressed, and healthy in appearance. On the left is the unkept, sickly looking, man whose very presence is a threat to the gente decente [the decent people].

Figure 46: Typhus Exanthematicus Public Health Awareness Literature.

On October 22, 1918, Dr. E. Jaramillo, the attending physician at Hospital San Vicente, commented that most of the sick and dead "belong to the poorest and most abandoned class of people; in general, they are people who are dirty and full of vice."\textsuperscript{511} The diagnosis of typhus became an easy label to apply to a class of Chileans who did not conform to the political elite’s vision of civilization. This elite class spoke about the underclass in language that ranged from condescending to disdainful. In the cases of Parral and Concepción, discussed in Chapter 8, the homes that Dr. Santelices ordered be destroyed were, in his view, heaps of worthless garbage. Better, in his opinion, to torch the property than waste money on salvaging such junk.

One academic noted that typhus surfaced every time the economy was in trouble. In 1933 another typhus epidemic apparently occurred. During this outbreak we are told that:

thousands of vagrants and other unclean persons were disinfected in public cleansing stations; public buildings, theatres and churches by the hundreds have been scrubbed by disinfecting fluid or “gassed,” and sanitary cordons have been thrown about the worst areas to keep the disease from spreading.\textsuperscript{512}

In addition, we are told that public health officials urged citizens to have “better diets” to curb the spread of the disease. This was, generally, good medical advice but in the context in which it was given it was gratuitous as the spread of epidemic typhus is no way linked to diet. The gratuitous advice regarding eating habits is, perhaps, yet another illustration of the paternalism exercised by the ruling class and the State over working-class people. In 1939, during another supposed typhus epidemic in Chile, a manual on the treatment of typhus calls for the disinfection of trolleys “especially second class seating.”\textsuperscript{513}

\textsuperscript{511} “Encuesta sobre las epidemias reinantes en Santiago,” \textit{RMCh} 46 (1918): 348.


\textsuperscript{513} Emilio Budnik B., \textit{Tifo Exantemático en 1939}. Santiago: Editorial Nascimento, 1940, 131.
9.2. **Roots of Distrust**

The roots of distrust and suspicion of the working-class and poor ran deep. When the Spanish influenza pandemic erupted tensions were high between organized labor and the State. Strikes—some of them violent—were frequent. Dissatisfaction—or what had been commonly called the “social question”—had been brewing since the late 19th century. Essentially the “social question” concerned the gap between poor and rich and rural and urban.

As was discussed in Chapter 2, following the War of the Pacific (1879-1884), Chile went through a period of economic expansion fueled by its global monopoly on nitrate mining. The boom drew thousands of workers from Chile, Bolivia, Peru, and Argentina in search of work in the mining sector. Work in the mines was brutal with unsafe working conditions and long hours but the pay was much higher than what could be earned in elsewhere.

The left began organizing in the late 19th century. On May 1, 1892, it staged its first May-Day parade in Valparaíso.\footnote{Hernán Ramírez Neccochea, *Historia del movimiento obrero en Chile. Siglo XIX* (Santiago: 1956), 218.} It was not until the early 20th century that they become more organized and assertive. By 1910, there were 400 labor organizations in Chile. Metalworkers, telegraphers, printers, tram drivers, rail workers, miners, and dock workers organized into unions and mutual societies. Influenced by Spanish anarchism, organized labor rallies in the early 20th century grew violent even as the economy grew and Chileans became more prosperous. Indeed, many of the nitrate miners who were most vociferous were among the country’s best paid workers. As mining companies—particularly foreign owned—grew more prosperous, miners sought a greater share; but, their grievances ran deeper mismatched wages. They fought for better working conditions and ending debt-peonage.
The *enganche* system ("hook") lured workers into Chilean mines with promise of a higher pay and a better life. It is true that miners were the best paid workers in Chile. They were paid double or even triple what rural agricultural laborers were paid; but their days were long—miners would work 16 hour days—and conditions were perilous. Nevertheless, the workers kept on coming and the mines of northern Chile became a land of opportunity. Nitrate mining and its ancillary economic activities were labor intensive. The extraction of ore was long and hard work performed by men, while women and children sewed bags and clothing. Thousands of workers were needed at the docks and railways to load shipments.

Company stores and the sale of *pulque* (an alcoholic beverage) at the local saloons enslaved workers in Chile’s version of debt-peonage. Facilitating this condition was the *salario-fiche* which were tokens—local currency—redeemable at company stores and saloons. To make matters worse, rapid economic expansion in the early 20th century caused inflation to surge and the cost of basic food items outpaced increases in salaries. In 1905, there were a series of violent strikes. In 1906, strikes were held in Antofagasta and in 1907 the most infamous strike occurred in the northern port city of Iquique.

On December 4, 1907 the miners—Chileans, Argentians, Bolivians, and Peruvians—marched to the port city of Iquique. They had been protesting low wages and unsafe working conditions. Alarmed by the number of workers amassing (approximately 18,000) in Iquique—a city of no more than 40,000—the Minister of Interior vowed to use force if necessary to disperse the crowd. When negotiations failed, Colonel Silva Renard warned labor leaders that assembled military units would open fire on the crowd if they did not leave. On December 21, 1907, after ignoring calls to leave, the Army followed through with its threat. Over 3,000 workers and their

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families—women and children—we were gunned down, in cold blood, making it the biggest massacre of civilians in Chilean history. From that day on, tension between organized labor and the establishment has been a permanent feature of Chilean politics. Because of the nationalities of the victims, the incident and its cause became internationalized. Anotnio Ramón, Spanish citizen living in Argentina, moved to Chile after the massacre to avenge the death of his half-brother who had died in the onslaught. On December 14, 1914, Ramón followed General Renard as he went to work and stabbed him multiple times in the head and neck. General Renard survived the attack but remained with permanent disabilities. In the years immediately following the massacre, details of the incident were suppressed. In 2007, the Chilean government marked the massacre's centenary by officially acknowledging it and declaring December 21 a national day of mourning. The massacre at Iquique became a rallying cry of the left and was even immortalized in song.516

9.3. Bacteriology Unchallenged

Eugenia Tognotti writes that the Spanish influenza pandemic in Italy challenged the belief that bacteriology had all but conquered infectious disease. In 1892, Johannes Pfeiffer, one of the key players in the bacteriology school, claimed that he had succeed in isolating the bacterium in the sputum of influenza victims. This runs counter to what happened in other parts of the world.

After years of dazzling successes, bacteriologists had to admit their impotence. They were now criticized, as they were unable to provide any answers to the nagging doubt tormenting the whole world. Deposed by microbiology, clinical science now began to take its revenge...there was a return to the pre-

516 Written in 1969 by Luis Advis and performed by folk group Quilapayún, La Cantata de Santa María de Iquique, a unique 40 minute multi-part classical/folk composition became a protest anthem of the left in 1970s.
bacteriological era, a re-assertion of the clinician’s capacities, with his thorough knowledge of various diseases to guide him in differential diagnosis…It was, indeed, the clinical scientists who launched the most ferocious attacks against the bacteriologists.517

Scientists around the world tried to attribute Spanish influenza to the Pfeiffer bacilli but they could only link the bacilli to 50% of Spanish influenza cases.518

9.4. The Fractured Society

As was explored in Chapter 2, turn of the century Chile was a unique time in history. The chaos of the Parliamentary Republic, social and labor unrest, the dawn of a new century, centenary independence celebrations, and deflation following a quarter century of breakneck growth provoked a period of intense national introspection in which Chileans deconstructed elements of the national mythology and proposed new ones. A key conduit for this national discussion was the public health debate which had lingered in the national discourse since the late 19th century. The public health debate picked up in intensity following the outbreak of the Spanish influenza pandemic because of the belief, by some influential doctors and politicians, that the outbreak was actually typhus rather than influenza. A disease that typically emerges in places where there is great strife such as war or famine, typhus is symptomatic of a society that has descended into virtual ruin. In the case of Chile, some physicians and politicians believed that such was the state of the country. The vanguard of this social critique—physicians and politicians—criticized the political class for its neglect and/or incompetence in allowing society to degenerate to such lows.


The poor and working-class also spoke out using the opportunity to voice their grievances, regardless of whether they believed the outbreak was the result of typhus or influenza. Therein lies the redeeming aspect of what I believe was a wrong diagnosis; that is, even though the outbreak was likely influenza rather than typhus, the belief that it was typhus benefited Chilean society as it forced government, and other social actors, to look hard at social inequities. Arguably, if it were not for the typhus misdiagnosis there would have been less urgency to enact reform. The prevailing feeling among some of the militant members of the medical community was that the government, through indifference or incompetence, failed to appreciate the importance of the public health emergency at hand. In one meeting of the Medical Association of Santiago, Dr. Fontecilla said:

> The battle against the epidemic is not going well. It is necessary to pass this message on to those who can fix the problem. There should be a report on the actual status of the epidemic and what measures are necessary to end it.\(^{519}\)

Dr. Alejandro del Rio described Chile as being in a state of “Public Health Anarchy.” In an article on the state of housing, published in *El Mercurio* just before the second wave of illness exploded in August-September 1919, Dr. del Rio issued a public plea to the government that “the authorities should develop a plan to prevent so much misery.”\(^{520}\)

The idea that the authority of science and medicine could be used to marginalize and control segments of the population is not new. In his essay *The Housing Question*, Friedrich Engels wrote, “Capitalist rule cannot allow itself the pleasure of creating epidemic diseases

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\(^{519}\) Meeting Minutes of the Medical Association of Santiago on 17 October 1919, *RMCh* 47 (1919): 144.

\(^{520}\) “La Vida en Los Conventillos,” *MERC*, 3 October 1918, p. 17.
among the working-class with impunity; the consequences fall back on it and the angel of death rages in its ranks as ruthlessly as in the ranks of the workers.”

The impulse, in Chile, to root the epidemic in sociological explanations through which the poor and working-class were depicted as immoral, backward, even impediments to national progress is not without precedent. In South Africa the disease, which primarily affected non-white South Africans, was taken as evidence of the social, even racial, inferiority of non-whites. It was even argued that the basis for segregated public health policy directly stemmed from the Spanish influenza experience.

During the pandemic years, people all across the world struggled to understand what was happening. Physicians and scientists looked to science for answers and found none. The “triumphalism” of the bacteriology age came to a screeching halt and science was turned on its head. For average people, the outbreak was a social, cultural, and, even, religious phenomenon. Foley explains that in Ireland the Great Flu came to be viewed as the “price of conflict and a necessary atonement for man’s destructiveness.”

Labeling the 1918-21 outbreak in Chile as epidemic typhus served to validate the perception, amongst the Chilean ruling class, of a public crisis that was symptomatic of a broader national crisis which threatened the integrity of the Chilean State. The Chilean ruling class did not deliberately set out to misrepresent the outbreak as typhus for their own agenda. They genuinely believed that Chile had been invaded by typhus and that at the heart of this public health crisis was a dysfunctional State featuring a severely fractured society, on the one hand, and an incompetent and/or neglectful political class, on the other, incapable of aligning the country to the most basic standards of a modern state.

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522 Foley, *The Last Irish Plague*, 126.
Chapter 10: Conclusion

In October 1918, Spanish influenza arrived in Chile causing widespread sickness and death. At the time, some Chilean physicians refused to acknowledge that the illness was influenza. Within the medical community there was spirited debate over the cause of the epidemic. Some believed it was Spanish influenza, while others argued that it was not Spanish influenza but some other form of influenza. Yet others believed that it was not influenza at all but, rather, epidemic typhus, and still yet others argued that there were concurrent typhus and Spanish influenza epidemics. By November 1918, the prevailing view, if not the official view, was that Chile was undergoing two concurrent epidemics: one of typhus and one of influenza.

This dissertation examined the Spanish influenza experience in Chile from different perspectives. It looked at the quantitative story to uncover previously untold experiences. It also examined the pandemic's impact on different sectors of society. Spanish influenza arrived in Chile, in late September 1918, in much the same way it had arrived in other countries—a abruptly and cruelly. During the month of October 1918 sporadic daily cases of illness quickly snowballed into hundreds of cases per day. People died on the street, printing presses slowed, soccer matches were cancelled, entire battalions were confined to bed, and promising careers of young doctors and nurses were abruptly cut short by death. Yet, in the midst of this chaos and confusion people went out *en masse* to celebrate the trans-Andean flight of Lieutenant Godoy, the November 11 Armistice ending World War One, and various festivities including annual Independence Day (September 18) celebrations. Even as quarantines were imposed and disinfection services ramped up, people still gathered in crowds.

During this time there were also admirable examples of duty, patriotism, and compassion. Under public health legislation enacted in 1919, public health brigades known as the *Brigadas*
Sanitarias banded together. With courage and conviction they traveled from town-to-town providing medical care to those in need. There were, however, some dark moments too. The forcible and extra judicial removal of thousands of workers and their families and the torching of their homes and personal property in the southern cities of Parral and Concepción were shameful events that exemplified some of the abuses taking place during this time of medical emergency. These acts went unpunished, attracting nothing more than academic debate within the Medical Association of Santiago over the effectiveness of such measures and completely overlooking the fact that the action was illegal. Given that those involved probably suffered from nothing more than influenza, if anything at all, it is also quite likely that the measure achieved no public health benefit. This incident occurred because the occupants of the homes were poor and fit a certain a profile of what "typhus carriers" looked like. They were singled out as a result of their social-economic status and for the fact that they were a perceived threat to public health. They were victims of discrimination.

Also examined in this dissertation was the viability of the typhus theory. On a balance of probabilities, it was more likely than not that the thousands of deaths attributed to typhus were in fact influenza. Chilean physicians rushed to diagnose the illness as typhus using methods we now know to have been unreliable and drew assumptions that were highly speculative. The rush to judgment was influenced by recent discussions about typhus in international medical journals, stubborn leadership personalities, and a firm conviction that typhus was a manifestation of Chile's social condition: moral, political, social and economic decay.

The typhus epidemic—a disease associated with social dislocations and extreme poverty—was proof of how diseased Chile had become. Just prior to the pandemic a cloud of malaise hovered over the country. After having emerged victorious from the War of the Pacific
and living through an era of economic prosperity, Chileans began to question the Chilean exceptionalism narrative that had defined the last quarter of the 19th century. The depth of their introspection was accentuated by the angst of centenary celebrations that prompted Chileans to take stock of their achievements and shortcomings. Where had their greatness gone? Politically dysfunctional, socially corrupt, economically weakened, and over run by all kinds of diseases, it was not hard for some Chilean physicians and politicians to conclude that the epidemic—with its extreme and never before seen symptoms—was typhus, not influenza.

The typhus theory left a legacy that endured for years afterwards. On the one hand, the belief that living conditions had become so adverse that apocalyptic diseases descended upon Chile intensified public discourse around social issues such as housing and living standards. The 1920 presidential election of Arturo Alessandri—who campaigned on a platform of social and constitutional reform—was facilitated by the traumatic experience of the 1918-21 pandemic. The intensity of the experience—death, illness, social dislocation, mass disinfection campaigns, quarantines, public health regulation—coupled with the perception that it was the result of neglect, collective and personal, created ripe conditions for the charismatic, populist and strong man rhetoric of Arturo Alessandri. Although, Alessandri was unable to deliver on much of the social reform he had promised, his election and the mobilization of civil society, set the stage for future, deep, structural social reform.

On the other hand, the typhus theory stigmatized working-class Chileans for many years after the outbreak. It made them into “others” in their own country and further polarized an already classist society. One author commented that typhus epidemics were positively correlated with economic crises. Workers faced discrimination in very real ways. They were subjected to involuntary bathing and disinfecting campaigns. Certain businesses such as barber shops and

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523 Carlos Cruz Ponce, "Tifo Exantemático en Chile" (medical thesis, University of Chile, 1939, 36.)
pawn shops were required to pay special taxes—in effect a risk premium—to pay for the perceived social harm they produced. Only brothels were accorded similar treatment. In the case of pawn shops, this affected personal finances as pawn shops served as short term liquidity providers in a wage system where people commonly fell short before month's end and needed to collateralize personal belongs for short-term loans.

At a macro level, this episode in Chilean history belongs to a broader historical trend in late 19th and early 20th century Latin America whereby public health became incorporated into the legal and social framework of the State. The institutionalization of public health created new avenues of collaboration and confrontation between the State and everyday people. During this period, State spending on public health initiatives such as hospitals, laboratories and disinfection equipment increased. Greater attention was also paid toward professional certification and governance of the medical profession. Laws relating to food preparation and handling, manufacturing and sale of pharmaceuticals, sanitation, potable water, and hygiene were passed as standalone measures; they were ultimately strung together under a common public health banner managed by the State. Comprehensive sanitary codes, with enforcement mechanisms, were also important hallmarks of this era. Such codes often laid out the architecture of the State public health system. All these rules, as important as they were, did not, on their own, transform public health. It was one thing to create rules and processes, it was quite another to implement them. In a speech to his colleagues at the University of Chile, Dr. Alejandro del Rio, lamented:

> We enact good laws but neglect to enforce them; we create functions which require a numerous and technical personnel and do nothing to supply that personnel; and when, as sometimes happens, we create a special branch, it is found impossible to keep it in operation, owing to the insufficient financial support provided for it by law.\(^{524}\)

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Government funding and initiatives, not rule making were the true catalysts for change. This was true in Chile just as it was elsewhere in Latin America. What began to change in early 20th century Latin America was the willingness of governments to act on the existing patchwork of rules. This did not happen overnight. There were fits and bursts, usually in response to some medical emergency. State interventions were initially viewed with suspicion and hostility by the popular classes but eventually became an accepted new reality.

In Brazil, the 1904 mandatory yellow fever vaccination program led to violent confrontation between the military and the people. The program was an example of State encroachment in public health and the suspicion it aroused. For people not yet accustomed to State involvement in public health or the notion that disease was caused by microbial parasites, the vaccination program was a leap of faith. People were not just suspicious of science, they reacted to what they saw as a full frontal assault on their way of life. After all, the underlying assumption of the vaccination campaign was that Rio was in need of civilizing. The vaccination campaign was a microcosm of a far broader "social condition" ailing Brazilians. My research uncovers a similar phenomena in Chile.

The diagnosis of typhus was in large part an indictment against working class and poor living conditions. It was symptomatic of a "social condition" that required treatment. As in Rio that treatment was "material and moral." In Chile, there were calls to prohibit alcohol and control prostitution while also cleaning the streets, vaccinating people, and indiscriminately disinfecting every possession of the poor. For all the concern with cleaning society, interest in dealing with root problems was elusive. Housing sanitation and overcrowding was dealt with by disinfection campaigns, rather than by creating sufficient good quality and affordable housing.
At the turn of the century there was insufficient quality housing available for the poor at affordable prices. High rents further complicated this situation by making it impossible for workers to save. The only solution was to rent, overcrowd, and grudgingly accept poor quality, low cost housing. It seemed ridiculous to blame the urban poor and working-class for living conditions over which they had very little control. Yet, this was the tone of early 20th century discourse which Diego Armus aptly described as "the worn-out tactic of explaining epidemic crisis by blaming the sick." To quote the title of this dissertation, the poor were "los culpables de la miseria" (makers of their own misery).

This dissertation presents a novel exploration into a previously under-researched topic in Chilean, Latin American, and Spanish influenza historiography. In so doing it raises additional questions for other scholars to explore. Further research on the impact of Spanish influenza on Chile’s indigenous populations on the mainland and Easter Island is needed. During the course of my research, information on this sub-topic was not readily available. Research on the impact of Spanish influenza and pandemic influenza on native populations elsewhere (e.g. Norway, Canada, Australia, New Zealand, and South Africa) revealed that generally they were more susceptible to infection and severe disease, with a higher incidence of mortality, than were non-native peoples. In the southern Chilean provinces, where there was a higher concentration of native people, mortality rates were much higher than in the rest of the country during the pandemic years.

Prior to the pandemic Chile had an atrociously high infant mortality rate whereby more than 50% of babies died before the age of one year. In many cases the cause of death was starvation, neglect or disease. Although Spanish influenza generally affected healthy, young

males, a surge in infant deaths did occur in 1918 and 1919. Why did this surge occur? Were babies dying of Spanish influenza or were they dying from abandonment as mothers fell ill or died from the epidemic? It is now known that pregnant women are among the vulnerable class of people during influenza pandemics and some historical monographs treat the subject. What was the experience of expectant mothers during the Spanish influenza pandemic in Chile? Was there a rise in miscarriages during this time?

A logical extension to questioning the typhus theory is questioning the cause of death of those who supposedly succumbed to the illness. Specifically, one might question whether Santa Teresa de los Andes, Chile’s revered patron saint, died from typhus. Given the spread of Spanish influenza and its propensity for attacking young, healthy adults, and given the lack of certainty that surrounded the medical diagnosis of her cause of death, it is possible that she died from Spanish influenza not typhus. Her cause of death certainly does not detract from her saintly attributes, deeds, or status.

The story of Spanish influenza in Chile is complex and layered. It is just as much a story about nation building and division as it is about disease and death. At a macro level it illustrates that disease is very much a social construct and is far less clinical than some would believe. It is a reflection of what we want and do not want to be.
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