Integrating Pandemic through Preparedness: Global Security and the Utility of Threat

by

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Abstract

Emerging infectious disease has become a paradigmatic way of thinking about disease in recent years. In response to the widely-held view that an emerging pandemic is an imminent, albeit uncertain, event linked to global interconnectedness, pandemic preparedness has been the target of considerable political concern and economic investment. To date, there has been relatively little critical research questioning the broader social and political implications of this seemingly natural undertaking.

My research addresses this knowledge gap by exploring pandemic influenza planning as a global approach to the regulation of emerging infectious disease. I investigate how pandemic is framed and the ways in which these framings link to broader political and economic contexts. I undertake a Foucauldian-informed, critical discourse analysis of four key pandemic planning documents produced by the World Health Organization between 1999 and 2009. I ask how infectious disease is constructed in particular ways, and how these constructions can be interpreted in relation to broader global contexts.

My findings, which describe a range of discursive strategies in governing pandemic, are four-fold. First, I examine the characterizations of the influenza virus, and their effect of rendering
normal and pandemic circumstances as indistinct. I describe how these constructions are implicated in the framing of preparedness as a continuous engagement with the process of emergence. Next, I explore how the delineation and regulation of boundaries simultaneously constitutes bodies and territories as distinct. Third, I describe the discursive construction of a particular kind of global geopolitics which represents vulnerability according to the interconnectedness of states. Finally, the pandemic virus acquires a form of utility that portrays preparedness as having the potential for securing society against a broad range of potential threats.

Anticipating the exceptional features of pandemic is to be achieved through the integration of contingency mechanisms into existing systems of preparedness whose objective is continued economic and social functioning. The regulation of circulation central to pandemic preparedness establishes an ongoing engagement in decisions about freedom and constraint in relation to different forms of mobility or circulation. My findings are interpreted in light of their implications for understanding the global regulation of, and intervention into, molecular life.
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1 Introduction

This thesis on global pandemic preparedness takes as its starting point the idea that emerging infectious disease has become a paradigmatic way of thinking about disease; over the last fifteen years, policy-makers and the scientific community have been increasingly interested in a future influenza pandemic that could have dire consequences for global health. Although there is considerable uncertainty about when the next pandemic will occur, the general consensus is that an outbreak will occur and will be far more severe than previous pandemics. Pandemic influenza planning, then, involves a health problem that is both imminent and uncertain; it has yet to emerge.

Not surprisingly, this heightened concern has been accompanied by increased investment into planning by local, national, and international health authorities. At the onset of the 2009 influenza pandemic, Dr. Margaret Chan, Director-General of the World Health Organization (WHO) stated: “No previous pandemic has been detected so early or watched so closely, in real-time, right at the very beginning. The world can now reap the benefits of investments, over the last five years, in pandemic preparedness” (WHO 2009c:2). Not everyone in the public health community, however, has been so sanguine. French infectious disease expert Marc Gentilini, for example, made news headlines when he described the response as a ‘pandemic of indecency.’ His characterization highlighted the glaring disparity between the investment into pandemic preparedness and investment into treatable infectious diseases such as tuberculosis and malaria that disproportionately affect the inhabitants of ‘poor’ nations (Martinache 2009). Members of the Council of Europe also questioned the legitimacy of the WHO’s 2009 pandemic designation, suggesting that pharmaceutical companies had influenced national and international decision-making about a pandemic for their own profit (Wodarg et al. 2009). Despite this early dissent, pandemic preparedness has acquired a normative quality. Health authorities are now concerned mainly about the problem of insufficient preparedness in certain world regions, countries, and sub-national contexts.

The urgency of pandemic preparedness has developed within a broader climate of fear about newly emerging diseases. Dominant portrayals of infectious disease frequently depict the global spread of infection as a rapid process. Because countries in the global South, or non-Western nations, are often decried as the key sources of infection, such representations
inadvertently build on other global events that have fostered unprecedented anxiety. For example, the response to the 2003 Severe Acute Respiratory Syndrome (SARS) outbreak in Toronto evoked the aftermath of the 9-11 terrorist attacks in the United States. Images of people wearing masks as protection against the virus, and deserted downtown Toronto streets, were widely circulated and brought to mind similar scenes of crises and threat following 9-11. Similarly, the scapegoating of Chinese and Southeast Asian Canadian communities in Toronto during the SARS outbreak mirrored the discrimination against certain racialized groups after 9-11. Within this context, I began to speculate about whether the framing of pandemic as a global health issue was based on preconceived understandings of geopolitical configurations that extended beyond the health arena. More specifically, pandemic preparedness, including the considerable and largely unquestioned investment into preparedness activities and the potential global inequalities engendered by such activities, appears to be closely linked to the broader global political and economic contexts within which it is conceived.

To date, only a small body of critical social science research has addressed the issue of pandemic influenza planning and preparedness. Some studies point to the ways in which medico-scientific constructions of, and solutions to the ‘problem’ of pandemic influenza are accepted uncritically, to the exclusion of social and economic factors (Garoon and Duggan 2008; Williams 2008). Other research has addressed the problem of the governance of emerging infectious disease, especially in its representation as a global phenomenon (Cooper 2006; Weir and Mykhalovskiy 2010). Some suggest that contemporary approaches to governing infectious disease are distinct from those that preceded them, mainly because of their focus on diseases that have yet to emerge (Weir and Mykhalovskiy 2010).

Still other researchers are concerned with the conceptualization of infectious disease as a national and global security issue (King 2002; King 2005; Elbe 2005; Ingram 2008a; Ingram 2008b; Elbe 2010). For example, some work has focused on the increasing conflation of (bio)terrorism and infectious disease outbreaks and the corresponding militarization of public health, especially in the US (Monahan 2006; Cooper 2006; Ingram 2008a; Ingram 2008b). However, this largely Foucauldian-inspired work seldom involves in-depth empirical research to enhance understandings of biosecurity threats such as pandemics. Thus, previous research has not investigated pandemic preparedness as a unique example of global health governance. Empirical research is also needed to clarify the specific ways in which pandemic is constructed
as a social problem within health governance, and how it relates to broader economic or political contexts.

My examination of pandemic preparedness addresses the gap between theoretical formulations and empirical studies of global health governance. Central to my work is the dilemma inherent in planning and investing in a specific disease outbreak that has yet to materialize. At the outset of my study, the H1N1 pandemic had yet to occur, and the widespread investment into this problem had not been challenged at length. I was interested in how pandemic is ‘imagined’ to allow for preparation for some future event, and in the forms of knowledge that are drawn upon throughout this planning. I felt that it was important to examine and unpack the imaginings that make possible certain interventions into emerging infectious disease, at the expense of others. Additionally, the discursive framing of infectious disease through global health governance is implicated in the production of material conditions, and therefore has broader consequences for understanding global relations of inequality and possibilities for social exclusion.

My thesis focuses on pandemic influenza planning as a global approach to the regulation of emerging infectious disease. I examined how pandemic is framed and how these framings are related to broader political and economic contexts. To achieve this, I undertook a Foucauldian-informed critical discourse analysis of four key WHO policy texts that were produced between 1999 and 2009 to guide global pandemic influenza planning and response. Specifically, I critically interrogated the knowledge underpinning the techniques of infectious disease governance using three guiding questions: (1) how is infectious disease constructed? (2) what discursive strategies are used in such constructions? and (3) what do these constructions and discursive strategies suggest for how we can understand broader economic and political contexts? This approach allowed me to analyze the discursive effects of these framings within the context of contemporary biopolitical configurations.

My thesis is organized as follows. In Chapter Two I present a review of relevant literature. I briefly outline the general problem of pandemic influenza and summarize critiques of dominant understandings of re-emerging infectious diseases. Next, I explore analyses of infectious disease as a specifically global phenomenon, together with ideas about mobility and animal-human interconnectedness and their implications for conceptualizations of disease under
globalization. I conclude with a discussion of the recent discourse of ‘securitization.’ As a key technique in the regulation of uncertainty, the portrayal of pandemic influenza as a threat to national security legitimizes the current significant investment of human and economic resources in planning for this future event.

In **Chapter Three** I outline the theoretical framework for my research. Building on the Foucauldian conceptualization of biopolitics, I discuss the concept of ‘risk’ in relation to the biopolitical regulation of the population, and introduce the concept of ‘preparedness’ and its possible contribution to theoretical understandings of governing uncertainty. I also explore the relationship between biopolitics and the security of the population, with a particular focus on the concepts of contingency and circulation. I conclude by proposing the Foucauldian conceptualization of ‘race’ as a starting point for an exploration of how inequality and difference are related to infectious disease regulation. The framework of a ‘global biopolitics’ is advanced as a means through which to examine the enhancement or disavowal of life in a global context.

**Chapter Four** presents my methodological approach. I describe how I used critical discourse analysis as a method of data analysis, and discuss the epistemological assumptions involved in this method. This is followed by a description of my research questions, sampling strategy, and a detailed account of the WHO pandemic planning documents that comprise my sample. Finally, I describe the organizational and analytic decisions that I made throughout the process of data analysis.

**Chapter Five** is the first of two chapters presenting research findings. I begin by describing a range of discursive strategies, such as the characterization of the influenza virus, and their effect of rendering normal and pandemic circumstances as indistinct. These constructions are implicated in the framing of preparedness as engaged with a continuous process of emergence. I also outline a particular discursive construction of the influenza virus, in addition to the corresponding features of disease, that serves to blur the boundaries between ‘normal’ and ‘pandemic’ conditions. Next, I examine the delineation and regulation of boundaries between distinct political and social bodies or entities. Here, I describe how the uncertainty attributed to the interconnectedness of different political formations frames these links as risky in terms of possibilities for the spread of disease, and positions risk as inherent within the symbolic or political merging of bodies. Finally, I discuss the construction of territorial and symbolic
boundaries, especially as they relate to different capacities of nation states to prepare and respond to pandemic.

In **Chapter Six** I describe how the uncertainty surrounding the future occurrence of pandemic corresponds with an organizing logic that seeks to achieve flexibility in framing and guiding the responses outlined in the texts. I discuss the operation of intensive and generic surveillance, which is intended to ensure early detection of emerging viruses. I also explore how contingency measures are promoted in pandemic planning, advancing the understanding of preparedness as a continuous rather than static process. I examine the tension between the WHO objective of common national preparedness and the acknowledgment of varying capacities to prepare, and experiences of pandemic in specific national and sub-national contexts. Finally, I outline the increasing importance of accounting for multiple and mutual vulnerabilities in planning and response; this expansion serves to extend responsibility for planning beyond the health sector, integrating a broad range of actors and bodies in the pursuit of preparedness.

In **Chapter Seven** I interpret my research findings. Specifically, I explore pandemic planning as a pre-emptive approach to governing, where uncertainty is central to necessitating a continuous process of preparedness. I focus on circulation as a target of governance, in terms of the expansion of the virus through individual bodies, populations, and territories. These themes are further analyzed in relation to the tensions inherent to guidelines that recommend nations conform to a standardized procedure, while simultaneously recognizing particular national and sub-national contexts that may lead to differences in experiences of disease. In the final section I discuss how the representation of the mutual vulnerability of states, within the global economy, operates as a powerful tool in legitimizing the operation of preparedness.

Finally, in **Chapter Eight** I briefly discuss how my findings contribute to the body of research and theory about infectious disease and global health. I also identify the limits of my work and possible future research directions.
2 Literature Review

In this chapter, I review critical perspectives on global infectious disease governance. First, I will outline the ‘problem’ of pandemic influenza planning, along with the theme of (re)emerging infectious disease, to position pandemic preparedness within the broader scholarship about the global response to infectious disease. Next, I focus on the importance of globalization within the context of emerging infectious disease and approaches to pandemic planning. I then introduce critical perspectives that consider emerging global infectious disease as connected to processes such as increased mobility, and relations between animals and humans. Finally, I discuss research about the relatively recent ‘securitization’ of infectious disease, wherein disease is framed as an issue of national and international security; this highlights the inherently political character of knowledge about infectious disease.

2.1 The ‘problem’ of pandemic influenza planning

Over the past fifteen years, considerable attention has focused on the potential pandemic influenza outbreak that could kill 2–12 million individuals worldwide (Davies 2008). Mortality estimates are based on past pandemics; a 1969 pandemic caused 700,000 deaths, and a 1918 pandemic killed 50 million (Monahan 2006). In 1997, H5N1, a highly pathogenic strain of avian influenza, infected humans following a poultry outbreak in Hong Kong. This discovery caused general concern that the virus would mutate, becoming increasingly adapted to humans and consequently more efficiently transmitted, despite the lack of human-to-human transmission at the time. This form of influenza normally affects waterfowl and wild birds, but the detection of H5N1 infection in poultry led to the culling of poultry flocks, which was initially thought to have controlled the disease. However, in 2003 and 2004, a widespread re-emergence of H5N1 appeared in avian populations, and the virus spread from Asia to other continents. At this time, sporadic infection was observed in humans, but transmission of the virus between humans was very limited (Hien, de Jong and Farrar 2004). Until April 2009, this virus, which is presently endemic in domestic and wild fowl populations in parts of Asia, was considered the likely source of a future pandemic.

Concerns about a future pandemic were further intensified following the SARS outbreak in 2003. The then-unknown disease emerged in Hong Kong, and spread rapidly to other global
regions such as Singapore and Toronto (Ali and Keil 2008). This outbreak represented a key event for the governance of infectious disease emergence. The rapid global spread of the disease, the severity of illness associated with infection, and the initial uncertainty about its specific clinical characteristics (e.g., the structure of the virus and transmission routes) presented unprecedented dilemmas with respect to the global governance of disease. While the virus was eventually contained, the outbreak provided substantial legitimacy and encouraged political investment in infectious disease planning at a time when such planning was already beginning to emerge. Some scholars have suggested that the SARS outbreak, among other factors, was the catalyst for the World Health Organization (WHO) to secure its current position as the key figure in the governance of global health security (Davies 2008; Weir and Mykhalovskiy 2010).

Following the SARS outbreak, the WHO approved modifications to the International Health Regulations (IHR), a legally binding instrument requiring all WHO member states to report the outbreak of certain infectious diseases. These revisions were approved by the WHO in 2005 and became international law in 2007. A central change in the revised IHR was the provision of the general ‘public health emergency of international concern,’ which marked a shift from an exclusive focus on infectious diseases toward a wider range of ‘events’ (e.g., environmental crises or bioterrorist attacks) that could affect international health (Weir and Mykhalovskiy 2010). Along with a broader scope of notifiable diseases, the revised IHR sets out the required strengthening of surveillance and response systems and presents itself as a necessary update to international law in the context of globalization. At the same time, these regulations were designed to prevent needless interference with international traffic and trade (WHO 2008:1).

In response to the potential threat of pandemic influenza, many Western nations have made significant investment into pandemic planning over the last decade or more. The WHO has spearheaded planning with the production of general guidelines for national health bodies and regional organizations or affiliations. A key response to the threat of emerging infectious diseases has been a focus on ‘preparedness’ as a means of dealing with what is seen as an uncertain but impending event. ‘Preparedness’ is largely framed as the necessary stockpiling of antiviral drugs and development of vaccines, requiring considerable development in global vaccine manufacturing capacity (Webby and Webster 2003). The US has been especially active in stockpiling, as are many other national health authorities (Elbe 2010).
It should be noted that collaborations in international influenza governance did exist prior to the emergence of pandemic planning in the late 1990s. In 1947, the WHO established its Global Influenza Surveillance Network, which consisted of a system of National Influenza Centres, and a WHO Collaborating Centre in the UK. The establishment of this network was intended to “guide the annual composition of vaccines and provide an early alert to variants that might signal the start of a pandemic of rapidly evolving influenza viruses” (Heymann and Rodier 2004:173). Influenza surveillance as an international exercise expanded following this development to include an increasing number of nation states within this network (Fleming, van der Velden, and Paget 2003). Thus, while countries in the global North largely focused their attention away from infectious diseases (towards chronic conditions) from the mid-twentieth century, international influenza surveillance represents one exception to this trend. At the same time, the more recent period of pandemic preparedness likely reorganizes existing configurations of international networks, which address influenza surveillance and vaccine development.

Controlling the state of infection in animal populations is also considered an important response to the threat of pandemic (Webby and Webster 2003). Other means of addressing a future pandemic include global surveillance and contact tracing, travel restrictions, border screening, and quarantine measures once an outbreak occurs (Garoon and Duggan 2008). Considerable concern has been expressed within policy circles regarding the possible adverse social and economic consequences of a pandemic situation (Sakaguchi 2005). Economic concerns likely stem in part from the substantial economic loss in certain areas during the 2003 SARS outbreak: in Toronto alone, the outbreak resulted in an estimated loss of $3 million in revenue within the first two weeks (Davies 2008).

Economic concerns are evident in planning documents. The Canadian Pandemic Plan states: “Ultimately it is expected that advanced planning in the health and other sectors will together minimize serious illness and overall deaths, in the event of an influenza pandemic, and also ease any social or economic disruption that might be caused by a massive outbreak of the disease” (PHAC 2006: iii). Planning documents in some countries specifically target a wide range of social bodies or sectors, providing guidelines for planning and practice before and during a pandemic. Preparedness initiatives have been developed at a number of governmental levels. For example, the Canadian federal, provincial/territorial, and municipal governments have invested in the development of plans that detail measures to be taken during a pandemic.
These measures extend to many domains of social and familial life, and range from guidelines for school closure, to recommendations for individual families to make preparedness a priority and tips for how this can be achieved.

Public health pandemic influenza planning overlaps considerably with planning in other sectors, such as disaster and emergency management, food and agricultural organizations, and animal health organizations (MacKellar 2007). Most government branches provide online information about pandemic preparedness, framed in terms relevant to their mandate. For example, the Canadian Food Inspection Agency (CFIA) presents avian and swine influenza as a ‘biosecurity’ issue (in terms of the health of livestock and animals) and provides guidelines for citizens who own animals, travelers, veterinarians, and the agricultural industry to prevent the spread of influenza and a possible pandemic (CFIAa,b 2009). These examples highlight the legitimacy attached to the exercise of pandemic preparedness, along with its permeation into multiple arenas of governmental decision-making.

2.2 Critical social science research on (re)emerging infectious disease

The topic of emerging infectious disease is highly relevant to my area of research, as pandemic influenza has been widely cast as emerging, characterized by representations of a novel viral strain that has yet to materialize. The recent emergence and re-emergence of infectious disease in countries located in the geopolitical North has resulted in considerable research from the medical, science, and social science communities about the causes and implications of this trend. A number of critical perspectives can be identified regarding the conceptualization of (re)emergence and infectious disease. Farmer (1999) challenges understandings of (re)emergence by acknowledging the experiences of extremely vulnerable populations, particularly those in the geopolitical South, which failed to undergo the epidemiological transition to chronic diseases. These populations continue to suffer from a comparatively disproportionate burden of infectious disease such as tuberculosis and HIV/AIDS, in addition to chronic conditions such as heart disease and cancers. The increased life expectancies and health transitions in wealthy countries are the result of developments in antibacterial medicines, vaccination, sanitation, infrastructure, and nutrition (Farmer 1999). Farmer also notes the structural violence inherent to conditions of extreme material deprivation.
resulting from economic inequalities produced by practices such as international trade agreements and processes of globalization.

In emphasizing the social causes of the distribution of disease, Farmer (1999) argues that disease transmission and prevalence rates cannot be understood outside of the historical context of structural relations of inequality and dependency that result from colonialism and globalization and that render certain populations particularly vulnerable to disease. Additionally, the emergence and re-emergence of infectious diseases has been acknowledged as a pressing concern because of their implications for populations in wealthy countries. Together, these highlight the inequality between international investment into diseases (such as a pandemic that does not yet exist) and the lack of political commitment toward adequately addressing the health issues of the world’s most marginalized populations. Another critical perspective involves the reduction in funding and support of public health infrastructure, an important factor contributing to the (re)emergence of infectious disease in developed nations (Waters 2001; Cooper 2006). The decline in spending on social and health services increases the vulnerability of the entire population and exacerbates the risk for those populations formerly deemed vulnerable to infectious disease.

A dominant element of pandemic influenza planning activities has been investment into the stockpiling of vaccines and antivirals by Western nations. Partly in response to this, some scholars have criticized the unequal access to these drugs prior to the H1N1 pandemic (Davis 2005), as low income countries were dependent on the ‘benevolence’ of other nations for donations. This disparity between national pandemic responses is linked with other important questions about the role of drug regulations in protecting pharmaceutical patents at the expense of the health of certain populations and social groups. Both of these issues highlight the privileging of economic interests over those of health and well-being, and the tensions between the allegedly egalitarian global infectious disease surveillance system and the unequal distribution of vaccines that are actually developed from the influenza samples gathered through this system. This was exemplified by the initial refusal of Indonesian officials to share viral samples with the CDC, because of the unequal distribution of vaccines worldwide (Normile 2007).
Other analyses focus on the discursive role of emergence in broader social and political contexts; these issues are important to consider within the changing responses to health and disease, such as the dismantling of the social supports described above. Weir and Mykhalovskiy (2010) analyze approaches to the newly dominant ‘emerging infectious disease’ category as simultaneously oriented toward the known, the unknown, and the emergent (or potential). Infectious disease control once targeted existing diseases, but the introduction of this new conceptualization and operation now directs governing strategies toward that which has not yet been realized, thereby effecting a time-shift – relocating the future within the present. These arguments are highly relevant to my own research and I will return to them in the discussion of my results.

Cooper (2006) describes the focus on emergence as corresponding with pre-emptive actions taken in war, where emergence describes a threat “whose actual occurrence remains irreducibly speculative, and impossible to locate or predict,” despite the seeming inevitability of this threat (p. 124). In this sense, emergence discourse may represent a progression into a continuous ‘state of war’ that justifies certain pre-emptive measures in the name of defense and can function to integrate both military and health concerns (Cooper 2006). Furthermore, she argued that the dominance of pre-emptive approaches in response to emergence actually implicates these methods in the production of the conditions of emergence of future occurrences addressed by preparedness initiatives. Thus, the very process of pre-emption enables the actualization of the future; the question “becomes one of how to secure that which may not yet exist at the same time as securing already existing life” (Hinchcliff and Bingham 2008: 1537).

The problem of (re)emergence of infectious diseases thus presents new challenges for the governance of health within the context of globalization. Understandings of the term ‘governance’ have developed to extend conceptualizations of governing beyond the exclusive sovereignty of the nation state and its institutions. The responsibility for processes of social and economic regulation and the operation of political authority now extends to include transnational organizations and broader global arenas; this is a complex configuration of actors and institutions, within which recommendations, regulation, and decision-making are situated (Stoker 1998; Holton 2005). A crucial tenet of this understanding is the idea that governance involves a multiplicity of actors: no single organization or nation has the capacity, in terms of resources and knowledge, to govern unilaterally.
The issue of governance is important for contemporary understandings of infectious disease. Specifically, emerging infectious disease has become an increasingly legitimate problem for governance within the global context, and provides a good case study of the blurring of boundaries of responsibility between different levels of governance, given that pandemic planning transcends the borders of the nation-state. Furthermore, certain aspects of the broader political context may have contributed to the increasing prominence of infectious disease as a legitimate problem of governance. The WHO is a key organization responsible for the global governance of health; it is involved in the production and dissemination of expectations, position statements, and guidelines regarding the regulation of infectious disease by national and regional bodies. While my current research focuses exclusively on planning materials produced by the WHO, this organization represents only one of many actors implicated in the governance of pandemic.

In addition to the literature on the ‘problem’ of emerging infectious disease, more generally, there has been some social science research that offers a critical perspective specifically on preparedness and pandemic influenza planning. One theme identified in this work is the scientific uncertainty and unpredictability inherent to the event of pandemic (Williams 2008; Garoon and Duggan 2008). Williams (2008) criticizes the appropriation of uncertainty to justify the use of ‘flexible’ and ‘reactive’ approaches within pandemic influenza policy planning. He argues that a focus on scientific uncertainty detracts from the social dimensions of pandemic planning, and may function to minimize the accountability of those involved in decision-making. This kind of analysis of pandemic plans focuses on the continuous deferral to scientific authority by policy-makers and the assumed neutrality of scientific discovery (Williams 2008; Garoon and Duggan 2008).

Garoon and Duggan (2008) focus on the representation and function of ‘vulnerability’ or ‘risk’ in the WHO’s Pandemic Influenza Recommendations and 37 national pandemic preparedness plans. They examine the homogeneity of conceptualizations of risk groups in the plans and the marginalization of “non-biological characteristics” that influence vulnerability (e.g., economic inequality). They simultaneously criticize the legal and ethical discourses that underlie the notion of preparedness, and demonstrate that both discourses privilege the strengthening of infrastructure in order to maintain the existing political and economic order, while marginalizing understandings of vulnerability as part of larger social structures. They
argue that this lack of consideration of structural inequalities by policy-makers is highly problematic, given the history of burden disproportionately suffered by marginalized populations during health and other emergencies. Pandemic plans consistently appeal to a reliance on legal national and international frameworks as essential in the event of a pandemic, and the authors note that an economic discourse is largely, and surprisingly, absent. In response to this finding, they argue that “[t]his is, however, precisely because all of the discourses are embedded within a field that is manifestly economic…[t]he economic can be nowhere only because it is really everywhere” (Garoon and Duggan 2008: 1139).

This kind of research offers important critiques of public health planning documents, but it is still important to expand critical approaches to these texts to incorporate broader global political relations. The authors discussed above are rightfully critical of the exclusion of certain perspectives, such as the social dimensions of vulnerability in national plans, but analyses clarifying the relationship between broader political and economic contexts and the role of governance in the construction and regulation of infectious disease and global health are also essential. This is especially relevant to the case of pandemic influenza; H5N1 was not widely distributed in human populations prior to planning initiatives. Thus, planning for pandemic is primarily concerned with predicting and projecting knowledge onto some future event, and is characterized by considerable uncertainty – to some extent, pandemic is thus constituted through this projection.

2.3 Globalization and infectious disease

Not surprisingly, the emergence of new and re-emergence of old infectious diseases has stimulated consideration of the social contexts framing this trend. One focus has been on the many processes that are often considered as antecedents and consequences of economic globalization. These include rapid and increased urbanization, especially recent ‘Third World’ urbanization, changes in production techniques (e.g., large scale factory farming), and environmental degradation to name a few. For example, the use of prophylactic antibiotics in large scale factory farming leads to an increase in drug-resistant forms of infectious disease. As well, the encroachment of human settlements on previously uncultivated areas is posited as increasing risk of exposure to wildlife infected with novel viruses (Davis 2005). The connection between these processes and the emergence of infectious disease has led to changes in
understandings of health as a global phenomenon, and this is particularly true of infectious disease outbreaks (Sakaguchi 2005; Cohen 2000; McMichael 2004).

Some researchers argue that the increased interdependency of states, resulting from integration into a global capitalist economy, has significant implications for health (Ali and Keil 2008). In part, this is because the global trade and travel crucial to advanced capitalist growth are frequently associated with increasing vulnerability to disease; the desire to maintain the circulation of products and people is thus in some respects associated with unsavory byproducts of this system. A dominant underlying theme in globalization and health discourse is that the increased interconnectedness associated with globalization has led to a heightened vulnerability to viruses emerging and travelling across the globe. This insight has significant consequences for research on the governing of disease at the global level.

In their conceptualization of emerging infectious disease as an urban phenomenon, Ali and Keil (2008) argue that the spread and containment of SARS illustrated the efficiency of global cities as a network for disease transmission. In this respect, the rapid global spread of SARS exemplified a particularly disturbing effect of global connections animated by “material and informational flows...labour market and investment cycles...knowledge and policy transfers, cultural exchange...and the transnational movement of people” (Ali and Keil 2008: 5). The acknowledgment of the ‘border-less’ nature of disease has coincided with a developing global surveillance system engaged in data collection and information networks, functioning less within the domain of national control. This system is simultaneously immersed within the global economy, where the “typical call is for greater collection and management of information in terms suited to surveillance and commercial aims of global information industries” (Lavin and Russill 2010: 75). With increasing focus on the relationship between globalization and disease, nation-states have been increasingly concerned about interconnectedness, understood by some in terms of the self-interest of countries located in the global North (Weir and Mykhalovskiy 2010). This insight is especially salient given that the global South has consistently been framed as the origin of virulent emerging infectious disease (Lavin and Russill 2010).

The processes of interconnectedness associated with globalization are frequently depoliticized in the global health arena and in relation to (re)emerging infectious disease. Craddock (2008) argues that the oversimplified characterization of globalization (in terms of
increasing economic integration, population mobility, and cultural exchange) common to dominant representations of infectious disease under globalization, “not only glosses the complex and uneven processes of global trade regulations, labor inequities, and austerity programs underlying current global burdens of tuberculosis and other infectious diseases; equally importantly, it plays a key role in supporting these processes” (p. 194). Furthermore, these representations place the responsibility for deteriorating health systems resulting from global economic policy on the countries within which this occurs, casting states as culpable for failing to develop adequate surveillance systems. This issue is particularly important to the global control of disease. In her work on militarization and health, Loyd (2009) highlights the contradiction posed by calls from transnational organizations, such as the WHO and the World Bank, to decrease mortality rates through the long-term development of infrastructure in the context of the global economy. She states, “this basic remedy to predictable and preventable deaths is undercut significantly by the dominance of neoliberal regimes that prioritize privatization and marketization over universal provision of water, sewage infrastructure, and health care” (Loyd 2009: 869). This kind of perspective can help clarify the effect of structural violence produced within global capitalism and informs my analysis of the representation of ‘mutual vulnerability’ within a global configuration, presented in the discussion chapter of this thesis.

Calhoun (2004) refers to the ‘emergency imaginary’ that characterizes international affairs under globalization. Intervention into emergencies is informed by understandings of interconnectedness under contemporary conditions, so “reducing crises is a necessary and self-interested goal” (Calhoun 2004: 390). Catastrophes and crises shape the possibilities for intervention into social problems on a global scale, and form what Calhoun (2004) characterizes as an “abstraction that plays an active role in constituting reality itself” (p. 391). In this respect, the emergency imaginary portrays events as immediate, unpredictable, and short-lived, and simultaneously depoliticizes the political and economic contexts that frame the effects of such events. This kind of perspective helps clarify the contradiction inherent in approaches that represent and respond to events in terms of immediacy and unpredictability. In fact, the material effects of crisis events (e.g., environmental disaster, epidemic, terrorist attacks, violent political conflict) are implicated in the persistent historical trajectories of people or populations linked to geopolitical divides. Lavin and Russill (2010) introduce the concept of the ‘epidemiological
imaginary’ as organizing understandings of social problems. They link this tendency to changing arrangements of social space under contemporary conditions, arguing:

[t]he ongoing transformations of meaning and experience of space given the political currents of globalization and the technological advances of communication and travel have…given resonance to an epidemiological imaginary that presumes that spatial analysis and information control offer the keys to so many social problems. (Lavin and Russill 2010: 82)

These perspectives underscore the political nature of the problematization and response to disease and other crises, and help clarify how these phenomena can be understood as global issues. This sort of research also clearly reveals the need to question the conditions within which constructions of social problems, such as pandemic, develop.

*Networks and (Im)Mobility*

Other scholars provide critical perspectives about the prevailing accounts of globalization by examining understandings of increased mobility through recent technological developments, such as air travel. Turner (2007) introduces the concept of the ‘immobility regime’ in relation to sociological accounts of global flows and networks. He argues that the increase in mobile populations corresponds with the emergence of an ‘enclave society,’ regulated by a set of tactics and strategies, and characterized as much by exclusions, sequestrations, and closures as by mobility and circulation: “[i]n such a society, governments and other agencies seek to regulate spaces and, where necessary, to immobilize flows of people, goods and services” (Turner 2007: 290).

With regard to health, national borders of the modern state within globalization become sites of regulation that often intersect with broader political and economic processes. Bashford (2002) argues that an international biopolitics “‘governs the movement, transitions, settlement and repatriation of various populations – including refugees, migrants, guest workers, tourists and students’…[T]his international biopolitics can be seen at work in the governmental conflation of health, immigration and citizenship issues” (p. 349). Similarly, Craddock (2008) argues that, in the regulation of tuberculosis and the related framing of mobility in terms of risk of disease transmission, not all groups are perceived as equal threats. Walters (2006) focuses on the multiple functions of border control in distinguishing between desirable and undesirable mobilities, including the goal of Western governments to “intercept refugees before they have an
opportunity to activate human rights claims within the territory. But they also include a concern to decongest border crossings in the interests of further liberalizing and accelerating circuits of transnational tourism, trade and production” (p. 195). This kind of research captures the complexity involved in regulating mobilities and flows, and especially the differentiation between required and objectionable forms of circulation.

One trend under globalization is toward intensified regulation of borders, but Walters (2006) also points out the changing function of the border. Borders were once a clearly-defined threshold for migration across national and social boundaries, but this form of policing has been partially delocalized, with traditional border control functions (such as those that determine the suitability of mobility) increasingly being relocated away from the border. In this sense, (border) control is fragmented and differentiated and materializes in different sites:

Yet inasmuch as each [locale of control] faces certain commercial and public pressures to bring ‘security’ to its premise and users, to differentiate and manage mobile flows of population, then each thinks its solutions within the coordinates of these methods and technologies. Within this milieu, security becomes something to be marketed: a ‘solution’. (Walters 2006: 197)

The persistence of the border as functioning to distinguish between different kinds of bodies, in addition to its demarcation of the domain of sovereignty and the boundaries of territory, may have shifted in recent times. Walters (2006) describes the changing function of the border as less “a threshold or gateway into a nation/society…as one among many sorting point, nodes within a wider, albeit thinner social space. The territorial and the social no longer coincide as neatly as they once did” (p. 199). These concerns regarding (im)mobility and borders are especially relevant to the research that follows, and I will return to this topic in the discussion in Chapter Seven.

Animal-human interconnections

Within representations of global circulation, animal and human interaction is a primary issue, albeit not explicitly articulated in many accounts. Conceptualizations of animal-human interconnectedness under globalization require further consideration due to their relationship to the threat of pandemic. As mentioned above, the control of disease in animal ‘reservoirs’ is a widely accepted challenge in the prevention of pandemic emergence. The portrayal of pandemic in media and other materials frequently includes representations of the animals deemed as the
original source of disease, as was exemplified by the numerous depictions of the ‘civet cat’ in China and its connection with the SARS outbreak. This kind of representation evokes a plethora of questions involving animal-human relations, for example about the regulation of spaces where human and animal species intermingle. Rock, Mykhalovskiy, and Schlich (2007) emphasize the importance of analyzing the contestation and (re)production of boundaries between animal and human bodies as “animals enter different sites and aspects of health knowledge production” (p. 1973). While under-researched, the conceptualization of ‘human’ and ‘animal’ within the area of infectious disease is particularly pertinent, because many of these diseases are understood as zoonotic (i.e., disease transmitted from animals to humans). These interspecies connections with respect to disease transmission have increasingly become sites of scrutiny, particularly following certain developments in food production techniques that “imply new possibilities for the mutation and replication of infectious agents” (Keck 2008: 199).

The interconnectedness of animal and human species through different forms of food production techniques (e.g., animal husbandry or large-scale factory farming) brings into relief the shared vulnerability of distinct species and exposes these links for the purpose of regulation. New forms of regulation of disease in animal populations pose complex ethical and economic dilemmas. The moral and economic trade-offs between cull, quarantine, prophylactic antibiotic, or vaccination of animals in the regulation or containment of infectious diseases that pose a risk to humans are especially important themes, particularly during epidemics or outbreak events such as bovine spongiform encephalopathy (BSE)/Creutzfeldt–Jakob disease (nvCJD) and SARS (Tiffin 2007). These kinds of interventions can help reveal understandings of the biopolitical, through which key distinctions are made regarding the preservation or denial of life (see Blue and Rock 2010 for an extended discussion of the convergence of production and destruction of species lives with regard to biopolitics). This point will be discussed in further detail in the following chapter, which outlines the theoretical framework of this research.

Tiffin (2007) discusses BSE (commonly known as ‘mad cow disease’) and its human manifestation, nvCJD, with a particular emphasis on its disregard of closely protected boundaries between humans and animals. She suggests that these diseases, implicated in practices of ‘cannibalism’ within industrial farming (e.g., incorporating animal carcasses into livestock feed) provoked a general existential anxiety within Western nations:
Although nvCJD has resulted in so few human fatalities, the challenges it poses to Western epistemology and ontology—quite apart from national economies—have made it disproportionately significant, particularly in a context of general environmental deterioration. Challenging our very self definition as ‘civilized humans,’ it strikes at the foundations of exceptionalism and anthropocentrism, threatening to collapse those ontological and epistemological distinctions between human and animal, savage and civilized, wild and domestic, cannibal and carnivore. (Tiffin 2007:24)

Within the context of disease in general, Thacker (2006) similarly argues that “[n]ot only do the networks of contagion and infection render human agency and control problematic, but, when we take into account all the factors that go into an epidemic, we see as many ‘nonhuman’ agencies as human ones (e.g., viral mutation, bacterial resistance)” (p. 3). Here, the regulation and control of boundaries between animals and humans, or between types of species, extends beyond securing the health of the population; it includes broader concerns about the categorization of life in relation to historical contingencies and global political relations. These issues are highly relevant to my research and will be explored in my discussion of boundaries in Chapter Five.

2.4 Securitization of infectious disease

A related and interconnecting body of literature focuses on what has been termed the recent ‘securitization’ of infectious disease. This work is especially relevant to examinations of pandemic, largely due to its connection to the regulation of uncertainty. Labonte (2008) argues that health as an issue for national security has become the “most dominant discourse” to have emerged in recent years, and “is consistent with nation-states’ often explicit duties to protect their citizens from foreign risk by guarding their borders, whether the ‘invaders’ are pathogens or people” (p. 468). Fidler (2007) traces the permeation of security discourse into public health arenas from the 1990s onwards, suggesting that we are in a ‘post-securitization’ phase in public health governance where “[v]iewing public health through the lens of security has become an integral aspect of public health governance in the 21st century” (p. 41).

Among Western nations, the increasing awareness that infectious disease could pose a substantial threat to the health of citizens and to political and economic stability has in part led to the development of responses to such threats in terms of security. Davies (2008) argues that the WHO has a vested interest in framing infectious disease in terms of security, as the management of this health issue through internationally coordinated surveillance measures legitimizes the organization’s authority in global health governance. She also points out that the WHO has
prioritized the interests of Western states in maintaining security against infectious disease, and that ‘developing’ states are generally excluded from this process.

Regardless of the competing understandings and representations of security, there appears to be a general consensus regarding the legitimacy and authority surrounding the health issues that are framed in such terms, as exemplified by increased investment of political will and resources into health security. While the historical contexts of infectious disease representations are undoubtedly complex, some scholars have suggested that framing infectious diseases (such as HIV/AIDS) in terms of security is the result of well-intentioned motivation to increase political action and investment into eradicating or preventing these diseases (Elbe 2005).

Regulating Uncertainty Through Security

Some recent explorations of emerging infectious disease in Western nations from the point of view of governance, invoke ‘security’ in critical analyses of how uncertainty and danger are currently structured (King 2003; King 2002; Elbe 2005; Ingram 2008a; Ingram 2008b; Cooper 2006). This kind of research clarifies how (national) security issues are aligned with infectious disease governance, and highlights the increasingly blurred boundaries between military security practices (like intelligence surveillance) and global health functions (like infectious disease surveillance), which results in what Ingram (2008b) calls the “discursive slippage between the pathogen of terrorism and the terror of pathogens” (p. 77). In this sense, the current preoccupation with (in)security and the impending materialization of novel infectious diseases is linked with the increased focus on bioterrorism, another source of considerable uncertainty following the events of 9/11 and the subsequent ‘anthrax terrorist attacks’ in the US. Given the historical role of public health in managing so-called difficult populations, which often coincide culturally with racialized and economically and politically marginalized groups, it is perhaps not surprising that public health measures would become an important technology in the control of bioterrorism as a novel source of insecurity and transgression (King 2003). For example, Craddock (1995) details the scapegoating of certain racialized, and politically and economically marginalized, populations in relation to smallpox outbreaks in the US in the 19th century.

Hooker and Ali (2009) frame what has been called the securitization of emerging infectious disease (SARS, in particular) in terms of the ‘new normal,’ in which a “coherent set of
discourses and practices…construct the world as newly insecure” (p. 101). They argue that the new normal represents a specific way of responding to the uncertainty within contemporary conditions; it relies on the neoliberal policies of individual responsibility and autonomy, along with neoconservativism that “justifies the reimposition of authoritarian government in order to maintain security” (Hooker and Ali 2009: 121). This observation has further implications in light of the theoretical framework outlined in this dissertation, which elaborates on Foucault’s notion of biopower and the concurrent regulation of the individual and the population. My research interprets understandings of infectious disease governance as co-constituted with broader configurations of security in contemporary contexts, in addition to the conditions of insecurity and crisis, as a modality particular to recent times. Hinchcliffe (2009) also discusses the WHO global pandemic preparedness plan in relation to the “‘new normal’, with unknown viruses making up the reservoir of potential pandemic forms...this is the state of continuous alertness” (p. 8). However, these observations require further elaboration with respect to how they emerge, and develop, within pandemic planning documents.

In his discussion of infectious diseases and security, Ingram (2008b) posits that the shift towards securitization is also intimately connected to the erosion of seemingly discrete and stable boundaries, such as national borders, as a result of processes associated with globalization. While the relationship between disease and nationhood is by no means a novel concern, the context in which previously distant global regions are closer than ever before and the association of disease with current forms of movement, such as migration and communication, introduce unique problems with respect to control and containment (Ingram 2008b; Ali and Keil 2006). Representations of increasing global interconnectedness brings into sharp relief the ‘mutual’ vulnerability shared by individual nations. While the securing of biological matter involves a vast array of issues and practices, the regulation of movement or circulation of bodies and things is a primary concern (Hinchcliff and Bingham, 2008). King (2003) argues that “[b]ioterrorism is a focal point of American anxieties about globalization, demonstrating the difficulty of maintaining security amidst global transportation and information networks” (p. 439). Thus, concerns surrounding bioterrorism and globalization intersect in numerous ways, not least of which includes the issue of circulation; this will be addressed further in the following chapter, which focuses on theory.
The reconceptualization of infectious disease in terms of security, and the corresponding conflation of infectious disease control with bioterrorism preparedness, likely reflect some similarities between the two uncertainties: “Terrorism…is amorphous and transnational in nature, without recognition of borders, and therefore it resembles infectious diseases…terrorism, infectious disease, and national security are difficult or nearly impossible to separate as unrelated issues” (Sakaguchi 2005: 1164). Fidler (2007) suggests that forms of terrorist violence do not easily correspond with the traditional militaristic endeavors of the nation state. From this perspective, terroristic violence relocates the threat of the hostile, sovereign nation state to an internal territory or place, confounds traditional means of controlling this peril, and relocates security threats as possible internal phenomena. Some scholars, including Hooker and Ali (2009) refer to the well-established relationship between national security and concerns about disease, but also suggest that the ‘new normal’ represents the most recent form of the problem of security for liberal governance. Hooker and Ali (2009) argue that infectious disease control under globalization “has been a primary mechanism for the reassertion of state power and of some forms of national identity” (p. 121). At the same time, global infectious disease regulation has further implications for the rising authority of transnational organizations such as the WHO (Weir and Mykhalovskiy 2010).

Much of the research described in this chapter acknowledges that while an understanding of disease from a security perspective is not novel, its predominance within contemporary global political and economic configurations accords it importance and legitimacy in scholarship. Lakoff (2007) describes the origins of simulation and scenario planning as preparedness techniques against security threats in the Cold-War era US, but King (2003) argues that the increase in focus on bioterrorism following the events of 9/11 “presents an historically specific assemblage of risks and responses” (p. 433). King (2003) also notes that the historical roots of these events were continually obscured in the US response, which was based on the perception that “the world changed that day” (p. 433). While the connection of security and infectious disease regulation historically pre-dates the events of 9/11, these occurrences have further legitimized the technologization and militarization of public health practices in the management of infectious diseases (Monahan 2006; Cooper 2006; Ingram 2008a; Ingram 2008b). Evidence also supports a reallocation of resources where, for example, the funding of pre-emptive biodefence within local and state health departments in the US has led to the considerable
The research discussed in this chapter reveals that the treatment of a possible bioterrorist attack in the US, and elsewhere, is increasingly conceptually compatible with the advent of an infectious disease outbreak. This is not to suggest that infectious disease and terrorism are interchangeable phenomena, but both involve complex and, in some ways, mutually constitutive understandings of interactions between different, and differently imagined, borders. Examples of these borders include divides between the global/national/local, the external/internal, sick/healthy, and the vulnerable/resilient. Furthermore, representations of these phenomena (terrorism and infectious disease) generate considerable uncertainty with respect to key features, such as the origin or the extent of damage experienced. This uncertainty presents particular dilemmas for the governing of emerging infectious disease and pandemic, which are the focus of my own research.

**Effects of Securitization of Infectious Disease**

The discourse of securitization in the management of infectious disease has broad implications. King (2003) suggests that historical knowledge of disease and social inequality, in which disease is experienced differently by marginalized social groups, should stimulate important discussions about the possible disadvantage, stigmatization, and discrimination that may result from the securitization of health risk. Like the concept ‘risk’ (which has come under considerable scrutiny in some health research with respect to its individualizing effect; see e.g., Crawford 1977 and Lupton 1999b), disease as a threat to security has similar consequences in terms of invoking a specific kind of neoliberal citizen-subject who is responsible for the health of their family, their community, and the nation. Monahan (2006) proposes that while this “neoliberal trend in governance predates the ‘war on terror’…[w]hat has changed since September 11 is the militarization of government agencies and the active enlisting of individuals as the first line of defense in securing the homeland” (p. 98).

The US response to avian influenza as a threat to security has been framed in terms of its tendency toward ‘moral panic’ propagated by the media and government. Monahan (2006)
argues that in this neoliberal period of declining government intervention, which is linked with the individualization of civic and humanitarian duty, “an amazing exception to this rule has been afforded for the Department of Defense to stockpile vaccines at a public cost (and private industry profit) of eight billion dollars” (p. 101). The urgency underlying representations of the impending threat has no doubt contributed to the legitimacy of substantial investment into military and technological responses. Thacker (2006) notes that the official linking of bioterrorism and emerging infectious disease in the US highlights the consequences of what this connection “enables in the way of public health practices” (p. 4). In the context of the blurred boundaries between responses to pathogens that are purposefully introduced and the multiplicity of emerging infections, Thacker (2006) argues, “[d]istinctions in cause are effaced by the biological latency of the disease-causing agent, a latency that is also social, political and economic – precisely because it is biological” (p. 4). The particularities that distinguish human-introduced pathogens versus ‘naturally’ occurring, emerging infections are thus overwhelmed by the agency ascribed to the ‘disease-causing’ agent, as intrinsically invisible but simultaneously present; in other words, existing as potential. This finding is linked to my own research about the representation of the ‘latency’ of the influenza virus within WHO planning documents, as will be discussed in Chapter Five.

In the current context, the alignment of securitization with neoliberal policy may not be an entirely fixed connection. Appeals to the individual’s responsibility in minimizing risk and optimizing health are frequently used as a key configuration in the retrenchment of the welfare state, which had previously safeguarded citizens from the negative effects of market dynamics, and the consequent decline in protection of citizens through reduced investment into certain programs. The neoconservative agendas in the US that have largely promoted securitization do not reflect a reduction in state spending generally – in fact there has been an overwhelming investment of public funds into security agendas – but simply a redirection toward a more specifically militarized operation. In this regard, the neoconservative agenda is characterized by a redirection of state spending and involvement in military practices which may or may not coincide with traditional neoliberal agendas that reallocate state involvement away from social programs. Either way, this configuration represents a departure from previous arrangements in terms of the extreme level of spending and speculative investment in the service of national defense.
The enlistment of citizens in ensuring national security relies on the discursive construction of an amorphous Other as a threat. Similar to the terrorist targets of the ‘War on Terror’, such threats involve considerable boundary-related efforts, with a symbolic reconstitution of national and other borders following a perceived transgression (Butler 2006). Ingram (2008a) argues that security discourses related to disease are based on:

a preconceived and stereotyped array of subjectivities: the entitled and unentitled; good citizens and the enemy within; innocent victims (whom we unfortunately cannot accommodate) and willful and predatory deceivers (whom we must exclude). Security is to be achieved via the assignation of people thus defined to proper locations in space. (p. 889)

While the propagation of these values and ideas may not always be explicit, the framing of infectious disease in security terms (and its subsequent threat to nation and other imagined unities) represents deeply embedded cultural judgments about difference and the understanding of disease as originating ‘elsewhere.’

Analyses of the intersection between discourses of securitization and broader political and economic motivations can help clarify the governance of infectious disease in contemporary contexts. For example, some research demonstrates that specific conservative political groups in the US used the uncertainty and anxiety surrounding the H1N1 pandemic for their own agendas. Singer (2009) argues that these agendas target national border control, legitimizing “a platform to attack ‘illegal aliens’ for being responsible for carrying the disease across the Mexican border and infecting innocent Americans” (p. 203). This kind of agenda also reveals the potential for the conflation of ‘infected’ individuals with other bodies that are framed as sources of insecurity and represent a threat to the imagined homogeneity of the nation.

Puar and Rai (2002) used Foucault’s concept of “monstrosity as a regulatory construct of modernity” to shed light on questions of sexuality, race, and culture in relation to the American ‘War on Terror’ (p. 119). Drawing a parallel between the heteronormative understandings of terrorism in relation to the nation, the authors underscore the “dual process of incorporation and quarantining” through which certain bodies and practices (aligned with culture, sexuality, or race) are excluded in their link to the ‘other’ while other aspects of these subjectivities are incorporated “into the body of the normalized nation” (Puar and Rai 2002: 126–7). Here, the portrayal of the ‘monster’ and its control through quarantine and correction points to the
regulation of certain bodies and the circulation of these bodies in relation to the construction of ‘nation.’

Another important issue for understandings of the securitization of disease involves the role of economic security in framing infectious disease governance. The interconnection between the ‘novel’ governance of infectious disease and contemporary neoliberal economic agendas can be seen in the labeling of border restrictions to prevent pandemic, in trade protectionist measures, and in market speculation for technological production such as vaccines and pharmaceuticals. This conceptual framework can help clarify possible tensions between the desire to maintain free trade and market control (under certain regional trade agreements such as the North American Free Trade Agreement) and the need to reduce security threats that cross borders – in other words, the need to distinguish and regulate desirable versus undesirable border crossings. This will be a key theme in my discussion chapter.

The expansion of the concept of insecurity through multiple domains (e.g., military, disaster management, or public health) has increased significantly within a post-9/11 environment (Monahan 2006). Cooper’s (2006) work on the conflation of public health and biodefense agendas in the US reveals how mobilization against infectious disease can be interpreted in terms of a ‘pre-emption of emergence’ that prepares for the unknown or unknowable, the unrealized, and the emergent. With respect to this new configuration of security threats, Cooper (2006) argues that “[w]hat it provokes is...a state of alertness, without foreseeable end. It exhorts us to respond to what we suspect without being able to discern; to prepare for the emergent, long before we can predict how and when it will be actualized; to counter the unknowable, before it is even realized” (p. 120). Like Monahan (2006), Cooper (2006) connects the pervading militarization of the politics of life to the context of neoliberalism, which seeks “new forms of speculative capitalization” within these sites (p. 129).

One example of how this speculative capitalization relates to pandemic planning is in the ongoing research and development of vaccines that target a potential pandemic strain. Elbe (2010) analyzes how the ‘securitization’ of highly pathogenic H5N1 has contributed to the development of ‘virus-sharing’ disputes between ‘developed’ and ‘developing’ nations, with a specific focus on the case of the Indonesian government’s refusal to share influenza viral strains with international surveillance networks. He argues that H5N1 was framed politically as an
‘existential’ threat requiring action beyond normal procedure (to him, a defining feature of securitization), thereby providing opportunities for political bargaining by countries such as Indonesia, which were otherwise unable to compete in the context of the emergency-induced stockpiling of vaccines and other resources and increased vaccine production. As a securitized health issue, demand for a pharmaceutical response to influenza increased substantially, which coincided with limited supply and created a situation in which countries with the greatest ‘buying power’ had access to these products.

The inequality inherent in the global economic context within which these processes occurred spurred Indonesia – a nation with access to the valuable viral strains coveted by surveillance networks and pharmaceutical companies – to leverage their possession of these biological specimens in order to make a point about unequal access to life-saving or enhancing technologies. Analysis of this kind of situation is important, because among other things, it illustrates the agency or performance of sovereignty by states that are in many ways disenfranchised within the global political and economic context. Wishnick (2010) uses a similar analysis of securitization in her research about SARS and avian influenza in China, arguing that the response to these diseases signified a break from normal procedure. She argues that use of securitization as a reactive mobilization against disease contradicts previous ‘risk management’ approaches to disease founded on a preventive logic. Her interpretation raises questions about approaches to pandemic, which are linked to the discussion of ‘risk’ and ‘preparedness’ in the next chapter.

This discussion of securitization highlights the discursive construction of infectious disease and the role of risk in the regulation of the population. My intent is not to assign a level of internal stability or coherence to the discourse of security, or to suggest that this is an uncontested framework. Instead, security discourse within public health is important in providing a portal into the operative logics, dynamics and contradictions that characterize questions of public health governance. My objective is to explore its complex, and sometimes conflicting, relationships with a range of political agendas. Furthermore, while understandings of infectious disease in terms of security (and the connection of public health agendas with those of security) have existed prior to the last ten or twenty years, the connection of security to activities that aim for preparedness in pre-empting the ‘emergence’ of disease is, arguably, unique.
2.5 Conclusion

The ‘problem’ of security in governance lends itself well to the current techniques of regulation that are evident in pre-emptive strategies to manage the health of populations in the event of an emerging infectious disease outbreak. Such techniques include surveillance systems that direct attention towards population characteristics and span global, rather than national, territories. Where these strategies aim to regulate insecurity in the context of emerging infectious disease, I suggest that the implications of securitization for the field of global public health require further inquiry. The value of determining criteria for prioritizing certain health issues in security terms is indisputably salient in current governance contexts. However, the above discussion indicates that the dominance of securitization in public health discourses should not be taken as a given and further naturalized through unquestioning acceptance of the idea that globally we are in a post-security phase. Instead, there should be space for critical investigations into conceptualizations of security and its relevance to infectious disease that consider the political and economic contexts within which health issues are framed as security issues. In this light, it is not simply that security issues are politically contested concepts, but that this framing of disease in terms of security represents specific knowledge that constructs experiences, intersects with agendas that are seldom made explicit and, to some extent, conditions the field of governance within which disease occurs.

This research seeks to interrogate the knowledge underlying governance techniques that aim to regulate and control emerging infectious diseases. In this way, I aim to examine the construction of ‘pandemic influenza’ as a social problem within global governance and, accordingly, the proposed solutions to this problem. I take the perspective that the conceptualizations and initiatives undertaken with the objective of ‘improving global public health’ must be analyzed for the underlying power relations and symbolic significations that they both reflect and (re)produce. My work reflects a commitment to exposing the constructed nature and political character of knowledge and investigation that frequently go uncontested in the public health field, in order to highlight the potential effects of this knowledge and to challenge the supposed neutrality and legitimacy of health governance. The critical approach taken involves the contestation of meanings within the field of infectious disease governance as ‘natural’ or ‘self-evident’. This entails an analysis of the underlying values and knowledge reflected in, and reproduced through, this field, where claims to ‘truth’ are discursively produced.
and implicated in particular arrangements of power relations, and have specific effects. From this perspective, the progression of emerging infectious diseases as a salient social problem worthy of investment is examined through the instruments of pandemic influenza governance. In light of concerns arising within the international community regarding whether the H1N1 influenza outbreak actually constitutes a pandemic, I should state that my interest in this research is not in questioning the ‘real’ existence of a pandemic. Instead, it involves the interrogation of its rising prominence as a social ‘problem’ requiring governance at numerous levels. With this in mind, I embark on an analysis of pandemic influenza planning as a particular exemplar of the response of preparedness which targets the ‘emergence’ of an unrealized infectious disease outbreak.
3 Theoretical Framework

This chapter describes the theoretical concepts that I used to frame my interpretation of infectious disease and pandemic within the context of a “global biopolitics”. First, I introduce Foucault’s work on biopolitics and then explore how this relates to the concepts of risk and risk governance in the health field. Next, I extend the framing of risk to introduce the less developed concept of preparedness as a possible novel rationality in governing uncertainty. Following this discussion, I briefly expand on the significance of ‘security’ in Foucauldian-informed scholarship on biopolitics, and highlight the notions of ‘contingency’ and ‘circulation’ as key to my investigation of global pandemic preparedness. Finally, I examine the Foucauldian conceptualization of ‘race’ in relation to a global biopolitics, particularly in terms of its importance for understanding the effects of differentiation and exclusion under current global biopolitical configurations. The chapter concludes with an outline of a number of theoretically-informed research goals.

3.1 Biopolitics

This research draws upon the Foucauldian conceptualization of biopolitics, where biopower represents the generalized configuration of modern power that focuses on the administration of life. In this sense, biopower joins two constitutive axes in the conceptualization and organization of power over life. The first axis refers to the focus on the individual body as the target of control, while the second refers to the biopolitics of the population. In this research, I will be focusing on the second, the biopolitics of the population. While Foucault’s earlier work addresses the disciplinary functions of power exerted on and through the individual body (anatomo-politics), biopolitics refers to new technologies of power occurring at the level of the social body. In contrast to the first pole, biopolitics secures as its target “the species body, the body imbued with the mechanics of life and serving as the basis of biological processes...[t]heir supervision was effected through an entire series of interventions and regulatory controls: a biopolitics of the population” (Foucault 1980a:139).

Thus, biopolitics addresses the population as a political problem and represents the vital, biological characteristics of the population as the object of political strategy (Foucault 1980a; Foucault 2003). Biopolitics takes up the biological processes of the ‘human race’ at the level of
their generality, using demographic and epidemiological statistics as first the objects of knowledge and then the target of control. In this sense, the population is an abstraction and the invention of techniques of governance homogenizes political subjects with respect to key demographic features (Weir 2006). In Foucault’s work, biopolitics was largely conceived of in the transformation of sexuality into an objective and effect of knowledge: “Sexuality is a regime of power and knowledge that develops within institutions and practices that aim to harness the strength and developmental potential of human bodies and put them to use in industrial production and technological warfare” (McWhorter 2004:40). In this interpretation of sexuality within the biopolitical state, the target and effects of discourse are inseparable from the economic and social contexts (e.g., industrial capitalism) within which they function.

The phenomena that are considered at the population level – mortality, fertility and birth rates for example – are those that “are aleatory and unpredictable when taken in themselves or individually, but which, at the collective level, display constants that are easy, or at least possible to establish” (Foucault 2003:246). The intervention into biological characteristics which have certain discernible patterns at the collective level is enacted with the purpose of securing an optimal state of life in populations. In this way, the main objective of the biopolitical state is the security of the population (in terms of health and economics) and is to be achieved through intervention into vital characteristics of this population (Inda 2002). It is largely this objective, the extension and enhancement of life, which lends this arrangement of power its authority and legitimacy.

There are a number of elements inherent in biopower, as presented by Rabinow and Rose (2006), which entail the role of knowledge in framing interventions on the social body:

Biopower…entails one or more truth discourses about the ‘vital’ character of living human beings; an array of authorities considered competent to speak that truth; strategies for intervention upon collective existence in the name of life and health; and modes of subjectification, in which individuals work on themselves in the name of individual or collective life or health. (P. 195)

In this conceptualization, biopolitics is concerned with “the second level of biopower: strategies and contestations over interventions in human vital events” (Weir 2006:8). As Weir (2006) notes, this conceptualization of biopower unites the power over individuals and the population in its connection through the norm, and normalization involves the production of subjects according to the authority of knowledge represented by techniques such as developmental curves in
understandings of sexuality. At the same time, there has been criticism of the intensive focus on the subjective effects of biopower, especially in health research. Weir (2006) contends that there is a need for greater attention to the power over population health, where “risk governance is…all too often conflated with self-governance of the neoliberal subject, a move that occludes risk at the level of the population, epidemiology and public health” (p. 9). As stated and in accordance with this sentiment, my research will be focused primarily on the functioning of power at the level of the population and its connection to risk will be further explored below.

More recent interpretations of biopower focus on the regulation of the self through examination of the ‘molecularization of life’ (Rose 2001) or ‘risk governance’ (Petersen and Lupton 1996). Like the neoliberal conditions discussed above, they, too, tend towards more individualized understandings of the politics of life at the expense of analyses of a population-centred biopolitics (Weir 2006; Raman and Tutton 2010). Braun (2007) suggests that analyses of the governing of life at the molecular level require attention to more than just the individualized subject positions made possible by new technologies of the self. As Raman and Tutton (2010) observe,

contemporary truth discourses about life contain a hybrid of molecular and population categories...[m]olecular discourses around microbiology and immunology are also being enrolled in the construction of population-based interventions by nation-states and transnational organizations of governance. (P. 722-3)

Thus, the role of the molecular in governing biosecurity threats such as pandemic represents new topographical complexity in understandings of biopolitical regulation (Braun 2007; Hinchcliffe 2009). With this in mind, the examination of pandemic preparedness according to a population-centred analytic of global biopolitics is critical, especially because its operations extend far beyond the nation-state to encompass a complex global network of agencies or bodies, official and otherwise, engaged in the process of enhancing life. Pandemic planning is one part of contemporary biopolitical regulation, where the WHO is a key figure in advising on interventions geared towards national preparedness, at the same time as it has become increasingly focused on preparedness that transcends national borders, through regional preparedness, for example.

In line with the discussion of animal-human interconnectedness in the previous chapter, some authors consider the role or construction of the non-human within contemporary analyses
of biopolitics. Blue and Rock (2010) introduce the concept of ‘trans-biopolitics’ to frame consideration of analyses of power in critical theories of health that focus on the “complexity in the intermingling of animal and human bodies” (p. 353). In this respect, trans-biopolitics extends Foucauldian understandings of biopolitics to incorporate the contemplation of interspecies relations and “emphasize that the bodies and lives at stake in contemporary times are multiple, manifold, more-than-human, and not easily contained by species-specific analytic frameworks” (Blue and Rock 2010:355). This analytic and theoretical approach is fundamentally concerned with the creation and transgression of boundaries in the contemporary era, with respect to key elements such as spatial and temporal dimensions, as well as technological and global contexts – processes which create truly hybrid bodies. Similarly, Thacker (2009) describes “biopolitics as the attempt to govern life conceived as an anonymous, unhuman phenomenon of circulation, flux and flow” (p. 135).

Although the connection is not always made explicit, contemplations of animal-human or interspecies relations within the realm of the biopolitical frequently allude to the ‘environment’ – however defined, whether in terms of global-economic, political, technological, ecological and so forth – in explanations of increasing occurrence of zoonotic disease. Such acknowledgements are indirectly concerned with the ‘milieu’, or space-between, as a prime site of circulation and flow. Foucault (2003) points to the ‘milieu’ – the socially constructed environment of the population, that space between bodies and bodies, bodies and objects – as the target of regulation. Armstrong (1983) discusses social spaces, where bodies meet and interact, as a target of control within this biopolitical framework: “Disease was constituted in the social body and it was the social movement of the disease, as it traversed that body, which had to be observed, monitored and interpreted, thereby establishing by its analysis the very existence of that same social space” (p. 18). The traversal of disease through the social body implicates a wide range of bodies, human and otherwise, and spaces in the regulation of disease and simultaneously constructs that space in relation to the progression and monitoring of disease.

These theoretical considerations are important for my results chapters and discussion that follow. Within this framework, we can conceive of the biopolitical regulation of pandemic as one particular, interrelated example among the “multiple politics of life” (Raman and Tutton 2010) that characterize interventions into the vital characteristics of the global population. The
framework that I develop below considers the exclusions that transpire within these biopolitical configurations, an important task given the stark inequalities in global health outcomes.

3.2 Risk

Within the frame of biopolitics, ‘risk’ is a key technology in the governance of populations, specifically the health of populations. In this respect, risk represents both a form of reasoning and a means of operationalizing the rationality of the regulation of populations (Weir 2006). As Rose suggests, contemporary biopolitics involves “a variety of strategies that try to identify, treat, manage or administer those individuals, groups or localities where risk is seen to be high. The binary distinctions of normal and pathological…central to earlier biopolitical analyses, are now organized within these strategies for the government of risk” (Rose 2001:7). This entails the identification of potential ‘risk factors’ for acquiring infectious diseases that frequently allude to ideal social relations. The reference to the monitoring of social spaces and interconnections again draws attention to Foucault’s notion of the regulation of the ‘milieu’ mentioned above.

The concept of risk extends conceptualization and territory for intervention into health and disease beyond the narrower framings of illness as deviance from the ‘norm’; instead, “it is enough to display whatever the characteristics the specialists responsible for the definition of preventive policy have constituted as risk factors” (Castel 1991:288). The determination of these sites of risk is epitomized in public health by systems of surveillance that use epidemiological techniques to categorize groups and places, through scientific criteria aimed at pre-detection and based upon ‘abstract factors’ that indicate the probability of future abnormality (Castel 1991; Petersen and Lupton 1996). Such an approach functions to control the future based on calculations of probability in the present (Rose 2001). The projection of risk into a future probability through calculus transcends the binaries of sick/healthy (bodies at risk are neither sick nor healthy) and thus uncovers multiple sites and possibilities for the target of intervention (Weir 2006). With respect to health, the threat of disease is extended beyond the individual body to characterize populations which also frequently results in the pathologizing of space associated with risk populations and behaviours (Foucault 1980b; Harris 1999).

Under this theoretical framework, technologies of risk are diverse in terms of their political functioning and effects, and operate in support of, or in opposition to, a wide variety of
The study of risk governance takes as its focus “the technical reasoning of expertise inside and outside the state, extending across multiple sites…Governance is a mobile political technology that passes below, through and across the institutional and territorial divisions of the state” (Weir 2006:11). Furthermore, Weir (2006) emphasizes the “heterogeneity of risk techniques and their effects”, where diverse systems of knowledge represented by expertise do not necessarily propagate risk as is frequently suggested in work on risk governance (p. 5). Instead, expertise has also in certain circumstances functioned to constrain and obstruct the spread of risk. Similarly, the frequent conflation of contemporary operations of risk with (neo)liberal agendas, where the individualization of responsibility for risk is represented as serving these political affiliations through the reduction of centralized government, is also a misrepresentation; risk as a technology of securitization has additionally supported authoritative agendas and serves security in ways that are particular to the complex in which it is enacted (Weir 2006).

As a theoretical frame, biopolitics has much to contribute to analyses of the governance of (re)emerging infectious diseases, especially in relation to risk techniques that attempt to forecast and pre-empt the future occurrence of disease. Such techniques deal primarily with the aleatory or uncertainty that is key to Foucault’s work and risk governance. If emergence discourse represents a progression into a permanent state of preparedness which justifies certain pre-emptive measures in the name of defence, then a consideration of what it is that is being defended (against) may provide some insight into contemporary biopolitical arrangements.

3.3 Risk or preparedness? New rationalities in governing the uncertain

Lakoff (2007) positions ‘risk’ and ‘preparedness’ as distinct forms of security rationale in contemporary settings. He contends that “‘preparedness’ as a form of rationality” differs from (insurance) risk as a rationale in the governing of uncertainty (p. 247). In the context of Ewald’s work on the insurantial form of risk technologies, Lakoff describes risk in terms of the application of probabilistic techniques to determine the nature and likelihood of an event occurring. Insurance takes risk as natural and transforms risk within a “technical frame of calculability” in order to address pertinent questions surrounding the distribution of risk (p. 250).
Also different from insurance, the logic of precaution in the face of uncertainty seeks to prevent the potentially catastrophic event from occurring in its entirety.

The rationality of ‘preparedness’ differs fundamentally from risk and precaution in its objective and actualization. Under preparedness, a series of apparently dissimilar forms of occurrences have been organized under the same security framework (e.g., climate change effects, environmental disasters, and epidemics). This form of security rationale no longer aims at preventing or distributing risk:

Instead of constraining action in the face of uncertainty, preparedness turns potentially catastrophic threats into vulnerabilities to be mitigated. Both insurance and preparedness are ways of making an uncertain future available to intervention in the present, but they demand different types of expertise, and they call forth different forms of response. (Lakoff 2007: 253)

In relation to the declining significance of risk as a calculable phenomenon in the regulation of populations on different scales, Hinchcliffe (2009) states that “[w]hile risk talk deals in repetition and pattern, current security talk is not so much about probabilities and insurance, but potentials and resilience” (p. 5).

In his discussion of risk in the context of mad cow disease, bird flu and food safety in France, Keck (2008) distinguishes between prevention and precaution as two rationalities of risk. Within this work, prevention is characterized by veterinary surveillance networks in order to intervene and reduce risk of transmission in animal populations, and is thus based on a trust in the capacity of knowledge to regulate the animal population. In contrast, precaution “implies a space of action based on the limitation of knowledge” (p. 211). Thus, precaution can be invoked when a limited amount of knowledge exists and further research is needed about the area. In a discussion of H5N1, Keck (2008) states,

[to] foresee the epidemic means both to prevent its emerging forms and to prepare for its catastrophic effects...In this new rationality of risk, precaution is not out of the game, but becomes a necessary step between prevention and preparedness...Rather than replacing precaution, preparedness orients it toward a horizon of responsibility that is infinitely opened to the future. (P. 213)

Due to the nature of catastrophic incidents such as nuclear accidents or pandemic, the organizing logic of preparedness is geared towards the mitigation of the effects of such events through the maintenance of “ongoing capability to respond appropriately” (Lakoff 2007: 254). While preparedness is an ongoing and permanent process, the actual period of direct intervention
is limited to the time span of the event. In this respect, preparedness is concerned with the operation of scenarios and simulations in order to determine points of vulnerability (or readiness) with respect to a range of multiple, non-specific forms of threat, rather than the actual prevention of such threats. Lakoff (2007) contrasts preparedness with population security with respect to the objectives and aims of each. In comparison with preparedness, he argues, the function of population security includes the undertakings of public health and welfare provision which are essentially interested in the “conditions of existence of the population” as a political problem (p. 271). In contrast, “for preparedness the key site of vulnerability is not the health of a population but, rather, the critical infrastructure that guarantees the continuity of political and economic order. If population security builds infrastructure, preparedness catalogs it and monitors its vulnerabilities” (Lakoff 2007: 271).

Lentzos and Rose (2009) discuss the distinction between risk and uncertainty that has been made in relation to contemporary understandings of security. In this context, risk invokes a present to be acted upon through inference and probability. In contrast, uncertainty implies a lack of knowledge and a way of calculating the future that involves emotion or experience over ‘law-like’ probability. The authors respond to these differentiations with the following thoughts:

Perhaps then what has changed, if anything, is the configuration of modes of calculation employed in rendering the future into the present. Contemporary logics of security are certainly attuned to uncertain and multiple potential futures that do not operate according to statistical, probabilistic or epidemiological rules. But, while it is true that their attention to uncertainty poses problems for rationalities of risk management, nonetheless these uncertain futures must be rendered thinkable, prepared for and pre-empted or mitigated. (Lentzos and Rose 2009:236)

Following this meditation, the authors make the important observation that just as rationalities of risk enable profitable intervention through particular modes of calculation, uncertainty can also be capitalized upon.

In a similar vein, Weir and Mykhalovskiy’s (2010) work on a global infectious disease control as a ‘global emergency vigilance apparatus’ conceives of ‘risk’ and ‘vigilance’ as “separate techniques of foresight” (p. 9). The authors claim that while risk technologies operate through a “predictive calculation of probabilities”, vigilance apparatuses, are not intrinsically calculative – though they sometimes are – as they aim to identify the specific, suspicious event that is distinguished from a background of prior data. Vigilance apparatuses operate through exhaustive sensitivity, whereas risk systems act by
estimating the likelihood of unwanted future harms based on the calculation of probabilities. (Weir and Mykhalovskiy 2010:9)

In the context of global infectious disease, vigilance aims at detection, alert, and response mechanisms, and represents a form of control that is not necessarily geared towards prevention. In light of these distinctions and contemplations, and given the foundational objective of ‘preparedness’ in pandemic influenza planning, my research will further interrogate the relationship between technologies of risk and preparedness in the context of global pandemic governance.

3.4 Biopolitics and security

As stated, the primary objective of the biopolitical state is in achieving security for the population in health, economic and other realms. Furthermore, ‘risk’ and ‘preparedness’ are identified as a key technology in the governance of the population and the achievement of security. Specifically, in the regulation of infectious disease, risk locates animals, objects, behaviours, people and places that are thought to threaten this security, and invokes a range of social technologies (e.g., surveillance systems, airport screening, health promotion strategies) in order to manage these risks. At the same time, the discourse of securitization has become increasingly acknowledged in its role in the framing of global health, and particularly infectious disease. The understanding of infectious disease within the paradigm of security introduces a variety of questions regarding the characterization, regulation and implications of risk in contemporary contexts.

Intersecting with the acknowledgment of a growing conflation between public health concerns and those of national and international security discussed in Chapter 2, is a line of scholarship founded on Foucault’s work on the apparatus of security in relation to the politics of life. It draws on Foucault’s later lectures on security, and acknowledges the implementation and development of an array of novel strategies with which to govern the aleatory features of the population. Only some of this scholarship is directly health-related in focus, but it all has implications for health research in its focus on the political organization of life. For the purposes of this theory chapter and my thesis more generally, I will further discuss the concepts of ‘contingency’ and ‘circulation’, developed in this work on apparatuses of security. The notion of contingency is significant to my work given the considerable uncertainty inherent in the problem
of emerging infectious disease. As well, the regulation of circulation, often through contingency measures, is a central feature of deliberations of biopolitics in relation to emerging biosecurity threats.

Security and Contingency

The concept of contingency is an important theme within conceptualizations of bio-security and has significant implications for the regulation of uncertainty under apparatuses of security:

Contingency is not arbitrary chance. It represents a complex discourse – set of truth-telling practices – about the knowledge of uncertainty. In retrospect, we can therefore see that the question of contingency, or ‘the aleatory’, arises for Foucault as one of those factual elements or ‘natural’ processes to which liberal governmentality must attend, with which it must deal and in relation to which it has to regulate and evaluate its own performance and effectiveness in its ambition to exercise power over life. (Dillon 2007, 45).

Thus, the importance of contingency is intrinsic to investigations of contemporary biopolitics as it is a logic or organizing principle that is necessarily invoked through the governing of the ‘aleatory’ or uncertain. Lentzos and Rose (2009) differentiate between disciplinary and security interventions in a number of ways, with a specific focus on the logic of security interventions as anticipatory and pre-emptive. In this regard, they draw attention to the focus on preparedness as a means of intervention into ‘undesirable futures’ in order to pre-empt their occurrence. In their work, examining national configurations of biosecurity, the authors analyze distinct political rationalities ‘governing bio-security today’ including contingency planning (p. 238).

Accordingly, “[e]ach represents a slightly different strategy for reconciling liberty and security without destroying the intensified and extended mobility, flow and circulation of persons and things upon which contemporary freedom is seen to depend” (p. 246). The role of contingency is largely in addressing the unknown within forms of regulation that have as the main objective the continued circulation of matter required for maintaining social and economic functioning.

In this respect, response mechanisms that are contingent upon something that may potentially occur in the future recasts the unpredictability of that future, in the light of predictability, intervention and profit: “From a biopolitical perspective, contingency is underwritten through a whole variety of calculative practices...Securitising financially is a classic biopolitical strategy which capitalises ‘life’ by translating contingency into risk and risk into a
tradable asset” (Dillon and Lobo-Guerrero 2008). This work frames contingency as integral to understandings of security that draw from Foucauldian theory. This concept is an inherent feature of contemporary targets of governance (i.e., ‘life itself’): “[t]he growing concern with security represents a political response to the indeterminate, contingent, and aleatory character distinctive of the ‘molecular vision’ of the biological body” (Caduff 2012; 343).

Security and Circulation

Although it is not always the explicit focus of work on biopolitics and security, the notion of circulation is central to this theoretical approach to infectious disease and other targets of security. Apparatuses of security and notions of freedom, with respect to circulation, are fundamentally linked within Foucault’s theoretical work. In this sense, security only operates on the condition that it is given freedom in terms of the movement or circulation of people and things (Lentzos and Rose, 2009). As Thacker (2009) states in his meditation on the conceptualization of ‘bios’ in biopolitics,

...the primary challenge to biopolitical modes of power is this: how to acknowledge the fundamentally unhuman qualities of life as circulation, flux and flow, while also providing the conditions for its being governed and managed. Biopolitics in this sense becomes the governance of vital forces, and biopolitics thus confronts what is essentially a question of scale – how to manage and modulate phenomena that are at once ‘above’ and ‘below’ the scale of the human. (P. 135)

Thacker (2009) contends that epidemics are the ideal event for the examination of the “de-scaling of the human” in its representation of the materialization of networks that pervade the human and function at both the macro- and micro-scales (p. 135). The issue of circulation and flows is central to biopolitics and requires further consideration in terms of the contemporary regulation of infectious disease and pandemic.

My research draws on Thacker’s (2009) observation that epidemics present a political challenge in relation to the connection between sovereignty and multiplicity, which summons the problematic of organization so that some things can circulate and others cannot. He posits that the conceptualization of epidemics as ‘for’ or ‘against’ the people is in fact representative of the same configuration, if we understand, as Foucault himself articulates, the notion of population as constituted by the very processes of circulation. In this sense, the networks, connections or organizations that function for the ‘good’ of the population are the same configurations that work ‘against’ the population at other times. This proposition is precisely illustrated by epidemics of
infectious disease which are enabled by the same mechanisms that constitute collective life. This brings to the forefront the key founding question regarding the apparatus of security, which involves the ongoing distinction between that which may circulate and those circulations that require securing because of their threat to the social body (Caduff 2012). As Thacker (2009) posits, “How does one secure something that is by definition complex, unstable and unpredictable?...The strange form of life that is the epidemic is at once the life that must be secured, and the life that must be secured against” (p. 143). This contradiction, which is at the very centre of the notion of ‘population’, will be explored throughout.

In a similar vein, Caduff (2012) states that,

the constitutive concern of security turns on the optimal circulation of people, goods, and things...In contrast to both the apparatus of sovereignty and the apparatus of discipline, security operates within a context containing heterogeneous given that must be modified in accordance with their intrinsic qualities and tendencies. (P. 338-9)

In his work, Caduff acknowledges the symbolic form of globalization in reproducing the importance of ‘flows’ within this context. The author analyzes the circulation of information at the core of the regulation of biological research, where infectious disease research is increasingly framed as a security concern in the US and biological matter is ever more understood in terms of its function as information (which circulates). Furthermore, he examines the logic of ‘iterability’, as the capacity of the sign to acquire new meaning by breaking with its original context: “In the context of infectious disease research, the sign comes into view as an object acquiring its meaning not from its present but from its future referent” (p. 341). Interestingly, this analysis of the ‘semiotics of security’ offers a seemingly unique approach to the notion of potentiality (and emergence) discussed in relation to new forms of regulating microbial life. In line with the above discussion, I propose that the regulation of circulation and flow within the framework of security is highly relevant to understandings of pandemic preparedness within contemporary infectious disease governance.

The preceding discussion of biopolitics, risk and security lacks an explicit examination of how differentiation and inequality as possible effects of infectious disease regulation might operate in the global context. In the final section of this chapter, I will expand on Foucault’s conceptualization of biopolitics with respect to race and global biopolitics. This section represents an attempt to foreground the possible exclusionary effects of biopolitics and security,
that will be a key part of my investigation of global pandemic preparedness; an activity that is often presented in terms of its ‘global benefit’ but which clearly benefit some more than others within the current global context.

3.5 Race and global biopolitics

This research addresses the concept of ‘race’ in the biopolitical sense in an attempt to explore how inequality and difference transpire through current forms of regulation of infectious disease. In this sense, it is an effort to conceptualize how biopolitical regulation might contribute to existing patterns of inequalities in global health and other arenas (e.g., access to material resources). The emergence of biopolitical governance in the nineteenth century is thoroughly implicated in the formation of modern nation states and, importantly, in the constitution of a national body. It may follow that this theoretical work would address the historical processes of colonialism given the techniques of public health and medicine as instrumental to colonial powers throughout history. Foucault’s work focuses primarily on European contexts, and largely neglects explicit analysis of the implications of biopolitics for colonial configurations of power.

Foucault addresses the concept of ‘race’ in population management by asserting that it is race or racism that justifies the act of ‘killing’ in its biopolitical form. In this sense, the right of the state to ‘make live’ or ‘let die’ which replaced the idea of power in the classical theory of sovereignty (concerning the right to kill) rests on a new notion of race that places race struggles within the boundaries of the nation state. This understanding of race is primarily concerned with the subject’s interiority or exteriority in relation to power which was conceived of as in the domain of state control (Foucault 2003). Foucault’s conceptualization of racism in biopolitics is significant in terms of the threshold between ‘making live’ and ‘letting die’. Here, previous forms of killing that represented the direct putting to death of subjects by the sovereign power are replaced by the more indirect forms of exposing subjects to death through mechanisms such as increasing risk or political expulsion and rejection (Monahan 2006; Ingram 2008a; Elbe 2005). Biopolitics as a regulatory power takes as its objective the production of a healthy social body. Under this formation, the biopolitical modern state is required to distinguish between lives which are deemed valuable and those that are not, where lives that are considered unworthy are eliminated (Inda 2002). As Inda (2002) states,

[a]n essential characteristic of modern biopolitics, then, is the necessity of establishing a threshold in life that distinguishes what is inside from what is outside, separating those
bodily interests that can be represented in the polity from those which cannot, from those adverse to the social order it embodies. (P. 102)

Under this rationality, the marginalization and expulsion of bodies tend to occur indirectly, and often represent implicit and indirect decisions about the worth of particular lives. For example, this can occur through indirectly increasing the exposure of some lives to risk by denying services to certain groups that are construed as a threat to the common good. These services represent actions that aim to enhance and extend life, such as health and social programs. Inda (2002) illustrates how this process has occurred in California in efforts to exclude ‘illegal’ immigrant women from prenatal health services.

Foucault’s conceptualization of modern state racism focuses on an internal threat and emphasizes the role of the state in protecting the integrity and purity of the race. This configuration emerged in the mid-nineteenth century, where previous forms posited race struggles exclusively as “a particular locus of sovereignty” involved in making the claims of a legitimate state (McWhorter 2004:48). New forms differed from earlier ‘race struggles’ that focused on the threat of ‘alien races’ as existing outside of the social body, and instead rested on the idea that “‘the other race is neither one arrived from somewhere else, nor one which at a certain moment triumphed and dominated, but instead, one with a permanent presence, that incessantly infiltrates the social body – that reproduces itself uninterruptedly within and out of the social fabric’” (Foucault in Stoler 1995:66). At the same time, according to Foucault, these distinctions should not be understood as representing pure ruptures in racial discourse, but instead new forms need to be conceptualized in terms of the modification, retrieval and representation of previous discursive formations (Stoler 1995).

This theoretical thinking is significant for its possible contribution to understandings of global health, especially with respect to the considerable inequality experienced globally with respect to morbidity and mortality associated with infectious diseases. I contend that this inequality is intimately attached to the pandemic preparedness and planning that transpired at the global level. Elbe (2005) argues that there are severe implications for the framing of infectious diseases, specifically HIV, in terms of international security, or through the language of the apparatus of security. The author explores the consequences of the Foucauldian conceptualization of state ‘racism’ in terms of the discussed threshold between those who must
‘live’ versus those who can be allowed to ‘die’. In this regard, he draws attention to the consequences of this organizing logic within contemporary biopolitics:

The underlying principle of this new biopolitical racism is not the primacy of cultural difference, as with many more traditional forms of racism, but rather the subtle idea ‘that the death of others makes one biologically stronger insofar as one is a member of a race or population’. The insistence on maximizing the health of populations can thus be dangerous for those who are deemed to be unhealthy. (Elbe 2005:409)

The premise of racism is interconnected with the idea that the exclusion, confinement or death of those deemed inferior within the population will lead to the enhancement of life in general, rendering the population more healthy and uncontaminated (Rabinow and Rose 2006). Within this biopolitical framework, racism is framed as biologically-founded, as this configuration takes the biological characteristics of the population as the target of political organization and strategy.

Elbe (2005) further recognizes the underpinnings of contemporary biopolitical regulation in economic terms, which obtains legitimacy from understandings of material scarcity, or limits. The conceptualization of the ‘infected’ cast in terms of economic cost, has significant implications for the enhanced security (economic and health) of the population. In reference to the ethical dimensions of the securitization of HIV/AIDS, as they relate to decision-making around the more general securing of life, Elbe (2005) states that “this means deciding whether the potential dangers that derive from its biopolitical nature outweigh the dangers of not drawing upon whatever discursive and material resources are available today for addressing the global AIDS pandemic” (p. 416). As Ingram (2008a) states, it is necessary to “fold a reading of biopolitics through an awareness of its colonial dimensions” (p. 877). He follows this assertion with an analysis of the implications of the interconnections between HIV/AIDS and immigration policy in the UK, through which nationalist orientations and racism are frequently expressed in tandem, in the matter of disease. In the context of preparedness, Monahan (2006) maintains that the “current manifestation of population regulation naturalizes the ‘letting die’ of those who are inadequately prepared” (p. 103). In this respect, the state and other (international) parties, are absolved from responsibility for the deaths of ‘vulnerable’ populations through the individualization of failures that are essentially the result of inadequate social infrastructure; itself a part of broader economic and political relations.

Given this proposition, it follows that Foucauldian understandings of race could be understood as possible variations of previous propositions that link race to legitimate state
sovereignty and the regulation and expulsion of an internal enemy. In light of recent political developments, epitomized by the ‘war on terror’, Venn (2007) suggests that the modern arrangement of inclusion versus exclusion in relation to the power of the nation state has altered somewhat: “In the wake of the current securitization of the state and the remaking of the friend/enemy distinction, the relation of externality between state power and the governed has become more differentiated, interiorized within the state as well as operating at a global level” (Venn 2007:117). The understanding of race in its contemporary biopolitical form requires careful consideration of the regulation of populations within the boundaries of state power, but also of the novel configurations within which race operates on a global level.

Accordingly, an important component of my research is the exploration of connections between post-colonial readings of biopolitics and the role of public health institutions which are situated as key sites for the governance of global infectious disease. The conceptualization of biopolitics and race and their contribution to understandings of the global regulation of infectious disease requires further exploration in the context of a more focused study of pandemic influenza planning. Where the enhancement and extension of life is an underlying objective of the postcolonial state and its institutions, there are material disparities in the states of health according to historical-political and geographical differences. While these variations may not map directly onto historical spaces of the colonial centre and peripheral colonies, they are undeniably associated with previous biopolitical arrangements and implicate Western dominated institutions in the continued exploitative and oppressive outcomes of cultural imperialism (Rattansi 1997).

An analysis of the governance of health by international organizations could shed light on the function of race in a global context. As Burcher (2007) points out, the WHO has been critiqued for its approach to infectious disease that, effectively, reproduces global relations of inequality: “[T]he dominant neoliberal perspective [represented within the WHO] reinforces structures of hegemony that create poverty and powerlessness which are themselves the root causes of avoidable disease and death” (p. 778). In this respect, the commercialization of science, close relationships between industry and research and evasions of the root causes of disease characterizing WHO approaches has largely prevented the amelioration of global health inequalities characterized by the prevalence of infectious disease (Burcher 2007). The mandate of such organizations to enhance and extend life through interventions in infectious disease
governance poses a number of problems regarding inequalities between countries, especially given that the privileging of particular interventions over others.

Inequalities in health perpetuated by global health institutions can be conceptualized in the context of Foucault’s notions of biopolitics and race in their connection to direct or indirect decisions regarding the worth of life. Along these lines, Loyd (2009) asserts that “‘humanitarian intervention’ has become one of the virtuous ways in which violence is naturalized and structures of power are maintained” (p. 870). In this respect, the political dimensions of disease and humanitarianism are understood in relation to a geographically-related threshold between life and death. In fact, the development of Foucauldian biopolitical perspectives on disease at a global level necessitates an understanding of the interplay between life and death in global geopolitical relations; and the ultimate objective to ‘make live’ discussed above is a non-reality for specific biopolitical subjects and populations (Blue and Rock 2010; Loyd 2009).

The objectives and ideologies of progress and development that are inherent to institutions which regulate global public health are in some way linked to forms of epistemic and material violence, which deal with the frequent erasure, subjugation (and appropriation) of Other knowledges and modes of existence (Briggs 2004). The knowledge produced by these institutions as truth discourses legitimized by science and medicine are fundamental to the functioning of global biopolitics. Furthermore, the (re)emergence of infectious disease in the West represents substantial challenges to the projects of progress achieved through disease control, where illnesses such as tuberculosis frequently become racialized and reproduced in external/internal binaries, rather than being attributed to broader structural inequalities (Craig 2007).

Brown and Bell’s (2008) analysis of the WHO’s global strategy on non-communicable diseases, reveals that “certain countries, especially those outside the West, are being captured or ‘enframed’ by the integrative ambitions of a western ‘imperial’ vision of global health...[through which] subtle and dynamic relations of power that exist between countries of the West/non-West, are exposed” (p. 1571). Drawing on Rose’s (1999) work on the ‘ethics of care’, the authors contend that the objective of the global strategy involves the shaping of decision-making within populations regarding everyday choices relating to health. In this regard, western lifestyle and consumption patterns are key in operationalizing an ‘ethico-politics’ by way of regulating the
behaviour of populations, globally. In contrasting imperial public health with postcolonial agendas, the authors point out that where the former had conversion (i.e., of indigenous medicine) as its target, the latter is primarily concerned with the achievement of ‘integration’. This requires understanding in the context of an entrenched dichotomy between ‘modern’ versus ‘traditional’ societies that is upheld by such persistent tools as the ‘epidemiological transition’ in global health understandings. The authors contend that it is crucial to engage in critical contemplations of the “‘hype and hope’ that is embedded within the discourse of international organizations like WHO, concerned as they are with managing individual conduct in ways that replicate the desires of the national bio-political state” (p. 1577).

In this context, some authors warn that understandings of inequality and oppression should not be cast according to an oversimplified binary logic characterized by categories such as North/South, East/West, or Third World/First World. Instead, the configurations of power characterizing contemporary contexts are far more complex and diffuse than such binary categorizations allow for (Mohanty 2003). The material and symbolic inequalities that are experienced globally signify hybrid arrangements of power that are implicated in processes such as the deterrioralization associated with globalization and new configurations of ‘difference’ under neoliberal capitalism (Venn and Terranova 2009). At the same time, postcolonialism allows for the understanding of current national and global reconfigurations in terms of past relations: “At a moment in history when the globalization of space is being achieved through simultaneous integration and fracture, inclusion and exclusion, transmuted colonial relations remain dynamic forces within process of global exchange” (Coronil and Skurski 1991:334). In the case of infectious disease, it may be argued that the discourse of emergence framing infectious disease governance poses significant challenges for postcolonial understandings and the regulation of life.

3.6 Theoretically-informed research goals

The preceding conceptual and theoretical framework provides a particular entry point into the analysis of the global governance of infectious disease. My research is based on the assumption that the global regulation of the vital statistics of the population continues to be a highly relevant principle of political organization in current contexts. The governance of emerging infectious disease as a threat to the security of the population is only ever quasi-
medical and, while interventions often target biological deviations, my case study of pandemic influenza governance offers an approach that will conceptualize these operations in the context of broader economic and political agendas. Informed by the theoretical framework outlined above, my research aims to:

1) Explore the alignment and/or divergence of discourses on ‘security’ and ‘emergence’ as they relate to the governance of infectious disease; and

2) Examine the ways in which technologies of risk enable, obstruct or otherwise inform the relationship between security and emergence.

Through this framework, the proposed projection of disease onto an uncertain future event and the role of security in anticipating and planning for this event are considered, along with the possibility of these strategies for the conditioning of future realities. The implications of biopolitics and infectious disease governance for understanding the representation and authority of the nation state under current global configurations of power are also a significant focus of this work. Importantly, the above preparatory work suggests that there is a need to examine the ways in which the regulation of infectious disease through mechanisms such as preparedness planning can contribute to the disavowal of life and health in a global context. In this sense, the understanding of race in relation to the regulation of life is explored in terms of its potential function in service of and opposition to security. This perspective is an essential approach to the understanding of global health inequalities in the context of governance. In the next chapter, I describe the methodological approach I undertook to execute these theoretical research objectives.
4 Methodology

In the previous chapters, I examined relevant social science perspectives and outlined a theoretical framework that provides a foundation with which to understand the global governance of infectious disease. This framework allows for a specific focus on the operation of biopolitics at the global level that will be elaborated upon through an analysis of pandemic preparedness planning. To that end, this chapter outlines the critical discourse analysis methodology used and the specific research questions that this approach allows me to pose.

Next, I outline my sampling strategy and approach to data collection. Following this, I provide a detailed description of my sample in terms of the content and organization of the four selected WHO texts, and then elaborate on the process of data analysis. There I describe the classificatory and analytic choices that were made throughout the research.

4.1 Critical discourse analysis and research questions

This empirical investigation of infectious disease engages in a Foucauldian-informed critical discourse analysis, which specifically uses Foucault’s concept of ‘discourse’ to frame the approach. This approach differs from dominant understandings that conceive of language (and text) as an expressive, transparent medium through which thought is precisely communicated. Instead, discourse considers meaning as part of a broader context, to which power is central and as such there are particular constraints, rules and freedoms inherent to language (Mills 2004; Gilbert 2008; Cook 2008; Lupton 1999a; Potter 2008; Traynor 2006).

Discourse refers to ways of understanding and representing the world and is simultaneously implicated in the formation and ordering of reality (Cheek 2004; Parker 1999). Distinct from rational approaches to language and communication that assume their neutrality, this approach considers the representation of knowledge through discourse as thoroughly connected to broader structures of power. In this sense, the ‘truths’ first made possible by discourse are frequently taken-for-granted in the world, and are enabled through the particular social and historical conditions within which discursive practices occur (Ainsworth and Hardy 2004; Kendall and Wickham 1999). Thus, meaning derived from language must be understood in its connection to the social and political settings within which it is embedded (Lupton 1996).
It is important to note that from this perspective there is no all-encompassing or universal discourse (Kendall and Wickham 1999; Cheek 2004). At the same time, Cheek (2004) points out that “there are a number of possible discursive frames for thinking, writing, and speaking about aspects of reality. However, not all discourses are afforded equal presence or, therefore, equal authority” (p. 1143). Some discourses function to marginalize or exclude other discourses and these outcomes are consequences of power relations within certain contexts. While discourse is productive in that it enables specific ways of being and knowing, it simultaneously limits “what it is possible to know in certain situations” (Cheek 2004:1143). Furthermore, discourses should always be considered in terms of their relation to other discourses, where “[e]very discourse is part of a discursive complex; it is locked in an intricate web of practices, bearing in mind that every practice is by definition both discursive and material” (Kendall and Wickham 1999: 41). This suggests the importance of considering the relationships between discourses, in the sense that discourses draw upon other discourses, potentially enabling or constraining these forms.

While Foucault withheld from elaborating on exact guidelines or procedures through which to conduct empirical investigations, he instead aimed to provide a ‘toolbox’ with which to interrogate systems of power (Mills 2004). As such, the method of critical discourse analysis undertaken in this research aims to utilize Foucauldian concepts as tools for understanding the problem of infectious disease and pandemic planning, and explore the power relations reflected and reproduced through these discursive formations. According to Foucault, discourse must be treated not as a

> groups of signs…but as practices that systematically form the objects of which they speak. Of course, discourses are composed of signs; but what they do is more than use these signs to designate things. It is this *more* that renders them irreducible to the language and to speech. It is this ‘more’ that we must describe. (quoted in Lehtonen 2000:47)

Discourse analysis is concerned with the ways in which specific texts construct versions of reality that produce *effects* and maintain particular practices (Potter 2008; Gilbert 2008). In this way, discourse analysis investigates the constitutive nature of text and/or language, especially in relation to its construction of subjectivities, where discursive frameworks demarcate boundaries of identification to be negotiated (Mills 2004). As Traynor (2006) states, “discourse analysis interacts with poststructuralist – or deconstructive – examinations of meaning, text and identity
in stimulating and productive ways” (p. 65). Truth claims are interrogated for their historical and political contingencies which have developed in relation to these contexts, reflecting the epistemological standpoint that no account of reality is innate or inevitable (Ainsworth and Hardy 2004). As such, discourse analysis is concerned with the specific sociocultural and historical contexts within which texts are produced (Lupton 1999a; Potter 2008). More specifically, discourses must be understood in relation to the specific institutional, social and structural contexts within which they occur and conceived of as contributing to the continuation of that context (Mills 2004; Ainsworth and Hardy 2004).

As Cheek (2004) indicates, it is important to appreciate that discourse analysis is an approach, rather than a predetermined method. In this respect, she quotes Potter and Wetherall (1987) who state that,

there is no method to discourse analysis in the way we traditionally think of an experimental method or content analysis method. What we have is a broad theoretical framework concerning the nature of discourse and its role in social life, along with suggestions about how discourse can best be studied. (Cheek 2004:1145)

In fact, some researchers suggest that there is the danger that applications of fixed methods in discourse analysis can sacrifice the specificity of analytic sensitivity required for particular research topics (Ballinger and Cheek 2006; Cheek 2004). Despite this, there are general guiding questions that should be outlined prior to the analysis of each text – these may be subject to change upon the researcher’s engagement with the text – that reflect some degree of internal consistency between the overall theoretical approach and research design (Buus 2005). Lupton (1996) maintains that “[t]he examination of texts is central to discourse analysis and other forms of interpretive research” (p. 18). The purpose of discourse analysis is not to uncover some inherent meaning within texts. Rather, its objective is to explore the relationship between power, meaning and knowledge represented in these texts (Parker 1999). Texts function as representations of aspects of reality, and discourse analysis is as interested in the assumptions and understandings inherent to texts as the actual descriptions and themes themselves. Thus, “[t]ext and context are in a continual state of tension, each defining and redefining the other, saying and doing things differently through time” (Hodder 1994:394).

The purpose of my work is to explore the relationships between texts relating to infectious disease, specifically pandemic influenza, and the contexts within which these texts are
produced. As such, the methods in this research will utilize texts as ‘raw data’ with the broad objective of analyzing the organization of the constructions effected by discourse, its interconnection with social, political and economic contexts and its implications for understandings of the constitution and maintenance of the social world (Lupton 1996). This critical approach will involve the contestation of meaning as ‘natural’ or self-evident within the field of infectious disease governance. This will entail an analysis of the underlying values and knowledges of global public health governance with respect to understandings of pandemic influenza planning, where claims to ‘truth’ are discursively constructed and implicated in power relations.

The above discussion of the securitization of infectious disease represents one example of the discursive framing of infectious disease. From this perspective, security is not a ‘real thing’, but a mode of thought or knowledge that orders and constructs versions of reality in particular ways. While ‘security’ is a term that is commonly used in discussions of infectious disease, securitization represents the attempt to understand the conditions of possibility for infectious disease governance within broader contexts and the connection of these conditions with other discursive frameworks. In fact, the use of the term security often takes for granted the assumptions, knowledges and values which are implicated in the utilization of this construct. The discursive framing of infectious disease in terms of security has real material effects and is simultaneously enabled by the specific economic, political and social contexts within which it exists.

The approach outlined in this chapter can be labelled as interpretive and constructionist because it assumes a relativist approach to knowledge, seeks multiple standpoints and realities and problematizes understandings of what is ‘real’. In this sense, I propose that my results do not attempt to accurately portray or reflect reality, but provide one interpretation of the problem of pandemic influenza governance. This method is also attentive to the silences in texts as part of the interpretive process, and this is consistent with the general tenets of discourse analysis which approaches readings of silence as embedded in historical and cultural contexts. In this sense, silence in texts “becomes a form of discourse. Like discourse, silence requires interpretation and incorporates action” (Noble 1999:195). Analysis of silence in texts allows for consideration of the marginalization and exclusion of certain discourses which are bound up in power relations inherent to the text and broader context. More generally, this approach has as
its foundation the value and political importance for the interrogation of knowledge production and dissemination, such as those represented by the work of the WHO. This work recognizes the importance of interrogating power and its relation to knowledge; the documents produced by the WHO being one particular portal into the inseparability of power and knowledge.

As a result of my background research, I developed a set of questions, listed below, that were used to connect with the texts throughout the research process and which aided in the analysis of the texts. In addition, Buus (2005) recommends a broader analysis of the actual construction of data in discourse analysis that considers such factors as the contextual conditions framing the gathering of the text, “the characteristics of the genre from which specific texts originate, [and] the specific social practices related to the production of the analysed texts” (p. 30). This methodological consideration is consistent with my aim to describe these texts within their institutional contexts, specifically those that govern global public health and infectious disease. This internal and external (although these are hardly clearly demarcated categories) ordering of the text allowed for a reconstruction of the planning process – or in this case the framing and preparation of preparedness techniques that “explain[ed] the operation and effects of discourse” (Sharp and Richardson 2001:205). Therefore, a primary concern with discourse that guided this research was the knowledges presented and maintained by discursive constructs, such as pandemic, preparedness, and emergence (i.e., how discourse constructs versions of reality with respect to these key issues) and the broader discourses (i.e., those outside of texts) that are evident in structuring these representations.

Given the theoretical framework and methodological approach presented in this preliminary work, the following questions frame my investigation:

- How is infectious disease constructed in these documents?
- What discursive strategies (e.g., language, gaps, and silences) are used in these constructions?
- What do these constructions and discursive strategies suggest for how we can understand broader economic and political contexts?

In addition, examples of theoretically-derived ‘technical questions’ posed to specified documents/texts throughout the analysis are presented below.
Key questions derived from the conceptual framework:

- What is being said about the global context?
- What is being said about the role and authority of the nation state? What authorities are drawn upon in guiding planning?
- What role does the economic sphere play in the regulation of infectious diseases?
- What kinds of postcolonial assumptions or silences exist?
- How are notions of security discussed in the context of infectious disease governance? What is meant by security (economic, national, etc.)?
- Where are the risks located?
- What kinds of boundaries are being inferred and (re)established?
- What kinds of silences or gaps exist with respect to the above themes & questions?

Questions regarding relationships between texts:

- What other sources, bodies or figures are referred to in this piece?
- What overlap exists between the content and form of these texts? How do they diverge?
- How is the information, directives, etc. framed in each text and what is the intended application of these directives?

4.2 Sampling strategy and data collection

This work on global pandemic influenza governance provides a particular approach through which to enter into an interpretive empirical-theoretical investigation of this topic. In my research, the governance of pandemic influenza serves as a specific example of the broader area of emerging infectious disease. I focus on documents produced at the international level that are aimed at pandemic planning. The data collection process for this research takes the form of purposive sampling (Field and Morse 1985). In this sense, I initially identified a number of key documents intended to facilitate the emergent analytical and theoretical framework. My investigation began with analysis of four of the World Health Organization (WHO) planning guidelines on pandemic influenza, produced from 1999 to 2009. I commenced with the WHO as a body of governance in an attempt to shed light on the structuring of the problem of pandemic influenza ‘from above’.
At the time of data collection, the WHO had drafted four major documents relating to pandemic influenza preparedness over the decade. These documents are as follows:

1. **1999 Influenza Pandemic Plan. The Role of WHO and Guidelines for National and Regional Planning** (WHO 1999)
   - Intended to provide medical and public health leaders with guidance to assist in better responding to pandemic influenza
   - Outlines roles and responsibilities of WHO and national authorities given the occurrence of a pandemic

2. **2005 WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics** (WHO 2005)
   - Provides a significant update of the 1999 plan deemed necessary due to a number of reasons including: the recognition of human fatalities due to H5N1 in parts of the world; and the successful control of SARS globally, resulting in lessons learned from the handling of this disease

   - Identifies the need to update the 2005 document due to substantial developments in the field including: strengthening partnerships between the animal and human health sectors; an increase in technical and other developments relevant to pandemic influenza; the adoption of the new International Health Regulations has increased focus on global health security; and the need to address vaccine and antiviral stockpiling

   - A secondary document that elaborates on the new ‘Whole-of-society’ framework introduced in 2009

These texts have specific functions and objectives which I identified as having the potential to contribute to, support or refute the analytical framework discussed above.

From an initial scan of the outline of these documents, it was apparent that the global response to pandemic (priorities and guidelines) had developed along with the very emergence of the disease itself. The WHO’s mandate to provide leadership on global health issues is widely accepted. It follows that the WHO shapes global health agendas in providing directives
regarding issues such as infectious disease and pandemic influenza. The organizational objectives outlined on the WHO website, cite the following aims in a total of six targets areas:

- providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
- shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge; and
- setting norms and standards and promoting and monitoring their implementation (WHO 2012b).

While the provision of leadership may seem self-evident, the claim to engage in promoting knowledge generation in addition to the objective of norm setting require examination in the context of pandemic influenza planning. While the stated purpose of these texts involves providing guidelines on the process of preparedness and response mechanisms, a central effect of these is in the elaboration of the very nature of pandemic; this requires further consideration in light of the WHO’s self-proclaimed role as norm-setter in the international community.

A main objective of the WHO in the area of pandemic influenza is to provide support and direction for national and to some extent regional bodies to develop strategies for creating and improving pandemic influenza plans. Since the first preparedness guidelines in 1999, the WHO has called upon member states to develop such plans to mitigate the effects of a potential pandemic. This organization has been largely responsible for directing national and regional bodies in their planning for preparedness against infectious disease threats (particularly pandemic influenza) and, in providing this direction, places the onus on countries to participate in this system of preparedness. The WHO has been a major source of knowledge about pandemic and, accordingly, the driving of appropriate responses to this potential event. Furthermore, the scope of authority and power of the WHO is wide-reaching, with the organization acting as head of a global network of centres and countries that monitor and respond to influenza activity worldwide. The WHO identifies five main collaborating surveillance centres, located in Australia, Japan, the UK and two in the US (one of these being the US Centre for Disease Control). Under this arrangement, the organization leads more than 120 National Influenza Centres in over 90 countries that participate in the ongoing monitoring of influenza activity. This central position in the governance of infectious worldwide compelled my decision to commence with WHO documents for the first stage of my analysis.
At the same time, I was open to the possibility that new texts would be identified for further analysis, based on the findings and gaps presented in the four WHO texts. Other examples of potential documents for analysis included those produced at the national and regional levels in order to expand my analysis to pandemic governance. For instance, I thought that the inclusion of regionally-produced documents (by the WHO and other organizations) might be a potentially productive part of the sample in its representation of a particular configuration of governance under globalization. Given my preliminary work and theoretical framework, these documents could provide insight into such matters as affiliations between nation states, or shed light on specific examples of cross-border issues between countries within a specific region.

There is a plethora of documents that address pandemic influenza preparedness produced by many different national, regional and sub-national bodies or organizations. For example, the WHO has produced some regional plans such as the *Regional Influenza Pandemic Preparedness Plan (2006-2008)* for South-East Asia and the *Regional Pandemic Influenza Preparedness and Response Plan, 2009-2010 for the Regional office of Africa*. Regional plans have also been created by other regional alliances not outwardly affiliated with the WHO such as the Security and Prosperity Partnership of North America which distributed the *North American Plan for Avian and Pandemic Influenza* in 2007. Examples of national documents include the Public Health Agency of Canada’s (2006) *The Canadian Pandemic Influenza Plan for the Health Sector* and the UK Department of Health’s (2007) *Pandemic Flu: A national framework for responding to an influenza pandemic*. Hence, my plan was to commence with the purposive sample, and then make decisions for the snowball sample based upon emerging theoretical or conceptual considerations.

Upon embarking on my data analysis it became increasingly evident that I had a rich source of data in the documents that I had initially identified. As such, and because of the in-depth process of analysis that I describe below, I decided that it would allow for more thorough interpretation of the data if I focused only on the four texts from the purposive sample. Moreover, throughout the data analysis, I became increasingly conscious that this work is a particular empirical example representing one field of global governance of infectious disease. In this context, my work involved intensive focus on the conceptualization and response to pandemic on the global scale, as framed by WHO. I came to appreciate that a comparison of the
governance of pandemic across different scales and forms of leadership was not feasible, given the rigorous engagement with (and immersion in texts) that formed the data analysis process.

4.3 Description of sample

Throughout the data analysis phase, I developed a detailed record that describes the organization and content of the documents included in my sample. Appendix A contains a descriptive summary of the four WHO pandemic planning documents from the years 1999 to 2009. In this summary, I provide information on the individual documents according to the following categories: the audience as identified in text; the stated purpose or application of the text; the table of contents; the description of structure and content; the tools presented in the text; and other texts referred to within the text. In what follows, I present a short synopsis of this record in an attempt to describe these documents and indicate key transformations in content over the period from 1999 to 2009.

The 1999 pandemic plan is intended for medical and public health leaders, national authorities and national pandemic planning committees in-formation. The document outlines the role of the WHO and national health authorities in pandemic preparedness and provides a framework for national decision-making around key issues. The roles and actions of the WHO and national bodies are outlined according to pandemic phase. The text contains a great deal of background information compared with later planning documents, detailing key issues around influenza vaccine and antiviral drugs, clinical features of influenza and the historical background of pandemic, for example. In particular, the history of influenza ‘landmarks’ and features of the influenza virus (e.g., clinical or biological) comprise a considerable proportion of the document compared with the other documents.

The 2005 plan identifies public health officials as the primary audience for the text and provides an executive summary for senior policy makers and other government officials who may not have a background in public health. This document introduces a change in pandemic phases since the 1999 plan and elaborates on the goals, objectives and actions for WHO and national authorities. The 2005 plan contains very little historical or descriptive background to the problem of pandemic, and instead outlines key developments (e.g., SARS outbreak in 2003 and endemic H5N1 infection in some world regions). Most of this document consists of a table-
format that outlines the general goals, objectives and actions for WHO and national authorities, according to phase.

The 2009 document is intended to significantly update and replace the 2005 plan. The audience is not explicitly specified in this text; however, the plan states that it should be used to harmonize national and international preparedness and response. This document is referred to as a core document in relation to a wide range of other documents from a variety of thematic areas, such as planning and coordination and communications. A number of developments are cited in the reasoning for revision since 2005. These developments are framed in entirely ‘positive’ terms, such as increased understanding of past pandemics and control strategies, and the new reality of antiviral stockpiles. In comparison with the 2005 document, this document presents additional background information, such as in description of past pandemics and the expected impacts of a future pandemic. Similar to the previous two documents, the 2009 document provides a detailed framework for national and WHO recommended actions according to pandemic phase. The 2009 document introduces the new ‘whole-of-society’ framework, which is elaborated upon in the second 2009 document described below. Annex 1 of this document, entitled ‘Planning Assumptions’ provides a number of categories on which to base planning and response.

The second 2009 document is intended as a supplementary text to the primary document, with elaboration of the ‘whole-of-society’ approach to pandemic readiness. This document is designed to be a multisectoral document that incorporates bodies or organizations beyond the health sector. This document provides a ‘Readiness framework’ for national pandemic preparedness, founded on the following principles or components: a whole-of-society approach; preparedness at all levels; attention to critical interdependencies; a scenario-based response; and respect for legal and ethical norms. The topics of business continuity management and dependencies on essential services are also key features of this text, and a primary goal is the integration of these considerations into systems of preparedness.

Generally-speaking, the documents reflect an evolving understanding of pandemic over the decade since the first official guidance document was published by the WHO in 1999. The transformation of conceptualizations of the ‘problem’ of pandemic over time is a key underlying theme in my analysis. Upon a surface scan of the documents one can see that the approach to
pandemic has expanded to include an increasing number of institutional actors (e.g., commences with public health leaders and the health sector and later targets actors beyond the health sector) culminating in the ‘Whole of Society’ document in 2009.

An important component of critical discourse analysis involves reading across these texts for similarities and differences or interrelatedness; however, it would be erroneous to overstate a conclusion that suggests a linear or consistent progression or development over the decade of planning. In fact, in addition to analyzing the transformation of the problem of pandemic over the decade, I am also concerned with the notion that these texts comprise a collection. While there are some major changes in terms of representation of pandemic preparedness and response (e.g., pandemic phases), the documents must also be considered in light of their collective and interconnected construction of the overall theme of pandemic.

Furthermore, it is also important to acknowledge that the documents exist only in relation to innumerable other texts that have not been included in this sample. While some of these texts are acknowledged in the four sample documents, and many are not, I recognize that these documents do not exist independent from others within the field of global health and beyond. Similarly, with some exceptions (i.e., World Organization for Animal Health – OIE and Food and Agricultural Organization of the United Nations – FAO), there is very little reference in each of the documents to specific organizations or bodies outside of the World Health Organization.

Pandemic Phases from 1999 to 2009

I now briefly explain the key changes in pandemic phases as represented in the texts from 1999 to 2009. In doing so, I also describe the charts contained in Appendix B of this thesis. In the 1999 plan, the first preparedness level in the interpandemic period indicates the appearance of a new influenza strain in humans, where there is no reference to animal infection (Appendix B, Table 1). In contrast, phases 1 and 2 in the 2005 plan are based on infection in animals (which may have infected humans); phase 1 indicates low human risk and phase 2 represents substantial risk to humans (Appendix B, Table 2). The 2005 document introduces the ‘pandemic alert’ period following the interpandemic period, which is characterized by increasing transmissibility between humans. In the 1999 document, there are four pandemic periods (phases 1-4), whereas there is only one pandemic phase in the 2005 document (phase 6), and recognition of the possibility of waves or regional or multi-regional epidemics is no longer
included in the characterization of disease. The 2005 pandemic phases are characterized by the elimination of the ‘phase 0’ Interpandemic period when compared to the 1999 pandemic phases. Instead, the Interpandemic is labelled phase 1 and phase 2 in 2005.

In 2009, the ‘periods’ are eliminated from the description and replaced by an ‘estimated probability of pandemic’, ranging from uncertain to pandemic in progress (Appendix B, Table 3). In this sense, there is no longer an interpandemic period represented in the pandemic phases, or in the document for that matter. Phases 1-3 are linked to uncertain probability of pandemic, with this probability increasing progressively until a pandemic is reached. In addition there are 2 new phases following the pandemic phase 6, there are the ‘post-peak’ period and the ‘possible new wave’, which precede the post-pandemic period. Phase 1 is now characterized by no reported disease in humans caused by animals and the phase descriptions are obviously more in line with their objective of ‘observable’ phenomenon, with the second phase being characterized by known human infection with an animal virus. The term Interpandemic is used in slightly different ways throughout the documents to characterize the pandemic phases that precede the pandemic periods. In contrast, the term Non-pandemic is used as a conceptual tool in my analysis to highlight the changes in pandemic phases that do not represent pandemic phases (Appendix B, Table 4). In this way, the non-pandemic period comprises pandemic phases that precede and follow the actual pandemic phase. The 2009 plan documents the changes and objectives in its (slightly) revised pandemic phases:

The 2009 pandemic phases are: a planning tool; simpler, more precise, and based on verifiable phenomena; will be declared in accordance with the IHR (2005); only loosely correspond to pandemic risk; identify sustained human-to-human transmission as a key event; better distinguish between time for preparedness and response; and include the post-peak and post-pandemic periods for recovery activities. These new phases are not: designed to predict what will happen during a pandemic; and always going to proceed in numerical order. (WHO 2009a:24)

The above elaboration of changes in the pandemic phases over the decade of planning is intended to assist the reader in understanding particular pieces of the analysis that follows in chapters 5 and 6.

4.4 Data analysis

As stated, this research takes the form of a Foucauldian-informed critical discourse analysis that draws upon a variety of conventional approaches to qualitative analysis. This
approach involves the development of themes and interpretations that are grounded in the texts chosen for analysis, with initial direction from the pre-determined questions derived from my theoretical and conceptual work (see above questions). In keeping with the central tenets of qualitative research, analysis involved multiple readings of texts, the development of thematic categories, the combination of categories into interpretive themes, and the continuous movement between close readings of the text and the development of categories and themes.

I began the process of data analysis in the development of the above questions, or my “start list”, which draws from the conceptual framework, discussed earlier (Miles and Huberman 1984:57). These questions framed the initial descriptive coding of the data which continued as phrases, expressions and ideas represented within the documents were categorized. This descriptive coding allowed me to further organize and summarize segments of the data. Furthermore, while I identified this ‘start list’ prior to the data collection and analysis phase, the coding of data was simultaneously grounded in the texts, and categories transformed and developed over time as expected.

This work involved a continuous iterative engagement between theoretical themes and the texts themselves and accordingly, I persistently conferred with theoretical work throughout the analysis (Miles and Huberman 1984). This represents an approach of ‘emergent’ research design; while I was obviously considering the data with a particular theoretical frame in mind, this frame was simultaneously open and developed considerably over time. The results of this study represent a particular interpretation informed by my theoretical commitments, along with an intensive immersion in, and engagement with, these texts. Throughout this process, the content of the texts have been examined in relation to broader structures (e.g., economic context and the state of knowledge). As indicated above, the prescription of specific tasks throughout the data analysis process is incongruent with the underlying epistemological commitments of the theoretical approach that frames this research. Instead, the methods undertaken in this work subscribe to a number of underlying tenets. Importantly, the process of intensive connection with the texts identified above characterizes a central principal of this research. The practice of immersion, in this sense, constitutes an extensive process of deliberation and reflection with respect to the content and themes represented in the documents. This process will be described below in more detail, but transpired in part through note-taking, data extraction and organizing, summaries, free-writing and theoretical reflection.
Another key principle that guides this work is in the importance of interpretation as a creative and hermeneutic process. It is creative in the sense that I have generated something unique in my own interpretation of the documents sampled. The work that I have produced is something in relation to myself, and informed by my existing knowledge, experience and values. As such, there are no claims of any form of objective truth made in this process of inquiry. I acknowledge that this is an interpretive piece generated according to my own epistemological predilection, and thus this work is also considerably limited by my positioning (e.g., consideration of the broader limits of institutionalized knowledge). With this in mind, and in relation to the preceding discussion in this chapter, I outline below an overview of the steps taken following initial data collection.

Cheek (2004) suggests that researchers can develop a decision trail in order to deal with the issues that arise due to the lack of fixed method. As such, I utilized this tool throughout the data analysis process in order to clearly explicate what steps had been performed throughout the research, along with a rationale for why these steps were taken (Cheek 2004). It is important to note that the phases described below are not representative of distinct or necessarily linear steps, but are constitutive of an ongoing iterative and hermeneutical process characterized by considerable overlap in the numerous stages of data analysis.

The analytic process undertaken in this research involved ongoing measures for the purpose of ensuring the trustworthiness and rigour of my interpretations. Throughout this process, I carried out sustained and intensive engagement with the texts in my sample. I also performed continual reflexive writing on the data analysis process and the results that were emerging through this process, and participated in frequent and intensive debriefing and feedback sessions with my Thesis Committee. These tasks combined to enhance the trustworthiness of my findings and confirm that the emergent descriptive and analytic themes were, indeed, grounded in the texts.

The first step in data analysis involved an intensive process of immersion in the texts, in which I undertook thorough, in-depth readings of the texts, note-taking and free-writing that focused on my preliminary thoughts about the data. This process was intended to achieve an extensive condition of closeness to the texts in order to stimulate my thinking about descriptive and analytic themes in direct relation to the data. This initial process involved three close
readings, although throughout the entire research I completed considerably more than three readings. The first was a surface reading in order to acquire a general understanding of the underlying intention and content of the documents. During the final two readings, I prepared a summary of all four documents which additionally required ‘staying close’ to the texts. While this process involved some level of interpretation, it generally aimed at a summarized reproduction of the material within the documents. In addition, I engaged in an ongoing documentation of my ‘initial impressions’ of the data along with general thoughts regarding emergent themes. While I remained close to the texts at points throughout the final two readings, during this process I also acquired distance from them by increasingly engaging with the themes outlined by my guiding research questions. In this sense, the iterative process enabled me to maintain my pre-determined theoretical lens, while simultaneously allowing the themes to emerge from the documents. The process in which I ‘hovered’ close to the texts in conjunction with periods of ‘distance’ from them (through free-writing and engagement with the research questions) was continuous throughout the data analysis process up until the later phases of analytic writing.

Following this process of immersion, I embarked on a particular method of ‘data extraction’ in order to organize and manage the data. This process allowed me to extract data from the documents in a systematic manner. During the development of my proposal, I had identified the following three key data extraction categories based on the general research topic and its relation to my broader conceptual framework on emergence and infectious disease governance: Emergence & Spread; Pandemic; and Preparedness & Response. Following my three close reads of the documents, I determined that these categories were suitable in their capacity for organizing the material in the texts. Furthermore, I identified two additional data extraction categories following these reads, which were Nonpandemic/Interpandemic and Uncertainty. I realized that these categories were important throughout my initial readings, as the distinction between pandemic versus non-pandemic promptly emerged as a significant idea in my early notes on the documents. In addition, the underlying condition of uncertainty was a striking feature of the texts and a recurrent theme throughout my note-taking.

The following are the data extraction categories with which I obtained and organized data from the text: i) emergence & spread; ii) pandemic; iii) non-pandemic; iv) preparedness & response; and v) uncertainty. The data extraction categories were accompanied by guiding
questions that were posed in order to organize the material in the texts within the relevant category. For example, the ‘emergence and spread’ category allowed me to ask the following questions of the text: How is infectious disease presented as a new or emerging issue? How is the pandemic virus conceptualized in terms of its spread? What references are made to historical contexts or precedents with respect to emergence or spread? These questions assisted me in organizing the data according to extraction categories. The data extraction categories resembled a metanarrative of the texts, and within this metanarrative my intent was to engage in an analysis of infectious disease and pandemic. In this context, the categories functioned as tools that provided me with the parameters of the discourse. The process of data extraction entailed organizing the data in the texts according to these pre-defined categories through the coding of this material. Once the data had been extracted in relation to the five categories, I then developed detailed summary documents for the purposes of descriptive coding. Of note, the category of *Uncertainty* generated the least amount of data through the extraction process. Although *Uncertainty* had been identified as a unique category upon initial reading, I later recognized its pervasiveness throughout all other categories. I reconciled this dilemma by taking note of the permeation of uncertainty throughout the texts and concluding that the theme would likely emerge in the following phases of data analysis, either in my descriptive or analytic themes.

Following the generation of summaries based on the extraction categories, I commenced coding for the purposes of developing descriptive themes. Through this coding process, I produced eight descriptive themes: i) historical precedents; ii) characteristics of the virus; iii) boundaries and between; iv) data collection and surveillance; v) the usual, expected, normal; vi) impact and disruption; vii) containment and control; and viii) authority and responsibility. Through the coding and development of descriptive themes, I continued my ‘close’ engagement with the documents in order to remain grounded in the data for an extended period of time. At this point, I organized the data according to each descriptive theme, including relevant quotations and content under each. This represented a combined process of organization and writing, through which I elaborated on the data under each theme and developed further descriptive sub-themes.

The descriptive codes were then used to develop broader analytic codes or “meta-codes” that aimed to pull the material together for a more complex approach to analysis (Miles and
Huberman 1984:67). While the descriptive coding allowed for the initial detailed summary of the data, the analytic coding enabled the construction of broader overarching themes and constructs (Miles and Huberman 1984). Again, this process involved continuous interaction between the ‘raw data’ (or texts) and the theoretical concepts and framework guiding the research. Part of this work involved the linking of specific descriptive codes, or more generally, reflection on the way in which descriptive codes connect with one another in relation to the broader conceptual framework. In addition, I carried out an ongoing process of memoing as a means of developing my analysis based upon the identified categories and themes. This involved writing more elaborately on ideas about and relationships between themes and their connection to the theoretical framework (Field and Morse 1985; Miles and Huberman 1984).

Following the production of descriptive themes, I developed analytic themes through writing. Again, this was an ongoing iterative process, with substantial overlap between the previous step and the analytic theme development. I identified three of the eight descriptive themes as having a ‘natural fit’ with one another: Characteristics of the Virus; Boundaries and Between; and The Usual, Expected, Normal. These themes were identified for the first stage of analytical writing due to their ‘fit’ as there was some overlap in terms of content and on a more conceptual level, and I could foresee them coming together in some way to become a broader analytic theme. The development of analytic themes entailed an ongoing, non-linear, process of writing, theoretical consideration and engagement with the data.

From this process of analytic writing, I produce the two results chapters that follow. The first, Blurring the boundaries between pandemic and non-pandemic, outlines my findings based on the development of #2, #3 and #5 of the descriptive themes. The second results chapter, Integrating pandemic: Towards a ‘sustainable’ preparedness is elaborates on #4 and #7 of the descriptive themes. Descriptive themes #1, #6 and #8 did not emerge as explicit analytic themes as there was considerable overlap between them and other themes (e.g., #6 and #3).
5 Blurring the Boundaries between Pandemic and Non-pandemic

This first “findings” chapter is organized according to two main themes: (1) an uncertain, yet imminent, event; and (2) delineating and regulating boundaries. Under the first theme, I discuss a specific ontological construction of the virus, the representation of pandemic as a ‘disruption’ of normal circumstances and the framing of seasonal influenza as a ‘flexible’ phenomenon. I argue that a key discursive tool operating throughout the documents involves the introduction and elaboration of the features of ‘pandemic’ within the general objective of preparedness as a technology of governance. In this regard, the texts differentiate between ‘normal’, everyday convention and extraordinary or exceptional circumstances attributed to pandemic. At the same time, there is an uneasy distinction between the so-called ‘normal’ state of society and the (projected) state of a future pandemic. This tension is illustrated by the considerable discursive work that goes into the defining of pandemic, while still remaining open enough to accommodate the uncertainty inherent in the ‘problem’. The distinction between the benign and exceptional emerges as a central and productive tension, and is reflected in discussions about the nature of the virus and the experience of disease within human populations. The tension is productive in that it functions to enable and require the continual effort at preparedness and response, even during non-pandemic periods.

Under the second theme, I discuss the transgression of constructed boundaries by the virus as a primary target of control mechanisms that aim to contain viral transmission. Specifically, I describe the representation of the virus in terms of its possible expansion through bodies, populations and territories; the projected distinctions in capacity for preparedness and response; and the construction of national risk in terms of shared borders and the notion of mutual vulnerability. I use the term ‘boundary’ to denote a constructed limit that distinguishes between two or more discrete entities, including human and non-human bodies at the micro level and national and regional territories at the macro level. This section discusses the ways in which boundaries are constructed and portrayed in order to regulate the interconnections between objects, spaces and beings. In this regard, the delineation and regulation of boundaries are key techniques in both the problematisation and governance of pandemic.
5.1 An uncertain, yet imminent, event

In this section, I present themes that together construct pandemic as simultaneously uncertain and inevitable. I begin by examining representations of the influenza virus with respect to circulation, potentiality and latency. Here I describe the shift in focus from an unknown viral strain to endemic H5N1 infection. Next, I address the representation of pandemic as a disruption of normal circumstances, and the corresponding integration of contingency mechanisms to address pandemic into everyday procedure. Finally, I examine the operation of seasonal influenza as a ‘flexible’ phenomenon taking multiple forms and functions throughout the texts. In a context where even the typical or normal activity of influenza viruses becomes incorporated into the realm of ‘risk’, I assert that this development further justifies constant attentiveness, surveillance and, above-all, the process of pre-emption in response to the threat. The representation of apparently normal circumstances as holding the potential to become a pandemic enables an expansion in terms of the possibilities and territory for the mediation of this problem, particularly with respect to the time-frame necessary for intervention.

5.1.1 Circulation, potentiality and the ‘latent’ virus

The ‘features’ of the virus are consistently addressed throughout the documents, and there is a striking attentiveness to describing and characterizing the influenza virus. Specifically, the virus’ natural predisposition to circulate within nature, along with its corresponding tendency to mutate or reassort, discursively structure the virus as an entity with potential. Within these descriptions, the influenza virus’ natural predisposition to circulate among animals is a recurring theme:

Many animal influenza viruses naturally infect and circulate among a variety of avian and mammalian species. (WHO 2009a:14)

The virus’ natural tendency to circulate is linked to the possibility for the emergence of ‘new’ influenza viral subtypes. For example, WHO 2005 includes the process of circulation within the definition of what constitutes a novel virus, where a virus that has not circulated in humans for many years constitutes a ‘new’ virus:

Definition of new: a subtype that has not circulated in humans for at least several decades and to which the great majority of the human population therefore lacks immunity. (WHO 2005:6)
The emergence of a novel virus is a precondition for pandemic emergence, but could also represent a more benign situation. This definition of a ‘new’ virus subtype indicates that the cause for concern is not the general process of viral circulation, but specific features of this circulation, as they relate to spread within the human population. The process of circulation is considered ‘normal’, and desirable even, when it occurs relatively regularly and results in a population’s immunity, but is deemed ‘risky’ if the virus is novel and has not circulated within a certain time frame.

The circulation of the influenza virus – through infection of animal or human populations, or both – is tied to the virus’ natural tendency to ‘mix’ (reassort or mutate) with other flu viruses or sub-strains, which results in the production of new viral strains and indicates the emergence of a novel influenza virus sub-type. This is a significant focus of the WHO 1999 document where the description of viral features serves as a key technique in enabling the forms and logic of pre-emption that characterize this contemporary discourse on emerging infectious disease governance. As described in the WHO 1999 document, the processes of circulation and transformation characterize viral activity in non-pandemic periods:

*During inter-pandemic periods, influenza viruses circulate* that are related to those from the preceding epidemic. The viruses are spreading among people with varying levels of immunity from infections earlier in life. Such circulation, *over a period of usually 2-3 years, promotes the selection of new strains which have changed* enough to again cause an epidemic among the general population; this process is termed ‘antigenic drift’. ‘Drift variants’ may have different impacts in different communities, regions, countries or continents in any one year, although over several years their overall impact is often similar. (WHO 1999:6)

During non-pandemic periods, the *influenza A and B viruses evolve* by accumulating mutations in the haemagglutinin (HA) and neuraminidase (NA) proteins. (WHO 1999:43)

These representations of the virus’ circulation focus on the role of genetic properties in determining the tendency of the influenza virus to readily reassort (due to the ‘segmented’ genetic make-up of the virus) when mixed infection occurs in pigs, for example:

*Due to the segmented nature of the influenza viral genome, genetic reassortment readily occurs during mixed infections.* It is thought that reassortment between avian and human viruses could take place in pigs, which appear susceptible to infections with some influenza viruses of human and avian origin (Scholtissek, 1987). (WHO 1999:43-4)
The potential reassortment or mutation that results from the flu virus’ tendency to circulate within nature in animal and human populations points to the characterization of the virus as a continually transforming and dynamic force.

Importantly, the construction of the virus as having a natural tendency to continually circulate and evolve is not linked to a fixed, or inevitably destructive, outcome. The processes of circulation and transformation are not framed as necessarily dangerous in and of themselves, but are rather described as leading to wholly benign results in most cases. The examples provided above each describe viral processes during inter-pandemic periods, where such changes result in the emergence of a ‘new’ seasonal influenza strain. At the same time, a key implication of discussions of the virus within these texts is that circulation and change do involve some level of inherent risk; while this risk is perpetually uncertain, it is also ubiquitous.

The process of reassortment is positioned as the cause for much concern, especially in early planning documents, and is a target of preparedness initiatives due to the potential that mutation or reassortment (through circulation) will lead to the emergence of a pandemic virus, that is, a new strain with different and more virulent properties. There is a corresponding uncertainty in terms of what constitutes ‘regular’ circulation or spread, and circulation or spread that would lead to a pandemic strain. While genetic changes from mutation and reassortment are taken as markers for potential pandemic emergence, they are simultaneously depicted as natural and everyday processes, and I argue that the two possibilities, benign and pandemic emergence, are discursively linked throughout the documents.

Following the establishment of circulation as a natural tendency of all influenza viruses, the documents discuss the transformation of viruses (e.g., through genetic reassortment) that lead to the emergence of pandemic viral strains:

In summary, each past pandemic resulted from: the emergence of an influenza A virus with a different haemagglutinin sub-type than strains circulating in humans for many preceding years… (WHO 1999:6)

The development of an influenza pandemic can be considered the result of the transformation of an animal influenza virus into a human influenza virus…through – Genetic reassortment: a process in which genes from animal and human influenza viruses mix together to create a human-animal influenza reassortant virus; Genetic mutation: a process in which genes in an animal influenza virus change allowing the virus to infect humans and transmit easily among them. (WHO 2009a:14)
While the H5N1 virus is currently the most visible influenza virus with pandemic potential, it is not the only candidate. Wild birds form a reservoir for a large number of other influenza viruses and influenza viruses are found in other animal species as well. *Any one of these other viruses, which normally do not infect people, could transform into a pandemic virus.* (WHO 2009a:14)

Together, these quotes impart an understanding that pandemic influenza strains are distinct from previously circulating strains, arise as a result of genetic reassortment or mutation, and represent a form of transformation of existing influenza viruses. What is interesting about these characterizations is that the processes associated with the phenomenon of pandemic emergence are the same processes that are presented as ‘natural’ and innocuous in other parts of the documents. In particular, the final quote speaks to the ubiquity of risk (and potentiality) in its acknowledgement of multiple possibilities for the transformation of an existing virus into a pandemic strain.

The ambiguity framing pandemic versus non-pandemic emergence coincides with the representation of unpredictability as inherent in the influenza virus:

At *unpredictable* intervals, however, novel influenza viruses emerge with a key surface antigen (the haemagglutinin) of a *totally different sub-type* from strains circulating the year before. This phenomenon is called ‘antigenic shift’. If such viruses have the potential to spread readily from person-to-person, then more widespread and severe epidemics may occur, usually to a similar extent in every country within a few months to a year, resulting in a pandemic. (WHO 1999:6)

[T]he species of *origin and sequence of progression of the next pandemic strain* may vary and thus be *difficult to predict*… (WHO 2005:6)

In nature, *influenza viruses circulate continuously among animals,* especially in birds. Even though *such viruses might theoretically develop into pandemic viruses,* in Phase 1 no viruses circulating among animals have been reported to cause infection in humans. (WHO 2009a:25)

Thus, the inherent unpredictability of the virus is cast in terms of its period of emergence, the species from which a pandemic strain would possibly originate and its general progression within animal and human populations. These areas of uncertainty contribute to the understanding that all influenza viruses have the biological potential to develop into a pandemic virus.
The representation that every influenza virus holds the potential to transform into the next pandemic strain, and the corresponding unpredictability with respect to such transformations, has significant implications for the responses that are developed in the documents following WHO 1999. The imbibed characteristics of the virus necessitate a mechanism that can provide ongoing responses to the virus, understood as a constantly transforming entity, where the potentiality inherent in circulation and mixing infers the need for a pre-emptive approach that is able to anticipate the viral transformation and adapt accordingly. More broadly, the ubiquity of risk portrayed in these documents contributes to the blurring of conceptual boundaries between pandemic and non-pandemic; risk is inherent in even the most ordinary of conditions due to the feature of potentiality that characterizes the influenza virus.

The expansion of the virus in host and territory is also framed as a key element of its potentiality, and the pandemic risk phases, described in Appendix B (Tables 1-3), corresponds with the predicted progressions of expansion. The expansion of the virus occurs largely through its evolving adaptability to the environment, animals, and finally, humans. For example, the WHO 2005 pandemic phase descriptions (Table 2) depict the virus as “becoming increasingly better adapted to humans” as the phases progress (WHO 2005:7). Along these lines, the pandemic virus is characterized as exceptional due to its spread in the human population, which, while unpredictable, is a key target of intervention in the early stages of pandemic preparedness that focus largely on the containment of the virus. In terms of intervention, it is this exceptional quality, the ease and expanse of spread of the pandemic virus that requires control and containment. This is most evident in discussions of the progression of pandemic phases, which are consistently presented as evolving scenarios characterized by an increase in the spread of the virus. This progressive expansion is discussed in relation to the virus’ hosts (e.g., animals and humans) and territory (e.g., local versus international spread), both of which will be discussed in section 5.2.1 of this chapter. While the pandemic phases change over the decade, the phase descriptions in each, depict a scenario of increasing corporeal and territorial spread, and further construct the virus as possessing potentiality in its capacity to transform which enhances the possibility of efficient human to human transmission, and in turn increases potential for territorial spread. Importantly, the virus may not progress in this manner – outbreaks may reach pandemic phase 3 and progress no further, for example – but the key point here is that all viruses are represented as having the potential to reach this final pandemic phase.
While this discussion of potentiality has considered the control of ‘natural’ vectors (i.e., animals such as birds) by the biological agent (i.e., the influenza virus) to complete the cycle of infection, the documents also refer to the social environment as increasing the possibility of viral spread. The focus on the circulation of the virus within human and animal populations coincides with the concern that the increased circulation of bodies and goods in a globalized economy may contribute to the spread of the virus. This concern is focused primarily on air travel, but speaks more generally to the increasing permeability of borders made possible by the rapidity of trade and travel in contemporary globalized contexts. The reference to air travel illustrates an anxiety that the circulation of the virus will be enhanced and expanded (across borders) through this vector:

However, current concerns about a future pandemic include the fact that the advent of air travel may hasten the spread of new epidemic strains. (WHO 1999:40)

Air travel might hasten the spread of a new virus, and decrease the time available for preparing interventions. (WHO 2005:3)

Importantly, these concerns about air travel correspond with the understanding of the influenza virus as possessing the capacity to harness the biological properties of animal and human bodies, but also technology (through circulation) to attain its ‘natural’ fruition. The portrayal of the virus as harnessing social and biological environments, contributes to the characterizations of viral potentiality and, at the same time, the employment of these vectors (i.e., environments) to further its interests implicitly supports a kind of biological agency that frames the virus.

With this in mind, the representation of viral potentiality at times takes on an almost opportunistic tone, where the emergence and spread of the virus are linked to its ability to adapt to and exploit natural and social contexts. This can be seen in the WHO 1999 document which discusses the theories of pandemic emergence. One such theory, the re-emergence of previously circulating influenza strains, is thought to be due to the pandemic virus being ‘hidden’ within an animal reservoir for an extended period of time:

If this theory of limitation on the sub-types capable of infecting and transmitting in humans is true, it is not known whether these sub-types can be maintained for 20-80 years between pandemics only in the form of animal influenza viruses, or in some other way. It is certainly difficult to explain the close overall similarity between the 1977 and 1950 type A (H1N1) viruses without invoking “dormancy”, which therefore should be considered, in theory, as a third possible mechanism for emergence of pandemic influenza viruses, despite the lack of knowledge of how influenza virus could remain hidden for many years. (WHO 1999:44)
The third theory [for the emergence of pandemic viruses] has been advanced to explain the reappearance of H1N1 virus in 1977 that resembled virus from 1950, although it is not currently understood where and how any influenza virus could remain unrecognized for many years. (WHO 1999:43)

These examples also speak to the fundamental reliance of scientific and medical knowledge, and parallel response mechanisms, on the ‘visibility’ of viruses. This confidence in visibility co-exists with the uncomfortable reality that some viruses may exist or persist beyond the purview of scientific recognition.

The idea that the virus could re-emerge after remaining dormant and unrecognized for many years attributes the possibility of latency to the influenza virus, which further reinforces the understanding of the virus as an enigmatic agent with the capacity to cause serious harm (even when in an inactive state). At the same time, the re-emergence of a dormant virus invokes a level of potentiality that has the unpredictability of the virus at its core. While the viral sub-strain can be concealed and inactive for decades, there remains the possibility that it will re-emerge from an unsuspected reservoir years later. Again, this speaks to the question of ‘visibility’ of the virus, and its connection to uncertainty. In the above quote, the ‘origin’ of the potential pandemic virus is unknown, and theories of ‘emergence’ further construct the virus as possibly hidden or concealed, but as possessing the capacity for emergence at any (unknown) point in time.

The WHO 1999 document conveys considerable uncertainty with respect to the source of emergence of a pandemic strain. Consistent with this uncertainty, it recommends that countries attend to all of the multiple possibilities for emergence. For example, WHO 1999 (the document that largely ‘sets up’ the problem of pandemic in reference to existing knowledge) calls for attention to those cases that do not involve the emergence of a ‘true’ pandemic virus:

A new pandemic virus may first be detected from significant and rapidly spreading outbreaks, as for example in 1957 and 1968. Nevertheless, it is important for effective planning to have a process which defines responses to alternative possibilities, such as the recognition of a new virus which does not spread and cause a pandemic, and the early detection of low-level spread of a true pandemic virus. (WHO 1999:8)

Pandemic planning must take into account not only the history to be learnt from true pandemics, but also the events following the appearance of new strains that did NOT cause pandemics. The most important examples of this have been in February 1976 in the US, and in May-December, 1997, in Hong Kong SAR…These three experiences
[including H9N2 in Hong Kong SAR 1999] have changed thinking about the origin of pandemics. (WHO 1999:39-40)

The focus on cases that do not culminate in pandemic spread suggests that even in the early stages of planning, conceptualizations of risk are extended beyond the category of extraordinary circumstances to encompass all alternatives and an ever-expanding scope of possible threat. Whereas the first planning document is focused on the emergence of a novel influenza strain, the focus of the later documents shifts and directs control toward existing disease within animal populations.

The recognition of endemic animal infection with H5N1 in certain countries represents a shift in understandings of emergence following WHO 1999. The detection of the virus becomes more tangible once the focus shifts towards the animal reservoir. Indeed, the recognition of endemic animal infection with the H5N1 virus is one of the reasons provided for the need to update the WHO preparedness plan in 2005:

This new plan addresses the possibility of a prolonged existence of an influenza virus of pandemic potential, such as the H5N1 influenza virus subtype in poultry flocks in Asia which persisted from 2003 onwards. (WHO 2005:1)

Five years after the widespread emergence and spread of H5N1, the virus is now entrenched in domestic birds in several countries. Controlling H5N1 among poultry is essential in reducing the risk of human infection and in preventing or reducing the severe economic burden of such outbreaks. Given the persistence of the H5N1 virus, successfully meeting this challenge will require long-term commitment from countries and strong coordination between animal and human health authorities. (WHO 2009a:14)

As the above quotes illustrate, between the years 2005 and 2009, the H5N1 virus becomes recognized as ‘entrenched’ within domestic birds and acquires the trait of persistence. I argue that the recognition and prominence of endemic H5N1 infection endow the problem of pandemic with a new visibility, not previously recognized in the WHO 1999 document, in which the focus of preparedness is an indeterminate threat. Furthermore, this visibility is crucial to control mechanisms that rely on existing knowledge of viruses to determine risk and possible intervention.

The condition of endemicity of the H5N1 virus in avian populations in some countries, and its potential to transform into a pandemic virus through increased adaptation to humans, is significant for the relationship that is forged between potentiality and uncertainty. The H5N1 virus provides a level of tangibility to the virus – in spite of continued uncertainty regarding
possible mutations of H5N1 – and the documents present it as a probable source of the next pandemic. At the same time, the concern regarding H5N1 detailed in the WHO 2005 and WHO 2009a documents co-exists with an openness to emergence from elsewhere (e.g., subtypes from H7 or H9 proteins), which re-establishes the considerable uncertainty in calculating the source of pandemic emergence:

In addition to H5N1, other examples of animal influenza viruses previously known to infect people include avian H7 and H9 subtypes and swine influenza viruses. The H2 subtype, which was responsible for the 1957 pandemic (but has not circulated for decades), could also have the potential to cause a pandemic should it return. The uncertainty of the next pandemic virus means that planning for pandemic influenza should not exclusively focus on H5N1, but should be based on active and robust surveillance and science-based risk assessment. (WHO 2009a:14)

While there seems to be an ongoing attempt to incorporate all possible sources of emergence (of pandemic viruses) into preparedness planning, these examples demonstrate the extreme difficulty in predicting the origin of emergence due to uncertainty. The development of endemic animal infection with H5N1 signifies the expansion of pandemic risk to incorporate viruses that exist and have not yet transgressed the animal-human boundary, but are thought to contain the potential for pandemic spread. This recognition expands potential risk to include the emergence of a pandemic virus from an existing and known virus through mutation or reassortment.

The recognition of endemic animal infection as a source of pandemic is reflected in the changes in pandemic phases from 1999 to 2005, where the latter document acknowledges the risk that animal infection poses to humans. Furthermore, WHO 2009a indicates that it is natural for avian and mammalian species to be infected with influenza viruses, but presents human infection with an animal influenza virus as an unusual or abnormal event. Where the pandemic phases outlined in the WHO 1999 document account for only human infection – that is, the inter-pandemic period that consists of four preparedness levels is characterized by only human infection – WHO 2005 incorporates animal infection in the absence of human infection into the inter-pandemic phases (Tables 1 and 2). The WHO 2005 interpandemic period is characterized by animal infection rather than human infection, and the distinction between Interpandemic phases 1 and 2 is made based on the risk of human disease from known animal infection (Table 2). Also of note in the above changes in interpandemic periods from 1999 to 2005 is that, in the latter plan, there is no longer a Phase 0 which characterizes a period of inactivity; instead phase 0 is replaced by phase 1 following WHO 1999 (Tables 1 and 2).
I contend that this switch from Phase 0 to Phase 1 to characterize the interpandemic period is reflective of a broader trend discussed throughout this work: the integration of pandemic into the ‘typical’ structures of social and political functioning. The undefined and unpredictable interval of emergence of novel strains of influenza is a significant feature of preparedness planning which involves the discursive blurring between pandemic and other viral strains. More specifically, the acknowledgement in WHO 2005 that influenza subtypes that have caused or could cause human infection will always be present in animals, provides a foundation for the conviction that, even if such viruses go undetected, inaction cannot be justified within the logic of preparedness. Importantly, this means that between 1999 and 2005, there is a significant development in the conceptualization of pandemic in a broader sense. If influenza viruses are always naturally circulating in animal populations, then there is no longer a (natural) state of infection that is not integrated into the pandemic response. Put another way, the ‘natural’ or ‘normal’ state of infection characterized by ongoing animal infection with influenza viruses is now incorporated into pandemic planning as a level of risk necessitating concern and action.

Along with risk, preparedness and planning (and correspondingly surveillance and response mechanisms) are thus brought into the interpandemic period, in which no known virus circulating in animal species has caused infection in humans. In a sense, this signifies a proliferation in the possibilities of risk, where the sites of risk are multiplied through the focus of preparedness on the animal population. At the same time, this modification of the pandemic phases re-locates risk from the future into the present in order to allow for planning and intervention. Animal infection with a novel virus is an ongoing and inevitable occurrence made tangible by the recognition of H5N1 endemicity, and this alone comes to signify a specific pandemic risk level in the 2005 document. This exemplifies an evolving response, where what is expected or ‘natural’ becomes incorporated into the realm of risk, and holds the possibility of becoming the exceptional pandemic. In a scenario where indicators of normality, such as animal infection, simultaneously represent the potential for pandemic, countries and other bodies are implicated in a continual process of preparedness that accounts for the multiplicities of emergence through contingency in numerous areas relevant to pandemic. These examples also point more generally to the objective of control of any and all sources of uncertainty. In this way, the attachment of all influenza viruses and related infections to the possibility of the
exceptional event of pandemic justifies the continuous regulation of uncertainty through the surveillance and control of ‘ordinary’ conditions.

5.1.2 Pandemic as ‘disruption’ of normal circumstances

A central and consistent theme recurring throughout the documents involves the representation of pandemic as ‘exceptional’ in its probable disruption of ‘normal’ circumstances. While relatively imprecise in terms of the particularities of pandemic consequences, it is suggested that when the pandemic virus does emerge and spread, it will disrupt the social order in some way. The later documents, WHO 2009a and WHO 2009b, are most explicit in their portrayal of the pandemic event as disrupting ‘normal’ circumstances. Again, the ‘normal’ or typical is the reference point and the objective is a functioning society and responsive health systems and essential services. These documents emphasize the interconnectedness between different sectors in society (e.g., the business and health sectors) and, as such, the disruption of certain services is presented as likely to impede the functioning of other essential services. The interference of pandemic influenza with routine features, essential services, and the structure of ‘normal’ society, is characterized as a divergence from the ‘everyday’:

Disruption of organizations may also have an impact on other businesses and services. For example, if electrical or water services are disrupted or fail, the health sector will be unable to maintain normal care. The failure of businesses would add significantly to the eventual economic consequences of a pandemic. (WHO 2009a:17)

While the specific set of essential services varies from country to country, there is a core set of essential services present in many settings: water and sanitation; fuel and energy; food; health care; telecommunications; finance; law and order; education; and transportation. The failure of one or more of these services can have major economic and social consequences, as well as impacting other essential services. (WHO 2009b:10)

The anticipation that a pandemic will threaten social functioning and result in the failure of underlying services, corresponds with the modification of ‘normal’ processes in order to enhance capacity to respond to pandemic. Examples of such adjustments include the mapping of critical interdependencies by businesses and other organizations and the development of contingency plans that mitigate the numerous dilemmas projected to arise in the event of a pandemic. The proposed modification of existing procedures in society to account for, adapt to, and mitigate pandemic (and other emergency) circumstances further obscures distinctions between normal and pandemic circumstances. In this sense, response mechanisms that are designed with the
flexibility to address ‘other’ possibilities or realities speak to a broader trend, where pandemic becomes increasingly implicated in the workings of supposedly ‘normal’ circumstances.

The integration of disruption into social organization will be addressed in further detail in Chapter 6, in relation to the theme of surveillance, containment and control (see in particular the *Changes to existing procedure: Anticipating the exception* sub-theme). However, the effect of the anticipation of exceptional circumstances advocated throughout the later two documents is of particular importance to my analysis. The idea that the failure of services represents the more general malfunction of society is undoubtedly the overriding justification for changes to procedure that might account for these possible failures. These recommended contingencies are a crucial technique of governance that makes possible the management of a pandemic (and other emergencies) before it occurs. The effect is a form of governance that is continuously engaged in the possibility of exception or crisis, as typified by pandemic. Furthermore, the distinction between pandemic and other circumstances diminishes through the continuous project of preparedness.

Another element in the integration of the exceptional into the everyday is seen through the recourse to ‘contingency’ through pandemic preparedness, particularly with respect to drug treatment and vaccination in the context of the typical and the extraordinary event. The WHO 1999 plan addresses the known effectiveness of two types of anti-influenza drugs, *amantadine* and *rimantadine*, for treating human and avian influenza sub-types that already exist. In 1999, these were key drugs in the prophylaxis and treatment of influenza A infection. In WHO 1999, these drugs are also presented as being potentially effective in treating a pandemic strain of influenza. Given the extraordinary circumstances of pandemic, the plan suggests that more planning that focuses on policies for drug use in the event of a pandemic is necessary, especially since drug access would likely be limited to specific, undefined, groups within the population. This objective indicates that the event of pandemic diverges from typical experiences of influenza in the need to provide more structure and organization to practical measures such as the distribution of drugs. In this respect, mechanisms designed to produce vaccine and antivirals for the prevention and treatment of influenza are representative of existing procedures constituting ‘normality’. Pandemic preparedness in this domain consists of the implementation of contingency measures that would allow for adaptation to the disruptive event of pandemic.
Planning and preparedness are thus engaged in the anticipation of the exception, as these processes are largely focused on contingency measures that would allow for changes to everyday or normal procedure. Particularly, the issue of exceptional measures to be enacted in the production and distribution of vaccine and antivirals in the event of pandemic is a key concern:

Other anti-influenza drugs with a different mode of action to amantadine and rimantadine appear promising in laboratory and clinical trials. However, policies are needed about the roles of these drugs in a pandemic situation, when they may for a time be the only specific measures with which to combat a new virus. Cost and supply problems make it unrealistic to consider them for widespread prophylactic use. Nevertheless, as part of pandemic planning, it would be appropriate, as a precaution, to ensure that mechanisms exist to import, license and use those drugs already approved in some countries, and to maintain a supply adequate for critical needs which might arise, such as protection of health care staff and laboratory workers who may be exposed to a new virus. (WHO 1999:53)

There are numerous references to pharmaceutical procedures that require contingency mechanisms within the WHO 1999 document. Other examples include decisions about vaccine strain recommendations and contingency planning for pre-clinical and clinical trials of vaccine. They demonstrate the early objective, made explicit in the WHO 1999 document, to expand knowledge of antivirals and vaccine development and distribution in the context of pandemic disease. Furthermore, these recommendations advocate for appropriate economic and legal mechanisms to enable the distribution and use of necessary pharmaceuticals during the pandemic event. By integrating the possibility of ‘crisis’ into the everyday, this focus on contingency measures for pharmaceutical procedures means that manufacturers can profit from the development and distribution of drugs and vaccine for a virus that has yet to officially exist. Moreover, this process of preparedness justifies state support of pharmaceutical companies in attempts to pre-empt crises through the development and purchase of antiviral drugs and vaccine.

Discussions of vaccine development and manufacturing are rare in the final three documents, which may coincide with advances in production techniques following 1999, and a change to other antivirals – Zanamivir and Oseltamivir – a topic which is absent from discussion subsequent to WHO 1999. The early focus on problems associated with vaccine production primarily portrays the elusive features of the emergent virus that may prohibit the rapid production of a pandemic vaccine and highlights the presumed limits of typical vaccine production:
In terms of managing the risk from a new virus, the situation in 1997 also indicated that assumptions about ability to make vaccine against a new virus must allow for the possibility of a strain that has biological properties which hinder the use of traditional vaccine production methods. (WHO 1999:32)

The representation of the pandemic virus as creating new challenges for traditional vaccine production is then followed by a discussion of the need to circumvent delays in pandemic production. The intensive focus on vaccine and antiviral development in WHO 1999 is indicative of the considerable reliance on such mechanisms for the containment and control of disease, and is more generally implicated in fostering demand for pharmaceuticals to treat a disease, which at this point is unrealized. This observation has broader economic implications in its relevance to profit speculation by pharmaceutical companies. The representation of seasonal influenza as a flexible phenomenon with respect to its multiple functions, and in relation to vaccine and drug procedures, contributes to the more general construction of influenza viruses as inherently unstable entities which thus require flexible interventions. Furthermore, this portrayal of flexibility contributes to the construction of ambiguity between pandemic and non-pandemic contexts.

5.1.3 Seasonal influenza: A flexible phenomenon

The lack of distinction between what is deemed ‘normal’ versus ‘pandemic’ viral mixing rationalizes an approach to governance that involves the incorporation of so-called normal circumstances into a model of constant preparedness. Of note here is the frequent reference to ‘typical’ or ‘seasonal’ influenza activity in terms of its emergence and spread, characteristics of disease, and treatment and vaccine for associated illness. The terms ‘seasonal’ or ‘typical’ influenza are used to describe outbreaks of human disease which do not characterize pandemic or other unusual cases of influenza infection. The designation of influenza as typical or seasonal generally depends on its correspondence with characteristics, such as the severity of the illness in the general population and the specific populations that experience severe forms of illness (e.g., the elderly or immunocompromised). In past pandemics, these characteristics deviated from those of seasonal influenza.

Seasonal influenza functions as both a referent by which to distinguish a pandemic event, and also provides a (precarious) foundation for knowledge about the possible features of a future pandemic. This is particularly the case for the WHO 1999 and WHO 2009a documents, where
knowledge of the characteristics of disease resulting from seasonal influenza infection is explicitly positioned as a tool to further understand possible pandemic characteristics:

In *epidemics and pandemics* the overall attack rate is relatively high and occurs during a few weeks in any one location. Consequently, even a low frequency of complications results in measurable increases in rates of hospitalizations, and often in mortality...Analysis of hospital records and mortality statistics over many years provides evidence of the role of influenza as the primary cause of serious complications in both previously healthy persons and those with prior underlying conditions (Collins, 1953; Glezen, 1987). (WHO 1999:34)

*Modes of virus transmission of pandemic influenza* are expected to be *similar to those of seasonal influenza*: via the large droplet or contact (either direct or indirect) route, with a contribution by particle airborne route, or a combination of both. (WHO 2009a:49)

In addition to attack rates and modes of transmission, the clinical symptoms of pandemic are expected to be similar to those of seasonal influenza. These examples illustrate specific ways that the features of seasonal influenza are expected to mirror pandemic features and, thus, provide a foundation for knowledge and planning that aim to control and contain the virus. The description of attack rates and modes of transmission for epidemic and pandemic influenza as analogous further contributes to the discursive blurring of normal and exceptional conditions.

At the same time, it is projected that certain, indeterminate, features of the disease and disruption attributed to a pandemic strain will diverge from those of seasonal influenza. The WHO 2009a document differs from WHO 1999 in its treatment of the H5N1 virus as an exemplar of ways in which a pandemic virus may differ from seasonal influenza:

The *incubation period of H5N1 human cases* (7 days or less; mostly 2 - 5 days) appears to be *longer than that of seasonal influenza*. In clusters in which limited human-to-human transmission has probably occurred, the incubation period appears to be approximately 3-5 days, although in one cluster it was estimated to be 8 - 9 days. (WHO 2009a:51)

In terms of the characteristics of illness caused by typical influenza, seasonal influenza also operates as a marker for detecting anomalies from the usual or expected in influenza activity, and this means that seasonal influenza must be treated with some level of attentiveness:

An *unusual cluster of cases or deaths* from influenza-like illnesses can be defined as a group of cases (suspected, probable and/or confirmed) of individuals with disease onset within a period of two weeks in a same defined geographical area, presenting with similar clinical features including respiratory symptoms, and *for which the epidemiological pattern or clinical features do not correspond to usual observation in cases of infection with seasonal influenza*. These unusual observations may include: (i) unusual distribution by age group; (ii) severity of illness in adults in the absence of chronic disease; (iii)
disease affecting special risk groups such as individuals exposed to potentially infective live or dead animals, or healthcare workers. (WHO 2005:8)

In the same vein, the seasonal influenza virus and disease activity associated with ‘typical’ influenza, function as a means of distinguishing between pandemic and non-pandemic periods. Thus, seasonal influenza acquires the dual function of providing a foundation of knowledge for certain aspects of the pandemic experience, as well as operating as a referent through which to determine unusual or atypical influenza activity.

Another example of this is in the treatment of the post-pandemic phase, where disease activity is seen as returning to the ‘normal’ levels ascribed to seasonal influenza. At this point, the pandemic virus is expected to have ‘run its course’ in the population after the usual sequence of events predicted by the pandemic phases, and the virus becomes wholly integrated into the population as signified by widespread immunity to the virus:

WHO will report when the Pandemic Period has ended, which is likely to be after 2-3 years. The indications for this will be that that indices of influenza activity have returned to essentially normal inter-pandemic levels, and that immunity to the new virus subtype is widespread in the general population. Major epidemics would not be expected again until antigenic variants begin to emerge from the prototype pandemic strain. (WHO 1999:16)

In the post-pandemic period, influenza disease activity will have returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus. At this stage, it is important to maintain surveillance and update pandemic preparedness and response plans accordingly. An intensive phase of recovery and evaluation may be required. (WHO 2009a:26)

The pandemic virus is represented as progressing into a normal state following an order of events marked by possible indicators of pandemic, such as high rates of infection, severity of illness in some social groups and general social and economic disruption.

In this way, just as influenza viruses are depicted as possessing levels of potentiality in terms of their possible transformation into a pandemic virus, the pandemic virus holds the promise of returning to normality. At this time, surveillance activities continue and the need for a period of recovery and evaluation is projected:

Postpandemic period: A return to the interpandemic period (the expected levels of disease with a seasonal strain) follows, with continued need to maintain surveillance and regularly update planning. An intensive phase of recovery and evaluation may be required. (WHO 2005:9)
Post-Pandemic Period: Levels of influenza activity have returned to the levels seen for seasonal influenza in most countries with adequate surveillance...The focus of the post-pandemic period is restoration of normal health and social functions while addressing the long-term health and social impact of the pandemic. (WHO 2009a:11)

The focus on the post-pandemic period becomes increasingly evident in the later plans, and significantly coincides with the call to integrate pandemic into broader disaster or emergency management structures (this will be discussed in further detail in Chapter 6 on ‘Integrating pandemic’). For example, the WHO 2009b states that “[p]lanning should be based around three crisis management stages (readiness, response, and recovery)” (p. 7). This development signifies a shift toward consideration of the post-pandemic recovery in combination with preparedness and response activities, and represents an entire cycle of risk management connecting these stages.

In terms of conceptualizing the pandemic event, this also extends the period of intervention beyond the pandemic similar to the interpandemic expansion. The description of unusual cases within the pandemic alert period demonstrates the deviation of pandemic illness from cases of infection from ‘normal’ or ‘seasonal influenza’. Here, the divergence of epidemiological patterns and clinical features of pandemic disease from usual observations associated with seasonal influenza is a cause for concern. Furthermore, the co-circulation of seasonal strains with other influenza strains is presented as possibly proliferating risk. This is, in part, due to the potential for seasonal strains to reassort with a pandemic strain and obstruct surveillance of pandemic strains:

In consideration of downscaling, the following criteria will be used...A risk assessment considering the factors that led to designation of the phase, as well as other potential factors. For example, if the respiratory illness season is in progress in the region, downscaling might sometimes be delayed because of the increased risk that new strains might reassort with seasonal strains, and that surveillance to detect new strains co-circulating with seasonal strains might be more difficult. (WHO 2005:9)

WHO Actions: Support establishment of mechanisms for producing/obtaining seasonal and pandemic prototype vaccines for possible targeted use as a measure to reduce pandemic risk during prolonged pandemic alert periods. (WHO 2005:18)

The objective of obtaining and distributing seasonal vaccine in non-pandemic periods implies that the control of seasonal influenza may decrease pandemic risk.
In all of these examples, seasonal or typical influenza serves multiple functions as: the basis for knowledge of pandemic; a referent to detect anomaly from usual circumstances; implicated in risk proliferation through its propensity for mixing; and an indicator of a return to normal circumstances. I maintain that such flexibility in the understanding and use of seasonal influenza is highly significant to the preceding discussion of pandemic versus usual circumstances. Furthermore, the representation of seasonal influenza as a flexible entity, enacting multiple functions is thoroughly connected to the objective of adaptability framing response mechanisms. The flexibility attributed to seasonal influenza is implicated in the method of remaining open to the possibilities of emergence. Finally, the operation of seasonal influenza in multiple roles, in terms of its distinctness and resemblance to the pandemic virus and in its possible elevation of risk of pandemic, contributes to the broader conceptual confusion between pandemic and normal circumstances.

5.2 Delineating and regulating boundaries

In the previous section, “An uncertain, yet imminent, event,” I described a particular ontological construction of the virus in terms of its biological potentiality, along with the discursive structuring of the distinction between pandemic versus non-pandemic conditions as increasingly blurred. This particular construction of viral potentiality necessitates the delineation and regulation of boundaries as part of the response to pandemic. The representation of a virus that proliferates corresponds with the demarcation of boundaries between different forms and requires the delineation of mechanisms that target possible boundary-crossings. In this section, I focus on the regulation of boundaries as an attempt to control the spread of infection. I begin by discussing how descriptions of boundary transgression by viruses come to represent a form of viral expansion across bodies, the population and territory, a point which also relates to my preceding analysis of biological potentiality. I then suggest that the delineation of boundaries project new distinctions between countries’ capacities to prepare and respond and between experiences of pandemic. In this context, the portrayal of the virus as an entity that disregards political and territorial boundaries frames understandings of mutual vulnerability as an effect of contiguous borders, and summons national responses that account for shared risk.
5.2.1 An expanding virus: Bodies, populations and territories

The transmission of influenza viruses occurs through the transgression of pre-established corporeal boundaries. As such, there is considerable focus on the boundaries between humans within the documents, in the sense that contact or close contact with other humans is understood to be a pre-condition for viral transmission. This understanding corresponds with the knowledge that, in order for a pandemic to occur, there must be high human-to-human transmissibility:

In summary, each past pandemic resulted from...a high proportion of susceptible people in the community...and high person-to-person transmissibility of the new virus, with accompanying disease. (WHO 1999, 6)

An influenza pandemic occurs when an animal influenza virus to which most humans have no immunity acquires the ability to cause sustained chains of human-to-human transmission leading to community-wide outbreaks. (WHO 2009a, 14)

The role of human-to-human transmissibility in characterizing a pandemic is representative of a broader concern with human interaction as a determinant of risk. As such, the elaboration of pandemic risk through pandemic phase descriptions and other tools includes infection scenarios that delineate possible routes of spread through human contact.

More specifically, WHO 2005 provides examples of possible transmission scenarios throughout the pandemic phases that each centre on contact between human bodies. Epidemiological explanations of modes of infection centre on the closeness of human bodies. In this respect, the interconnectedness of humans through a variety of social relations is conceived of as heightening ‘risk’ in multiple ways – through transmission, but also in terms of elevating the possibility of the undesirable change of viruses. Not surprisingly then, the response to controlling disease is through the promotion of vaccination of populations, as well as maintaining ‘social distance’ between infected people and limiting human contact, which are each presented as possible methods to reduce the spread of disease:

Reducing the spread of disease will depend significantly upon increasing the ‘social distance’ between people. Measures such as individual/household level measures, societal-level measures and international travel measures, and the use of antivirals, other pharmaceuticals, and vaccines will be important. (WHO 2009a, 28)

Concerns surrounding the proximity of bodies and human contact are also addressed in terms of the potential response to pandemic, for example, through the identification of contacts, possible school closures and cancelling scheduled events. In the ‘Issues on which national
policy decisions will be needed’, the WHO 1999 document raises a number of queries about the possible impact of social distancing measures:

*What if any liability accrues to governments or health care providers for harm caused through emergency actions, including...cancelling major public gatherings such as concerts or sports events (if so recommended), imposing a quarantine or travel restrictions, or closing schools?* (WHO 1999, 29)

Public health measures, such as *quarantines* and *school and business closures* might place serious burdens on society and individual liberties, especially if they are implemented on a wide scale. *Governments should carefully weigh the risks and benefits of far-reaching restrictions on movement* and implement these measures in a way that respects individual rights. (WHO 2009b, 14)

Such directives indicate the reluctance by WHO to provide explicit recommendations regarding response measures that may be seen as disrupting social and economic functioning and limiting individual freedoms. The hesitation to provide guidance that would limit social contact is evidently motivated by concerns about government responsibility and accountability for economic and other consequences resulting in the cancellation of public gatherings and other control measures. While these quotes express the recognition that social interaction is a means through which transmission occurs, I propose that they also suggest some level of resignation to the inevitability of such contact. The ambiguous nature of this guidance reflects the need to ‘weigh’ the risks and benefits associated with restricted movement, and acknowledges the discretionary nature of responses invoked, which are conditional on the (unknown) specifics of pandemic in a particular place.

The WHO 2005 plan includes “Recommendations for nonpharmaceutical public health interventions” and details possible measures to be implemented at the national level for persons living or traveling within an affected country. Measures to reduce the risk that contacts transmit infection during specific phases include the: “[t]racing and follow-up of contacts; [v]oluntary quarantine (such as home confinement) of healthy contacts with health monitoring, [and] provision of] medical and social care; [s]elf-health monitoring and reporting if ill but no restrictions on movement” (WHO 2005:42). Recommended nonpharmaceutical measures to increase social distance at the national level include possible,

“[v]oluntary home confinement of symptomatic persons; [c]losure of schools...in conjunction with other measures...to reduce mixing of children; [and] population-wide measures to reduce mixing of adults (furlough non-essential workers, close workplaces, discourage mass gatherings)” (WHO 2005:43).
In addition, recommended measures for individuals entering or leaving an infection area within affected countries are limited to directions “to avoid contact with high-risk environments (such as infected poultry farms, live-poultry markets) [and] recommended deferral of non-essential travel to affected areas” (WHO 2005:44).

Other than recommendations of limited contact with high-risk areas, such as live-poultry markets, these examples also demonstrate a hesitation to advise extensive restrictions in movement. In fact, most of the guidance for limiting movement and travel are focused on the voluntary actions of individuals. These advisories correspond with an underlying apprehension regarding an uncompromising restriction of the circulation of bodies that might result in unnecessary disruption to social functioning or legal consequences for national bodies. These directives, which advocate for the consideration of individual rights in light of widespread measures that restrict population movement and interactions, also speak to the broader political emphasis on Western notions of liberty as individual freedom from state and other intervention. The boundary regulation that occurs in relation to social contact between humans primarily involves the delineation of specific modes of communicability and related areas of decision-making. The regulation or control of these sites, beyond surveillance mechanisms supervised by WHO, is largely left to the discretion of national and sub-national bodies and the WHO generally avoids explicit recommendations of restricted movement.

Another central focus in these documents is on the boundaries between people and animals, which are typically depicted as sites of potential risk. This again points to the importance of increased scrutiny of spaces where animal and human bodies intersect and converge. For example, the WHO 2005 document explicitly acknowledges the human risk attributed to animal infection:

- The presence of animal infection caused by a virus of known human pathogenicity may pose a substantial risk to human health and justify public health measures to protect persons at risk. (WHO 2005:6)

The surveillance of boundaries extends from a focus on human bodies to one that includes animal viruses and may result in the creation of a ‘new’ viral strain. That is, the between-spaces separating human and animal bodies are discursively constructed as sites of vulnerability, largely due to the possible viral transgression of species boundaries.
The regulation of animal-human boundaries functions to enable the inevitable coexistence of human and animal bodies. This regulation operates in a number of ways in WHO 1999, such as through increasing research and knowledge pertaining to the “relationship between human and animal [viral] strains” (WHO 1999:9). The assignment of Collaborating Centres by WHO for studying animal-human strains is relevant in its effect of integration of this particular realm of uncertainty into the network of surveillance. Furthermore, the control of viral activity within animal populations is an additional objective of animal-human boundary regulation, and in the documents following 2005 refers to partnership and collaboration with relevant bodies, such as the Food and Agricultural Organizations of the United Nations (FAO) and the World Organisation for Animal Health (OIE) “for issues relating to infection in animals” (WHO 2005:9). A final objective of animal-human boundary regulation involves the prevention of transmission and ‘mixing’ of viruses between animal and human populations. The attempt to represent scientific knowledge in terms of the relationship between animal and human viral transmission is indicated by the description of the three theories for emergence of pandemic viruses: genetic reassortment; direct transfer; and re-emergence. The first two of these theories depict different relationships between animals and humans which can result in the emergence of novel viral strains. Genetic reassortment occurs “in humans or between human and animal viruses” and “direct transfer of viruses [occurs] between animals and humans” (WHO 1999:43). These examples portray the interconnection of bodies, animal and human, as sites of risk due to the possible transmission that may result from such contact. Consequently, these points of contact require surveillance and control.

The viral transgression of human-human and animal-human boundaries is part of a broader discursive structuring of infection that constructs the virus as a colonizing entity in its capacity to extend across bodies, populations (animal and human) and territories. The regulation of boundaries between bodies links to the construction of the virus as a force that is prone to corporeal and territorial expansion. A specific representation of concerns about viral expansion can be seen in the recognition of endemic animal H5N1 infection in avian populations in the WHO 2005 document, marking a transformation in the pandemic risk phases. In WHO 1999, only human infection was recognized in the pandemic risk phases, whereas animal infection is considered to be a significant risk to the human population in the WHO 2005.
The H5N1 virus is presented as a particular and pertinent case of continuous animal infection that is a serious risk to human health:

This new plan addresses the possibility of a prolonged existence of an influenza virus of pandemic potential, such as the H5N1 influenza virus subtype in poultry flocks in Asia which persisted from 2003 onwards. (WHO 2005:1)

Since its widespread re-emergence in 2003-2004, this avian virus [H5N1] has resulted in millions of poultry infections and over four hundred human cases. (WHO 2009a:14)

...the virus is now entrenched in domestic birds in several countries. Controlling H5N1 among poultry is essential in reducing the risk of human infection… (WHO 2009a:14)

Although the spread of human disease from H5N1 is limited in WHO 2005 and WHO 2009, the persistence of disease in poultry flocks is tied to the aforementioned concern that the virus would effect some form of transformation and thus result in increasingly widespread human infection.

As of 2009, transmission of the H5N1 virus from bird-to-human or human-to-human did not readily occur, and such transmissions are represented as occurring primarily when there is little separation between close social contacts or when individuals come into close contact with infected poultry. For example, infection would occur primarily through exposure to domestic birds, or to those who work with infected chicken and poultry, or to the caregivers of infected humans:

The primary risk factor for a human to acquire a zoonotic H5N1 infection is direct contact or close exposure to infected poultry, although the virus remains difficult to transmit to humans. (WHO 2009a:14)

On rare occasions, H5N1 has spread from an infected person to another person – most often a family or other household member acting as a caregiver. (WHO 2009a:14)

Consequently, the risk of acquiring H5N1 is represented as linked primarily to the proximity of humans and animals. At the same time, the concern expressed in relation to H5N1 is that the virus could become transmitted with increasing ease between humans, thus signifying the crossing of multiple bodily and territorial boundaries and its expansion out from the (animal) source through the general (human) population.

The interest in infection in animal populations is part of a broader concern with the transgression of corporeal and territorial boundaries by the virus; the risk of pandemic evolves and increases with each episode of viral transgression. The beginning of the pandemic alert phase in WHO 2005 and WHO 2009a is represented as the point at which an animal virus
acquires the ability to infect humans. The following phases are characterized by the spread and expansion within the human population, accompanied by an “upward shift” in risk:

The ability to cause sustained disease outbreaks in a community marks a significant upwards shift in the risk of a pandemic. Any country that suspects or has verified such an event should urgently consult with WHO so that the situation can be jointly assessed and a decision made by the affected country if implementation of a rapid pandemic containment operation is warranted. (WHO 2009a:25)

Here, the expansion of the virus throughout the human population by sustained transmission is linked to an elevated risk of pandemic. Following human infection, the virus is presented as having transformed from its original animal form into a human form of the influenza virus:

The development of an influenza pandemic can be considered the result of the transformation of an animal virus into a human influenza virus. (WHO 2009a:14)

Thus, and related to the previous discussion of viral potentiality, it is noteworthy that in order for these multiple transgressions to occur, there must first be a transformation of the virus. At the same time, in order for certain transformations (e.g., genetic reassortment) to transpire, some form of boundary transgression by the virus is required. Once such a transformation has transpired, the progression in pandemic phases indicates an evolving scenario, where infection with the virus is increasingly expansive in its spread throughout the population. The delineation of a number of interconnections and proximities as inherently risky speaks more broadly to the function of planning in the uncovering of multiple sites for the regulation and control of risk in the ongoing process of pandemic preparedness. These examples of interconnections between humans and between animals and humans are also indicative of the potentiality of the virus to traverse populations and territories.

The influenza virus is also represented as distinctive in its propensity to expand within populations by crossing, or transgressing, geopolitical borders. I assert that this representation is framed by a broader discourse within popular and scientific arenas, which maintains that viruses, in general, do not ‘recognize’ or ‘respect’ political or social borders. In this regard, influenza viruses resist and destabilize constructed geopolitical boundaries. A prime example of geographic or territorial boundary delineation and regulation in the WHO 1999 document is demonstrated by the differentiation between phases based on geographic location and spread. In this scheme, the crossing of national and regional territorial borders by the virus corresponds with a heightened risk of pandemic alert and is ultimately what constitutes a pandemic.
designation. The circulation and evolution of the virus is represented as an exercise in territorial expansion. For example, Phase 0, Preparedness Level 3 is characterized by “at least one outbreak lasting over a minimum two week period in one country. Identification of the new virus sub-type in several countries, with no explanation other than contact among infected people, may also be used as evidence for significant human transmission” (WHO 1999:12). This example reflects the understanding that the spread of the virus within multiple countries (without alternate explanation for the multiple geographies of infection, such as several different animal sources of transmission), demonstrates the virus’s harnessing of humans to effect its territorial expansion, and thus signals an increase in pandemic risk.

This WHO 1999 pandemic phase is followed by a territorial spread to other countries in phase 1 representing the onset of pandemic: “The pandemic will be declared when the new virus sub-type has been shown to cause several outbreaks in at least one country, and to have spread to other countries” (WHO 1999:14). Here the spread of the virus across territory includes expansion within one country (designated through multiple outbreaks), in addition to spread across national borders. Regional and multi-regional outbreaks and epidemics characterize the pandemic phase 2, and consequently represent an expansion of the virus over several territories. Where the initial pandemic risk phases (i.e., the ‘preparedness’ phases) are characterized by human infection and transmission, the actual pandemic risk phases are determined by territorial spread. This is not to suggest that the two are distinct processes. Of course, the territorial expansion of infection is made possible by human transmission, but it is perhaps significant that these two conceptualizations are separated in the WHO 1999 document’s elaboration of the pandemic phases. At a minimum, the designation of pandemic based upon territorial expansion beyond national borders signifies the casting of pandemic as a truly global phenomenon. Furthermore, the specific criteria for determining pandemic levels no doubt contribute to the consolidation of power by WHO in determining pandemic. That is, these indicators operate as legitimizing devices in justifying WHO decision-making with respect to the pandemic phases.

The WHO 2005 document also makes reference to the potential transgression of geographic boundaries, where the sharing of national and other political borders is used to understand and explain possible patterns of cases of infection. Here, localized spread of the virus within smaller geographic spaces signifies cause for alarm, but does not constitute an actual pandemic and rather suggests the need for some level of containment. Also, geographically-
connected areas are linked in terms of common scenarios of infection, where the physical proximity of these areas indicates some level of shared risk in terms of the spread of disease. At the same time, while territorial expansion is a general indicator of increased pandemic risk, there are no references to specific ‘countries’ or ‘regions’ in the pandemic phase descriptions in WHO 2005. Instead, geography is described much more vaguely, in terms of connected ‘areas’ or ‘communities’. For example, during pandemic alert phase 4, spread of infection scenarios include the: “[a]ppearance of a small number of human cases in one or several geographically linked areas without a clear history of a non-human source of exposure, for which the most likely explanation is considered to be human-to-human transmission” (WHO 2005:8). Furthermore, the pandemic phase in WHO 2005 is characterized by “increased and sustained transmission in the general population” (WHO 2005:9). This description is not elaborated upon in geographical terms, except for rationalizing the response which represents a “[m]ajor change in global surveillance and response strategy, since pandemic risk is imminent for all countries. The national response is determined primarily by the disease impact within the country” (WHO 2005:9). While these examples illustrate the lack of specificity in territorial spread accompanying pandemic risk phases, they are also in accordance with representations of territorial expansion by the influenza virus as a developing scenario in pandemic risk.

Perhaps even more so than the WHO 1999 pandemic phases, the WHO 2009a phases are explicit in their depiction of territorial spread of the pandemic influenza virus. In fact, the WHO 2009a document is the only one to include the geographical spread of disease in the defining of pandemic, where the pandemic phase is based on the spread of disease in countries in WHO-defined world regions. While the spread of infection in the four phases preceding pandemic is characterized in terms of ‘community-level outbreaks’, the pandemic phases 5 and 6 are defined entirely according to the territorial reach of the virus. Thus, the pandemic phase 5 is determined by “sustained community level outbreaks in two or more countries in one WHO region” and pandemic phase 6 is characterized by the same criteria in phase 5, plus “sustained community level outbreaks in at least one other country in another WHO region” (WHO 2009a:11). Also of significance here, is the introduction of the WHO world regions, which overtly constructs pandemic according to geopolitical boundaries established by the WHO. The tendency of the virus to expand both in the population and territorially is central to representations of the influenza virus as having the capacity to colonize individual bodies, territories and populations.
This expansion is depicted as occurring on multiple levels, such as the corporeal and the territorial, through infected bodies.

Through these representations, the influenza virus is constructed as transgressive in its indifference to social and political boundaries. In this sense, the expansion of the virus through populations and territory is symbolic of a viral colonization of the individual body and the global body politic. Moreover, representations of the virus as disregarding political boundaries signify a broader harnessing of economic and social machinery at the global level, and this is reflected in the WHO’s response to pandemic through preparedness initiatives.

5.2.2  Projected Boundaries: Distinctions in preparedness and response

The documents contain what I term ‘projected boundaries’, which involve the anticipation of distinctions between nations on the basis of their relative capacity to prepare and respond to pandemic. This signifies additional symbolic demarcation according to territorial borders, itself a key component in the regulation of pandemic, before and during the event. In this sense, the plans acknowledge differences in terms of capacity to respond (e.g., with adequate surveillance) which are vaguely attributed to the limited resources possessed by countries. The acknowledgement of these differences can be conceptualized as a form of boundary delineation according to variations in the material circumstances (e.g., infrastructure or surveillance systems) of States. Such distinctions are particularly relevant, given the discursive construction of the mutual vulnerability of states described below in section 5.2.3.

The WHO 2009a plan attends to the likelihood that the experience of disease will vary by country. It acknowledges a possible distinction in severity of disease across countries and recognizes that global and national severity levels may not be identical. In addition, there is the acknowledgement that national responses may vary, due to vaguely-defined factors such as different access to resources or different contexts. For example, in WHO 2009a the effects of pandemic are expected to vary and these differences are attributed to the media (interestingly, discussion of the media is not a theme that is elaborated upon in detail, beyond mention in the communications planning area) and to the country’s level of preparedness:

Pandemic severity may be assessed in many ways. One fundamental distinction is an assessment based on direct health effects as opposed to one based upon societal and economic effects. While societal and economic effects may be highly variable from country to country and dependent upon multiple factors (including the effects of the
media and the underlying state of preparedness), WHO plans to assess pandemic severity based primarily on observable effects on health. (WHO 2009a:22)

There are frequent representations of the expectation that experiences of pandemic will vary according to country and, thus, the general global assessment of severity (presented by the pandemic phases) may not correspond with the national severity and the “[f]eatures of the next pandemic will not be uniform worldwide” (WHO 2009a:49). National variations are expected in terms of mortality, hospitalizations, and the duration of pandemic waves:

Since *national circumstances will vary in terms of disease activity and capacity to respond*, caution should be exercised in directly linking severity assessment at a global level to actions at the national level. (WHO 2009a:22)

*Wide variations in clinical attack rates among different age groups and localities have been observed with previous pandemics.* Countries are encouraged to estimate clinical attack rates based on their own data and experiences. (WHO 2009a:52)

*Duration of a pandemic wave* is expected to be from several weeks to a few months, but will likely vary from country to country; within a single country variations may be seen by community. (WHO 2009a:54)

The acknowledgement of particularity in national experiences of infection and disease will be discussed further in Chapter 6, but this focus on non-uniformity suggests that while the influenza virus may generally and uniformly disregard boundaries, its effects across countries and other bodies, will be variable. Again, these references are insinuating material differences according to context, but do not extend beyond this to describe exactly what these materialities entail.

The WHO 1999 document identifies a number of key international bodies that will be consulted to assist countries with ‘limited capacities’:

WHO will seek support in *mobilization of resources for countries with limited capacities through partnership with organizations* such as UNICEF, the International Federation of Red Cross and Red Crescent Societies, the World Bank, and international relief agencies. (WHO 1999:14)

Of note here is the absence of clarification regarding the causes (e.g., economic, political) of limited resources or even the identification of factors that shape differing capacities for response. There is further elaboration regarding the needs of non-industrialized countries with respect to the equitable distribution of vaccines:

Without a “*clearing house*” to balance demand and supply, cost considerations rather than public health may drive vaccine distribution needs. *The needs of non-industrialized countries without any resources to purchase vaccines may be completely overlooked.* A
mechanism such as a central clearing house, operated and funded by a number of co-operating countries, might allow for vaccine purchases to be “pooled” and distributed more equitably than otherwise. Such a system could also ensure that a portion of vaccines is purchased as a humanitarian donation for use by designated population sectors in non-industrialized countries, such as health care workers, pregnant women or others with high risk of exposure and severe disease who play essential long-term roles in society. (WHO 1999: 51)

This reliance on international aid to address inequalities in national capacity to respond and access resources is a recurrent theme. Despite the role of WHO as the global health institution, the documents only refer to consultation with other international bodies and appeal to the good will of wealthy countries to assist with the preparedness of other countries. This may be attributed, in part, to the evident desire to be seen as respecting national sovereignty. As stated in WHO 1999:

In recognition of the individuality of countries, as well as the unpredictability of influenza, this document emphasizes the processes and issues appropriate for WHO and NPPCs, but does not provide a “model plan”. (WHO 1999:5)

Nevertheless, the refusal of the WHO to engage in any kind of overtly political deliberation is itself revealing – no doubt this omission is at the expense of those countries with ‘limited resources’ and to the advantage of those with abundance. Such planning obscures issues of inequality in economic and political relations, in favour of an assistance-based approach that draws legitimacy from the notion of a shared global vulnerability.

The language describing national differences in capacity to prepare and respond shifts slightly in WHO 2009a and WHO 2009b documents, where countries are invited to “consider providing resources and technical assistance to resource-poor countries with foci of influenza activity” (WHO 2009a:31). Furthermore, some planning recommendations in these documents are based on “countries with adequate surveillance” (versus those without) as a foundation for decision-making and action (WHO 2009a:11). This distinction has considerable implications for understandings of participation within the global system of preparedness, and suggests that there are limitations to integration of those countries without adequate surveillance mechanisms.

Despite the general categories of national differentiation, such as those ‘with adequate surveillance’, there is very little mention of specific countries or even regions. One exception is in the WHO 1999 document which locates China and the Hong Kong Special Administrative Region (SAR) as a geographic region where viral transgressions are likely to occur. In this
respect, features specific to China are cited as increasing the possibility of emergence of a novel virus. For example, China is regarded as a key environment for the cross-infection of animal and human viruses:

China has a large population and many communities practice both pig and duck farming. Also, there is wide climatic variation from North China to South China, so that influenza infections of humans occur normally every month of the year somewhere in this single country. This combination of factors could be the key to the origin of influenza pandemics. Thus, it is possible that the agricultural practices and ecological circumstances in this area provide continual opportunities for the co-infection of animals to occur with human, avian and swine influenza viruses. Such co-infections would enable reassortants to arise, from which those with human epidemic properties could then be selected through a series of transmissions between animals or humans over an extended period of time. (WHO 1999:44)

The interaction between human and animal populations, characteristic of this country, is presented as creating ideal conditions for the emergence of a pandemic strain through the continual prospect of co-infection with animal and human viruses:

Reassortment could possibly occur by mixed infection in swine, which can be susceptible to viruses from avian and human sources. Agricultural practices and ecological circumstances in China and in other comparable locations may provide ideal opportunities for such co-infections to occur. (WHO 1999:43)

A number of factors, including its large population, climatic variation, and widespread pig and duck farming, contribute to the increased likelihood of co-infection and reassortment, render China as a particularly ‘risky’ location. The concern with the close interaction between humans and certain animal species, along with the method of farming (e.g., not large-scale factory farms that are integrated into some system of ‘biosecurity’ procedure) suggest the desire to maintain distance between human and animal species.

The Hong Kong SAR is a sub-region that is also portrayed as a risky location in its perceived connection with animal contagion, especially in light of more recent infection with H5N1. The H5N1 virus is represented as a specific example of the emergence of an entirely new virus, and points to the possibility of an avian reservoir as the source of infection in this location of emergence:

An influenza A virus was grown, but could not be sub-typed locally. Some time later the virus was determined to be closely related to type A influenza of avian origin, with the sub-type H5N1. No previous human infections with this sub-type had been proven...The simultaneous occurrence of outbreaks of H5N1 virus in chickens grown or imported into
*Hong Kong SAR for food suggested these birds were the actual source of human infection.* (WHO 1999:39)

The *H5N1 viruses found in humans related to viruses isolated from sick chickens in Hong Kong SAR*. However, intensive investigations failed to confirm efficient person-to-person transmission of the virus, and the human infections stopped when public health officials and veterinarians organized *mass destruction of chickens from markets and their breeding farms*. (WHO 1999:7)

The source of human infection from H5N1 is linked to imported or internally grown chickens, where their mass slaughtering is recognized as terminating the transmission from animals to humans.

These acknowledgements of difference in capacity to prepare and respond represent a symbolic demarcation of differences across national borders, and perhaps even an underlying understanding of variations (in preparedness) according to cultural and economic practices in some world regions. Beyond the governing of boundaries discussed above (e.g., shared preparedness measures across borders), these representations establish that there is some favoured referent of preparedness, to which states will not, or cannot, equally adhere. However, after WHO 1999, there are no further detailed representations of specific national and regional sites designated as risk areas.

5.2.3 Determining national risk: Shared borders and mutual vulnerabilities

In the context of national variations in the experience of disease, concern over the territorial expansion of the virus is addressed in preparedness and response measures throughout the WHO planning documents. In particular, the potential of the virus to cross geopolitical boundaries is addressed in the representation of a mutual vulnerability shared by bordering countries. A key element of the regulation of boundaries is in the management of interconnections and interdependencies of individual nation states. The WHO 2005 document presents a new binary distinction between countries that are ‘affected’ and those that are ‘not affected’, and provides distinct guidelines for nations within each category:

National actions during each phase are further *subdivided according to the national epidemiological situation*. For convenience, the term ‘not affected’ is used for countries without cases/outbreaks. (WHO 2005:6)
What is particularly interesting about this addition is that countries with ‘extensive travel/trade links with affected countries’ also receive their own categorization as the target of specific directives by WHO, perhaps representing some kind of ‘middle ground’ in terms of risk status.

These constructions represent a reconstruction of global boundaries related to risk. In addition to a broader geopolitical re-mapping according to WHO-designated world regions, this can be understood as a re-mapping of borders from the binary distinction between countries with cases of infection and those without, to include a third risk category based on interconnectedness between states. This transcendence of binary distinctions is representative of new categories of risk in the global context in which the potential to be affected always exists. Here, potentiality is linked to the interconnectedness of territories through trade and travel.

In the WHO 2009a document, a nation’s own assessment of pandemic severity and risk is to be determined in part by considering the status of neighbouring countries or those in close proximity:

In addition to the globally announced pandemic phase, countries may want to make further national distinctions based upon their specific situations. For example, countries may wish to consider whether the potential pandemic virus is causing disease within their own borders, in neighbouring countries, or countries in close proximity. (WHO 2009a:26)

Thus, sites of risk are represented territorially in terms of the consideration (and surveillance) of borders between affected and unaffected countries, which is exemplified by the distinction between response activities for the two categories and the creation of a third category of countries with ‘extensive trade or travel links’ with an affected country. This distinction brings into sharp relief the consequences of economic interdependence, where those countries that are economically reliant on one another are also constituted as mutually vulnerable with respect to the spread of disease. The sharing of national borders or close travel-related contact is identified as important for surveillance purposes because the interconnectedness of nations indicates a level of vulnerability in terms of infection:

WHO will promote enhanced surveillance activity regionally or internationally. National laboratories, especially those in countries where the population has considerable travel-related contact with the site of initial identification of the novel virus, will be encouraged to increase reporting of possible clusters or outbreaks of influenza-like illness… (WHO 1999:11)
Here, close travel-related contact between countries is presented as increasing risk according to the infection scenario in the corresponding state. While the WHO 1999 document encourages heightened surveillance according to this level of interrelatedness, surveillance and reporting of disease in such instances is later required under the IHR.

In the WHO 1999 document, countries that share borders or are in close proximity to one another are encouraged to engage in regional collaborations, such as the sharing of preparedness plans:

In regional areas where countries are contiguous, exchange of regional plans is recommended. Several contingency plans might be required to account for the season when a new sub-type is first identified, its proximity to the country, the information available about its impact, and the degree to which prevention measures will be attempted. (WHO 1999:22)

The sharing of regional plans and accounting for details such as ‘proximity to the country’ again suggests some kind of mutual risk between countries with shared borders or connection through trade or travel. Also of relevance, is that the final two documents acknowledge that all planning (local, national, regional, and global) is taking place in the context of limited resources. Perhaps partly in response to these limits and national variations in preparedness and response mechanisms, the WHO recommends the sharing of plans between nations, along with the related interoperability of planning across borders where countries should be prepared to explain differences in response strategies:

It is desirable to share business continuity plans with key partners to ensure consistency and interoperability. Local government plans should be aligned with central government strategic directives. National plans should be shared with neighbouring countries. Particular attention should be paid to plans in neighbouring border areas. (WHO 2009b:9)

Critical transborder issues should be identified and addressed at a bilateral or regional level. Interoperability of plans across borders should be considered. Plans should be developed to cope with possible external and internal displacement of people during the pandemic and to address the needs of displaced populations. Governments should coordinate activities in border areas and be ready to explain differences in mitigation actions between neighbouring countries. (WHO 2009b:12)

While not explicitly referencing the WHO as the body to which states are accountable, the expectation that neighbouring countries ‘explain’ differences in their response measures, beyond highlighting the rise in authority of WHO, is also representative of the complexity of the relation between freedom and restrictions embodied in governing by individual nations. Furthermore,
national governments are encouraged to assist other governments that are experiencing outbreaks of disease that could lead to a pandemic:

In its leadership role, the central government should...Consider providing resources and technical assistance to countries experiencing outbreaks of influenza with pandemic potential. (WHO 2009a:17)

In light of the purported urgent nature of pandemic preparedness in relation to the global community and the representation of mutual vulnerability between countries, it seems inconsistent that such noncommittal language portrayed in the above quotation is used when discussing the issue of assistance to other countries.

The topic of ‘porous borders’ with respect to traffic, trade and viruses, and the corresponding issue of the regulation of permeable borders, is a significant theme in the WHO 2009a document, especially in reference to the revised IHR (2005). The revised IHR (2005) promotes coordination of procedure and action for nation states under the direction of WHO and aims to minimize viral spread, while simultaneously preserving international travel and trade:

The IHR (2005) also provides a mandate to WHO to perform public health surveillance, support States, and coordinate international response to international public health risks. In extraordinary circumstances, including an influenza pandemic, the Regulations provide that the WHO Director-General can determine that a “public health emergency of international concern” is occurring. In such a case, the Director-General will, after taking advice from a committee of outside experts, determine and issue specific IHR “Temporary Recommendations” to governments on the appropriate actions to prevent or reduce the international spread and minimize unnecessary interference with international traffic and trade. (WHO 2009a:20)

Even if there are no notifiable cases or events involving an influenza virus of pandemic potential occurring within a State, States Parties have additional obligations to report to WHO evidence of serious public health risks in other States, to the extent that they have evidence of related imported or exported human cases. (WHO 2009a:19)

This extends the responsibility of states beyond their own borders in terms of reporting, even if that country has no cases of influenza with pandemic potential. While countries with travel-related contact are ‘encouraged’ to report outbreaks in the WHO 1999 document this has become a legal requirement with the implementation of the IHR in 2005. Thus, states are obligated to report on risks outside of their territory that might result in the spread of disease internationally, and that are linked to the import or export of goods and people. Furthermore, in reporting to WHO, states are required to provide evidence of human cases of infection, vectors which carry infection, or contaminated goods.
The increasing authority of WHO under the IHR is reflected to some degree in the language of recommendations over the decade. The power to designate a ‘Public Health Emergency of International Concern’ reflects WHO’s rising authority since 1999, and there is an apparent decline in concern regarding the autonomy of nations portrayed in the documents since 1999. While countries are generally portrayed as driving their own decision-making process, there is also increasing reference to their ‘obligations’, such as the above expectation that countries ‘explain differences’. This suggests a new focus on the accountability of nations within the ‘global community’. The designation of risk according to shared national borders or interconnectedness due to travel and trade is part of a broader concern regarding mutual vulnerability throughout the texts.

According to these regulations, the definition of pandemic is legally based in part on its spread across national borders; and significantly, disease events must be reported if the spread is international or if there is risk of travel or trade restrictions. This interconnectedness is vital to economic circulation; however, the representation of shared borders (e.g., physical and economic) as linked to elevated viral transgression also casts these boundaries as a key target of control. The coordination and standardization of response measures in the face of mutual vulnerability will be discussed in further detail in Chapter 6. The legal requirement of nations to report cases to WHO also includes interventions at international ports, airports and ground crossings, if deemed necessary. International travelers are obvious objects of surveillance in this description, exemplified by the possible exception (or suspension) of human rights in exceptional situations:

The IHR (2005) also obligates States Parties to develop national public health capacities to detect, assess and respond to events, and to report to WHO as necessary, as well as capacities to address risks of international spread of disease at designated ports and airports (and potentially, at designated ground crossings). If a potential pandemic or related public health risk should arise, the IHR also provides extensive options for national authorities to obtain information from incoming aircraft, ships, and other vehicles and travelers...[r]egarding international travelers...there are human rights and other protections, such as prior informed consent for examinations, prophylaxis or other measures (subject to exceptions in exigent circumstances). (WHO 2009a:20)

States are now ‘obligated’ to prepare or respond, and they are also required to intervene with respect to border crossings, if necessary. At the same time, these measures are presented as exceptional and reliant on the discretion of WHO, presumably through cooperation with the individual nation. While there is acknowledgment of the likelihood of some disruption of travel
and trade resulting from containment operations, the stated objective of maintaining circulation speaks to the broader desire to continue economic and social functioning. Although closure measures may be necessary in some instances (at the discretion of WHO on the international level and the state at the national level) the overriding goal is of maintaining the permeability of borders.

5.3 Conclusion

A key component of the production of knowledge in relation to pandemic is in the representation of viral characteristics, the elaboration of pandemic and nonpandemic circumstances and contingency mechanisms to address pandemic. My analysis has emphasized the limits in distinguishing between pandemic and nonpandemic conditions. The discursive structuring of pandemic in comparison with non-pandemic circumstances generates an increasingly indeterminate distinction between these two characterizations. I contend that the imprecision in terms of conceptual boundaries is made possible by the representation of the nature of the influenza virus, especially in the early WHO 1999 document.

In particular, the ‘biological potentiality’ of the influenza virus construed through representations of the virus as dynamic and transformational, the new ‘visibility’ of the possible pandemic virus enabled through the focus on endemic H5N1 and the flexibility in function of seasonal influenza are key discursive techniques that are crucial to this framing of pandemic. The ubiquity of risk that results, in part, from potentiality and endemicity renders the distinction between the norm and exceptional (pandemic) increasingly obscure. In this way, flexibility is necessitated and ‘built into’ the problematisation of pandemic preparedness and governance. If all the multiple possibilities of emergence have the biological potential to result in a pandemic, then the necessary response is one that is continuously open to all possibilities and has the corresponding adaptability in regulation techniques. In this way, the project of preparedness is perpetually implicated in the possibility of emergence, pandemic and otherwise, and this ongoing engagement through investment requires further consideration for its broader implications.

The delineation and regulation of possible interconnections and the resultant in-between spaces, takes many different forms. The virus is represented as transgressing animal and human boundaries through the contact between these ‘discrete’ bodies. These portrayals enable and necessitate the regulation of those entities conceived of as self-contained in symbolic, political
and material terms through, for example, the surveillance of national borders or spaces that facilitate animal and human contact. Furthermore, viral transgression is constructed as a colonizing process that is implicated in the infection of populations through individual bodies, along with the territories within which these populations reside. The sites of interconnectedness enabling transgression are cast in terms of their association with increased risk of viral transmission and disease. The viral expansion in populations and territory that results from transgression is also connected with a heightened risk in relation to the global pandemic designation.

Responses to the possible convergence of bodies, in and of themselves and across territorial borders, include the re-mapping of global boundaries according to risk which recognizes the mutual vulnerability of nations that share particularly ‘permeable’ boundaries. Over the decade of planning there is an increasing requirement to consider vulnerability based upon the experience of states outside of national borders. Similarly, the recommendations recognize variations in capacity to prepare and respond, and corresponding differences in terms of integration into global systems of surveillance. However, as stated, there is complete omission of consideration of factors framing these differences. As a result of representations of shared vulnerability, responses also involve the surveillance of these points of contact, not for the purpose of closure, but as a control mechanism for maintaining desired circulation. While the obvious response to an expanding virus is a corresponding containment measure, there exists the simultaneous need for the permeability of borders for economic and social functioning which informs the precarious balance between freedom and constraint required of the regulation of circulation.

In both sections in this chapter, I have described the framing of pandemic, largely in terms of the representation of viral features, as a particular problematisation that necessitates a corresponding response. I turn to this latter theme in the chapter that follows.
6 Integrating Pandemic: Towards a ‘Sustainable’ Preparedness

In the preceding chapter, I discussed the blurring of boundaries between pandemic and non-pandemic conditions. This is enabled by specific representations of the influenza virus and effects of disease, along with the delineation and regulation of boundaries between bodies, populations and territories. However, the problematisation of pandemic emergence versus the proposed response to pandemic represents an artificial divide, as they do not operate as separate or distinct forms within the texts; the problem of pandemic is co-constituted with the proposed response mechanisms. Nevertheless, in what follows, I once again rely on this analytical divide to focus on the response to, and control of, pandemic over the decade.

The first section of the chapter examines efforts at early intervention in the regulation of emergence. I then discuss the implications of intensive surveillance systems aimed at early warning for the possible misrecognition of novel viral strains. In a third section on changes to existing procedure, I argue that mechanisms of contingency and flexibility are increasingly ‘built into’ routine procedure, to the point that pandemic preparedness comes to signify a more general strengthening of society by 2009. Next, I explore the tension between a desired commonality in preparedness and response mechanisms, and the recognition of particularity and difference in terms of individual countries’ capacities for planning. In a final section, I examine representations of interconnectedness characterizing the configuration of society, with regards to the regulation of global linkages through trade and the mapping of sites of interdependence which, itself, invokes vulnerability as a key mechanism in later preparedness frameworks. Throughout this chapter, I argue that the mechanisms of flexibility and contingency are crucial in framing the evolving operation of control of pandemic emergence. Furthermore, I propose that these mechanisms enable the integration of pandemic preparedness into existing structures of society, such that the target of planning shifts from a specific focus on pandemic preparedness towards the overall strengthening of society, signifying that pandemic preparedness evolves to become something more.
6.1 Early warning, early intervention

In pandemic planning, surveillance involves the constant comparison of new virus strains with existing strains across regional and national borders, and entails the expanding integration of viral events within the scope of viral typing. With respect to the pandemic risk phases, the upscaling of each level is accompanied by a heightening of surveillance until the pandemic phase eventually occurs. Surveillance continues through the pandemic phase(s) and, in the later WHO 2009 documents, returns to a ‘normal’ level of surveillance activity during the post-pandemic period. At the same time, the collection of data to enhance surveillance takes the form of a continual (verging on cyclical) process. A case definition for viral surveillance is developed from previous and ongoing surveillance data, and is simultaneously intended to inform surveillance once the features of the novel virus have been determined and described.

As discussed in Chapter 5, the portrayal of the influenza virus as inherently unpredictable has significant implications for understanding the response to, and planning, for pandemic. In order for the virus to be ‘known’ and interventions introduced, the influenza virus is endowed with its own internal logic and, even, agency (informed and legitimized by science and epidemiology). In this way, a particular construction of the virus is incorporated into the planning process, one which expands possibilities of intervention through its very unpredictability. These inherent features of potentiality and unpredictability establish a dynamic where existing knowledge of viral strains is in continual need of updating and revision, made possible through such mechanisms as an expanding surveillance systems and a legal duty to report ‘unusual’ disease events under IHR 2005. In other words, the construction of the virus with a particular ontological status necessitates corresponding techniques of governance that attends to these features (e.g., preparedness or intervention to mitigate the effects of this force). In this light, intensive, ‘generic’ surveillance is presented as a requirement for the early detection of an influenza pandemic.

At the same time, the techniques of surveillance and data collection are described as having developed significantly since the past eras of pandemic, and this progress is portrayed as improving the chances of achieving ‘early warning’ of an emerging viral strain. Specific key recent developments are cited that relate to the expansion of surveillance and improved technology, and these target the early identification of the pandemic virus:
A large amount of knowledge exists about animal influenza viruses….it is hoped that
from these accomplishments the odds have been dramatically improved in favour of
finding novel viruses before pandemics have begun, thereby increasing the time to
organize a response, including production and distribution of vaccines. (WHO 1999:30-
31)

In particular, a central development cited in WHO 1999 is the recent and ‘active’ participation of
China in international public health surveillance, which conveys information about the
characterization of China as a potentially ‘risky’ territory that may require heightened
surveillance. More broadly, the integration of China (and other countries) into systems of
surveillance illustrates the desired inclusion of ‘outliers’ within surveillance and control. This
particular example involves the incorporation of sovereign states into a standardized or generic
network of response, which is a central objective of the response mechanisms presented
throughout the texts.

Due to the understanding that animal populations are the natural reservoir for the
influenza virus, much of the surveillance directed towards the virus targets infection in animal
populations. Not surprisingly, there is the general acknowledgment that the success of ‘early
warning’ through response mechanisms requires coordination between bodies that address
human and animal health:

Co-operation between veterinary, public health and biological regulatory authorities is
needed to respond quickly to cases of apparent animal-to-human spread of a severe form
of influenza of a novel sub-type. (WHO 1999:31)

Under these conditions, the problems of identification and control become thoroughly concerned
with the rapid collection and exchange of viral and other information relating to pandemic and,
in WHO 1999, national health authorities and pandemic committees are summoned to consider
the necessary strengthening of surveillance:

Decisions will be critically dependent on data about the occurrence, spread and impact of
a new influenza virus sub-type. The types of data needed, and the technological means to
rapidly collect and access such information, need to be carefully defined. Special
attention needs to be given to obtaining laboratory equipment, and preparing procedures
and training programs, to permit diagnostic and vaccine development work with a new
sub-type that may be highly pathogenic for humans or particular animal species. (WHO
1999:23)

Surveillance and control constitute the seemingly complex and comprehensive collection,
xchange and dissemination of viral information prior to the event of pandemic.
These developments convey the aim of pre-empting a pandemic before it occurs, largely through surveillance methods, and the speed of circulation (e.g., of information and resources) under globalization is touted as an indicator of progress in responding to emerging viruses. This sentiment corresponds with the intermittent portrayal of global circulation, through air travel and information, as a challenge to control mechanisms. In this regard, there is a fairly consistent focus on strategies to reduce the amount of time involved in detecting and responding to pandemic emergence. Following the WHO 1999 plan, the 2003 outbreak of SARS is used to exemplify the importance of coordinated action in timely interventions and response:

The SARS experience suggests that coordinated global and national efforts could also be successful in addressing the emergence of a new human subtype of influenza – if not in containing a pandemic, then possibly in delaying its emergence to “buy time” for the implementation of preparations made in advance. (WHO 2005:4)

Thus, the event of SARS confirmed and re-emphasized the significance of time and early response mechanisms in the general control of outbreaks. This is consistent with the observation that other historical precedents (e.g., the 1918 ‘Spanish flu’ pandemic) are presented throughout the texts to further understandings of the features of influenza, which, in turn, assists in prediction in the face of uncertainty. Given the great unpredictability inherent in conceptualizations of emergence discussed thus far, the ‘early warning’ system provides a means through which to regulate various uncertainties. I suggest that this approach represents a form of control that has at its core the objective of producing knowledge about emerging viral strains. Every point in the network of surveillance is implicated in the task of defining the virus in order to allow for its containment and control. The unpredictability of the virus, discussed in Chapter 5, compels the general logic of an ongoing response to pandemic progression:

The unpredictability of influenza, and the serious consequences which can occur when a pandemic strain does appear, provide an ample justification for constant vigilance, and good planning, to improve preparedness, if another true pandemic virus does appear. (WHO 1999:40)

Again, because emergence is fundamentally construed as a ‘natural’ and infinite process, this venture of surveillance is, correspondingly, continuous.

The WHO 2005 plan breaks most exceptionally from the WHO 1999 plan, in terms of changes introduced around the conceptualization of early detection. In this respect, WHO 2005 substantially restructures the pandemic phases (the central measure in organizing response) in order to relocate the focus of intervention toward the early detection of the virus:
This document...[f]ocuses greater attention on early phases when rapid intervention might contain or delay the spread of a new influenza virus subtype in humans. Such measures would include enhanced surveillance and use of nonpharmaceutical public health interventions and consideration of deployment of a possible global early intervention stockpile. (WHO 2005:5)

Redefinition of the phases was needed to address the public health risks of influenza infection in animals, link phase changes more directly with changes in public health response, and focus on early events during a “pandemic alert” period when rapid, coordinated global and national actions might help to possibly contain or delay the spread of a new human influenza strain. Even if not successful in containing spread, this approach should gain time to develop vaccines against the new strain, and to implement other pandemic preparedness measures that had been planned in advance. Success will depend on several factors, including surveillance to provide global early warning of human infections with new influenza subtypes. (WHO 2005:1)

Lack of recognized animal or human infection does not mean that no action is needed. Preparedness requires planning and action in advance. (WHO 2005:6)

The emphasis on early stages of intervention is reflected in the specific changes to the pandemic risk phases, which are presented as necessary in order to gain time for control of future outbreaks, especially through the development of vaccines and the stockpiling of supplies. Ultimately, the expansion of surveillance is implicated in the objective of early warning in order to gain time for pharmaceutical and other public health intervention. The understanding that intervention is required before there is knowledge of animal or human infection represents a change in response that shifts the temporality of intervention in such a way that the future occurrence of pandemic is relocated in the present through the very exercise of preparedness.

Significantly, the pandemic phases in WHO 2005 involve five phases of pandemic alert that precede the actual pandemic period, and involve ‘buying time’ through surveillance and containment operations prior to the designation of a global pandemic (Table 2). The expansion of surveillance to include only animal infection is highlighted in the revised phases, and accompanies enhanced surveillance of human infection in the early phases of preparedness. In addition, in comparison to previous documents, there is a greater emphasis on partnerships between national and international surveillance bodies in controlling infection and even decision-making around pandemic risk. This can be seen in the national objectives outlined by WHO which include the identification of “interspecies transmission at an early stage and [the transmission of] this information to WHO and other appropriate partners” (WHO 2005:16).
In WHO 2005, during the interpandemic period when there is an animal virus circulating that poses substantial risk to humans (but no human infection with a novel virus), recommended national actions for affected countries and those with close travel/trade links to them include numerous surveillance measures, that span from “enhanced animal and human surveillance based on WHO, FAO and OIE recommendations”, to the “urgent [transmission of] representative isolates from suspected human cases of infection,” to the “serological surveillance of farmers (including their families) and animal workers involved in containment of outbreaks of animal influenza” (WHO 2005:17). These recommendations demonstrate the continued engagement of affected and connected countries in the process of preparedness, where ongoing measures are implemented in advance of, and following, the event of a pandemic. Long before the designation of pandemic, there is a vast range of possible actions involving early warning and prevention, which directly and indirectly implicate a wide range of (often unspecified) actors or bodies in the preparation for pandemic. These recommendations identify multiple points for intervention that connect the animal body (infected and otherwise) and bodies in-between, with the laboratory and international organizations, such as the World Organization for Animal Health (OIE). More broadly, this approach has economic implications in terms of the possibility of a burgeoning ‘pandemic industry’ involved in the regulation of pandemic. Through this network of exchange, there is profit to be acquired from investment in supplies, vaccines and anti-viral drugs, as well as scientific and political careers to be staked in the pursuit of knowledge about, and management of, emerging infectious disease.

The focus on early intervention is maintained in the WHO 2009a document, and surveillance and containment of an emerging virus continue to receive substantial attention prior to the pandemic phases:

The overarching goal of actions taken during Phase 4 [the phase preceding the pandemic phase] is containment of the new virus within a limited area or the delay of its spread. If successful, valuable time could be gained to implement interventions including the use of vaccines. (WHO 2009a:11)

The goal of situation monitoring and assessment is to collect, interpret, and disseminate information on the risk of a pandemic before it occurs and, once under way, to monitor pandemic activity and characteristics. To assess if the risk of a pandemic is increasing, it will be important to monitor the infectious agent, its capacity to cause disease in humans, and the patterns of disease spread in communities. It is important to collect data on influenza viruses, the genetic changes taking place and consequent changes in biological characteristics, and to rapidly investigate and evaluate outbreaks. Once a pandemic
influenza virus begins to circulate, it will be vital to assess the effectiveness of the response measures. (WHO 2009a:28-9)

The constant evaluation of risk through monitoring changes in the biological characteristics of the virus is an important function in the production of vaccine. Thus, through rapid assessment of infectious agents and response to the emerging pandemic virus, risk is brought into the present to allow for intervention. At the same time, the ubiquity of risk effected by the inherent potentiality of viruses necessitates ongoing intervention in the objective of pre-emption.

### 6.2 Differentiation: ‘False alarm’ or a ‘true’ pandemic strain?

The expansion of surveillance for the early detection of emerging viruses is discussed in relation to the development of a ‘generic’ system of surveillance – one that presumably is universal enough to detect all possible forms of variance and risk. The expansion of surveillance systems to detect, identify and report as many forms of emerging viral strains as possible, establishes the ongoing need to differentiate between ‘false alarms’ and the ‘true’ pandemic strain within this system:

To better cope with “false alarms” resulting from intensive surveillance, a series of “Preparedness Levels” have been defined that can be applied before the beginning of a pandemic is declared. This should assist WHO to report on novel virus infections of humans and initiate precautionary responses, without creating unnecessary panic. Such a need is particularly important in an age when information is so rapidly shared by electronic means. (WHO 1999:5)

...it is important for effective planning to have a process which defines responses to alternative possibilities, such as the recognition of a new virus which does not spread and cause a pandemic, and the early detection of low-level spread of a true pandemic virus. (WHO 1999:8)

The generation of ‘false alarms’ by intensive surveillance can be understood as a limitation (or necessary effect) of such a system. What my analysis reveals is that the tension between what is (or will become) and what is not a pandemic virus is itself a product of the very system designed to distinguish between the two possibilities.

The language of dual possibilities (i.e., true versus false alarm) in emergence shifts slightly in the WHO 2005 document, where terms such as ‘false alarm’ no longer appear; however, recommendations continue to acknowledge the importance of both normal and atypical
findings through viral surveillance. For example, the recommended national actions include the following surveillance measures:

Develop robust national generic surveillance systems for the detection, characterization and assessment of clusters of influenza-like illness or respiratory deaths, with provision for surge capacity and intersectoral and interinstitutional collaboration…Develop or strengthen national systems for influenza surveillance in both humans and animals, based on WHO, FAO and OIE guidance…Report routine and unusual surveillance findings to relevant national and international authorities. (WHO 2005:12)

The significance of ‘routine’ and ‘unusual’ events to surveillance techniques indicates the integration of both normal and exceptional circumstances into the system of knowledge informing pandemic governance. Even seemingly benign cases must be accounted for in the logic of pre-emption.

With such intensive surveillance and the acknowledgement of ‘false alarms’ that may result from this form of surveillance, the challenge in accurately identifying the pandemic virus is in the necessary recognition of the ‘true’ virus and in the possible misrecognition of benign novel viruses as a pandemic virus. In this sense, it is not so much that the knowledge of these viruses will not exist, but that the features associated with the viruses might be misinterpreted. The pandemic phases are presented as a means to deal with this possible misrecognition, integrating all possibilities through increasing levels of alert. In this light, it is interesting that the later plans no longer focus on the possibility of an incorrect designation of a novel virus as a pandemic strain, which suggests that the specific task of distinguishing between the two possibilities becomes redundant to the preparedness process. The modification of the pandemic phases to address multiple possibilities is perhaps partly the result of the legitimization (and entrenchment) of generic surveillance following H5N1 and SARS, which signifies the diminishing need to rationalize efforts to collect data on all influenza strains.

At the same time, responses that attempt to identify the pandemic virus as an outlier in the midst of multiple viral candidates are also seen in the WHO 2005 aim to “have available up-to-date information on trends in human infection with seasonal strains of influenza” (WHO 2005:12). This objective depicts the reliance on existing knowledge of human influenza disease in order to determine deviations that may indicate the emergence of a more ominous viral strain. Furthermore, the understanding that there may be barriers to determining the exact impact of an emergent virus is addressed through continual alert and rapid response to procedure:
In terms of risk assessment, we learnt in 1997 from the events in Hong Kong SAR (when a virulent avian influenza virus caused several severe infections in humans) that the ability to draw conclusions about the future impact of a new influenza sub-type might be hampered by the unexpected. Among the lessons learned are: National influenza centres need to be constantly alert for the existence of hard-to-identify viruses, and need to rapidly submit them with all information to one of the four WHO Collaborating Centres for Reference and Research on Influenza, so as to minimize time taken for their characterization. (WHO 1999:31)

The process of anticipating the ‘unexpected’ through preparedness is thoroughly implicated in the overall notion of uncertainty framing the problem of pandemic. The obligation to gain or increase knowledge about every virus connects to the understanding that the pandemic virus, while undefined, will deviate in some form from known viruses.

Discussions of the pandemic phases presented in the WHO 1999 and WHO 2005 documents are less explicit in their approaches to addressing the possible misrecognition or oversight of a pandemic virus than WHO 2009a. In contrast, the WHO 2009a document “[r]etains the six-phase structure but regroups and redefines the phases to more accurately reflect pandemic risk and the epidemiological situation based upon observable phenomena” (p. 8). In this plan, WHO explicitly acknowledges that these phases are constructs developed to assist with preparedness activities, and are not intended to predict the actual manner in which a pandemic will transpire:

It is important to stress that the phases were not developed as an epidemiological prediction, but to provide guidance to countries on the implementation of activities. While later phases may loosely correlate with increasing levels of pandemic risk, this risk in the first three phases is simply unknown. It is therefore possible to have situations which pose an increased pandemic risk, but do not result in a pandemic. Alternatively, although global influenza surveillance and monitoring systems are much improved, it is also possible that the first outbreaks of a pandemic will not be detected or recognized…When making a change to the global phase, WHO will carefully consider whether the criteria for a new phase have been met. This decision will be based upon all credible information from global surveillance and from other organizations. (WHO 2009a:26)

This caveat acknowledges the possibility that global surveillance will not necessarily detect all sources of threat prior to pandemic emergence, particularly if symptoms are mild and non-specific, although this remains the goal of the surveillance network. This admission allows for flexibility in the upscaling of pandemic phases, where alert levels may skip phases if necessary. At the same time, the WHO 2009a document claims to redefine the pandemic phases “to more
accurately reflect pandemic risk and the epidemiological situation based upon observable phenomena” (WHO 2009a:8). Furthermore, the above quote illustrates that prediction and calculation relating to pandemic emergence is no longer the central objective of preparedness mechanisms.

The re-writing of phases to more closely reflect observable features of pandemic progression results in the designation of phases according to what is known in terms of infection and transmission of the virus (see Tables 1-3). This differs from the previous phases, which are more ambiguous in terms of the actual identification of infection. For example, Phase 1 of the WHO 2005 document includes the criteria that a viral subtype “that has caused infection in humans may be present in animals” (WHO 2005:7). In contrast, the WHO 2009a document makes the reporting or knowledge of infection increasingly central to the definition: “No animal influenza virus circulating among animals has been reported to cause infection in humans” (WHO 2009a:11). This shift is significant in its relation to conceptualizations of knowledge of the virus. The emphasis on reporting, and what is known about existing viruses, reflects the understanding that there may be unreported disease circulating in populations, but, at the same time, relies on the probability that emerging strains will be reported and known, in part, due to the expansion of surveillance (and possibly due to the more recent consolidation of authority achieved through the international health regulations). Thus, by 2009, the phases delimit the definition of risk according to knowledge within existing surveillance systems, thereby excluding that which exists outside of these systems. The shift towards basing phase changes on observable phenomena also represents a general reliance on some level of knowledge of the virus. In this light, the uncertainty inherent in the problem of emergence is highlighted by tensions in differentiating between the authentic pandemic virus and other kinds of emergent influenza viruses, and more generally in the recognition or misrecognition of the actual pandemic virus. Ultimately, this uncertainty is crucial in generating flexible and contingent planning in response to the emerging pandemic.

6.3 Changes to existing procedure: Anticipating the exception

A key feature of response measures is the possibility of changes to existing policy, procedure and law in the event of a pandemic. The plans are largely geared towards anticipating the exception in terms of how pandemic relates to the ‘normal’ features of society. In this
capacity, it is not so much that the WHO provides specific guidelines for changes to procedure, but, rather, that the organization directs nations with respect to the ‘areas’ (e.g., economic, legal, and social) that require consideration, and possible modification, throughout the planning process. An underlying objective of this regulation is the examination of how elements of society might succeed or fail in the event of a pandemic, and directives call for attention to the following topics:

*Licensing procedures* for new products in an emergency situation... *Planning the logistics for supplying* influenza and pneumococcal vaccines, anti-viral drugs, antibiotics, masks, syringes, needles, etc... *Estimation of the cost* of such material, and expenses to cover their storage and transportation. The UNICEF procurement program, and other multinational or national organizations experienced in provision of material for disaster relief or disease control operations (e.g., the International Federation of Red Cross and Red Crescent Societies, and other national and international aid, humanitarian and disaster relief organizations) could be contacted by those governments wanting assistance in making such estimates for their countries, *using the normal channels that are already in place.* (WHO 1999:24)

This quotation suggests particular areas, such as the licensing, purchasing and storage of vaccine, drug and other materials, that may require attention throughout the planning process. Other recommended considerations include possible changes to laws and regulations that “restrict government actions”, the modification of national policy with respect to issues such as the control of hospitals, and the possible liability of governments and health workers for damages caused by emergency actions (e.g., harms caused by adverse vaccine reactions or the economic costs of cancelling public gatherings or changing pharmaceutical agreements) (WHO 1999:28-9). In this light, the planning documents direct nations to project disruptions in particular social arenas, with a substantial focus on legal and economic concerns.

The later documents tend to acknowledge change in existing procedures as they relate to specific areas of planning, rather than simply referring broadly to social and economic impacts. The incorporation of exceptional measures into existing frameworks within society is more explicitly elaborated upon in the later documents. For example, the introduction of the new Rapid Containment Operation as a *possible* method of intervention in WHO 2009a allows national authorities to respond at the initial detection of a virus with pandemic potential:

The intention of a pandemic influenza rapid containment operation is for national authorities, with the assistance of WHO and international partners to prevent or delay the widespread transmission of an influenza virus with pandemic potential as soon as possible following its initial detection. *Rapid pandemic containment is an extraordinary*
public health action, which builds upon, but goes beyond, routine outbreak response and disease control measures. (WHO 2009a:21)

The recognition that this is an extraordinary measure that is at once founded on, and a break from, existing disease response measures signifies further integration of the exception of pandemic into existing public health structures. The WHO 2009a and WHO 2009b documents draw numerous social sectors beyond central governments into the process of preparedness, including businesses and civil society in order to “mitigate impacts on the economy and functioning of society” (WHO 2009b:7).

A central component of the ‘whole-of-society’ approach to pandemic preparedness is the call to develop business continuity plans that would enable the continued functioning of society and mitigate the impacts of a pandemic. The WHO 2009a document states that “[d]eveloping robust preparedness and business continuity plans may enable essential operations to continue during a pandemic and significantly mitigate economic and social impacts” (WHO 2009a:17). In this way, all sectors are implicated in the establishment of what is called ‘continuity’ in preparedness, which incorporates the prediction of the consequences of pandemic influenza on various sectors, the development of a generalized capacity for managing emergencies, planning for the allocation of resources, and ongoing efforts at communication with employees. The planning directives list many areas for consideration by employers (in their business continuity plans) that provide a sense of the multiple realms and problems to be mitigated by business and other sectors. These areas of planning begin well before the pandemic period and extend to the post-pandemic, or recovery, phases. Much of the focus in this respect addresses the possibility of ‘downsizing’ of departments or the ‘stopping’ of specific, non-essential functions, all at the discretion of the employer. Other decisions involve the stockpiling of reserves, planning for “security risks to operations and supply chain” and the anticipation of necessary supports required by essential employees (e.g., psychosocial support) (WHO 2009b:9).

The task of business continuity is directed at the private and public sectors, but the documents also specify the necessary efforts of ‘key line ministries’ to consider their role during a pandemic and ensure that they will be able to fulfill their roles during this event, by developing business continuity plans that also anticipate necessary intersectoral planning. Government ministries listed as ‘key’ are: Ministries of Defence; Ministries of Transportation; Ministries of Finance; and Ministries of Justice (WHO 2009b:11). The roles of these bodies involve the
identification and mobilization of resources relevant to their mandate, planning for maintaining essential procedures central to their field throughout a pandemic (e.g., banking systems and transportation of vital supplies) and the practice of infection control in relevant institutions (e.g., prisons). The objective of business continuity plans is to reduce the vulnerability of the organization to the negative consequences of crises. This is to be achieved, in part, through the ongoing evaluation of possible risks to the establishment. In this way, pandemic planning is integrated into a broader attempt at emergency preparedness that represents a “continuous rather than static process” (WHO 2009b:8). Such a process entails the constant review of planning as it relates to the internal structures of the organization, in addition to the relevant external relationships or interconnections. These approaches signal a shift, associated with the general logic of pre-emption and justified by the discourse of preparedness, toward the governing of pandemic in a continuous, uninterrupted fashion.

The anticipation of exceptional circumstances in relation to existing vaccine and antiviral production and distribution receives substantial consideration in the WHO 1999 document. In this regard, there are numerous areas relating to vaccine and antivirals that countries, along with the WHO, are encouraged to consider. Generally, WHO 1999 presents a number of ‘hurdles’ that require deliberation and mitigation in planning. Some of these include concerns about time periods for production and distribution of drugs in the face of pandemic, security issues and inconsistencies in terms of supply and demand:

At present more than one national control authority may be involved in approving the release of vaccine, since vaccines are used in many countries. Agreements on centrally licensing vaccines for distribution in multiple countries could overcome this problem. (WHO 1999:49)

Potential problems in ensuring vaccine security and accountability need to be considered, including manufacturers and distributors in the process. Timely and up-to-date statistics on vaccination supplies and use will be needed to guide those distributing a product that would be expected to be in high demand and short supply. (WHO 1999:51)

These issues are further demonstrated by a number of questions posed to national governments regarding vaccine and antiviral drugs. They involve the manufacturing and licensing of vaccine, timelines for production and use of vaccines and antiviral agents, the necessity for additional treatment supplies (e.g., masks and syringes), available health care facilities, rates and scope of vaccination within the general population, and the possibility of developing antiviral stockpiles (WHO 1999:28).
The proposed response to these concerns in the WHO 1999 documents involves the development of an array of contingency mechanisms aimed at alternative production techniques, licensing mechanisms and distribution channels. While somewhat general, the responses aim at increasing knowledge of antivirals and vaccine in the context of pandemic, in addition to ensuring that appropriate economic and legal mechanisms are in place to enable their use in pandemic circumstances. The process of anticipating problems surrounding vaccine and antiviral production, as presented in WHO 1999, revolves around the incorporation of ‘flexibility’ into existing agreements and procedures in order to allow for adaptation in the event of pandemic:

*Each vaccine manufacturer should discuss with the country(ies) where the influenza vaccine is usually produced or distributed, how such contingencies can be addressed, and, in an emergency, what can be the expected rate of production… In preparing for a pandemic it may be desirable to build flexibility into procurement procedures, to allow for different vaccination strategies.* (WHO 1999:50-1)

*Emergency actions to control the distribution of vaccine, or to reduce spread in the community, may require a legal basis, as well as needing wide political support. The costs of special measures will need to be approved, again possibly requiring special laws or political decisions. Steps should be taken to ensure that the necessary laws or regulations are in place in advance.* (WHO 1999:24)

Further examples of contingency mechanisms include the development of alternative production methods and procedures (WHO 1999:49-50), policies about the roles of various anti-influenza drugs during a pandemic, the approval of mechanisms to import, license and use drugs approved in other countries (WHO 1999:53), the modification of vaccination procedure for the event of a pandemic, and the possible introduction of a ‘clearing house’ to balance supply and demand (WHO 1999:51). Thus, the WHO 1999 document elaborates significantly on projected changes to existing pharmaceutical procedure that may be required in the event of a pandemic.

These numerous examples provide a sense of the wide range of considerations relating to pharmaceutical response that are represented as central to pandemic preparedness in WHO 1999. Also of note here, is the key role played by the WHO in decision-making on pharmaceutical intervention. The recommendations for actions include numerous tasks to be undertaken by WHO, often after ‘international consultation’. These include, but are not limited to, making “recommendations for composition and use of vaccines… organiz[ing] consultations that are intended to facilitate vaccine production and distribution in the most equitable manner possible”
and “issu[ing] guidance on the best use of available anti-viral drugs against the new virus” (WHO 1999:14). As stated, these actions are intended to introduce contingency mechanisms into existing measures that would enable rapid response in the event of pandemic.

In comparison with the WHO 1999 document, vaccine and pharmaceutical considerations are minimal in the later plans. This lacuna may be due to the considerable progress in techniques of pharmaceutical intervention:

Other recent developments include advances in the understanding of the evolutionary biology of influenza viruses, new techniques for vaccine development and laboratory diagnosis, improved antivirals, and the ongoing revision of the International Health Regulations. (WHO 2005:4)

I suggest that within the broader field of pandemic planning, the first plan is likely to have played a role in driving these developments, and, consequently, WHO 2005 and WHO 2009, abandon in-depth discussions of the operations of vaccine and antiviral production. It is not that pharmaceuticals and vaccine are not mentioned in the later documents. In fact, they are listed as a priority area throughout the ‘Recommended Actions Before, During and After A Pandemic’ chart in WHO 2009a. As well, the revision of phases between 1999 and 2005 is, in part, motivated by the desire to “gain time to develop vaccines” against the new strain (WHO 2005:1). Instead, it is that the area, as a focus of deliberation is largely absent in the later documents, which may signal that the import of this response mechanism is so naturalized that it no longer requires discussion. Moreover, the securing of time in order to develop pharmaceutical interventions is an ongoing and central component of the general pandemic response.

Of significance in this regard is the development of the pharmaceutical response to pandemic such that vaccine and antivirals now command their own separate designation in planning. This is illustrated in a number of citations in the WHO 2009a document that reference other texts. These include the 2006 Global pandemic influenza action plan to increase vaccine supply and the 2009 Guidelines for the deployment of a pandemic influenza vaccine which specifically address the issue of pharmaceutical response and shed light on the prioritization of vaccine development as a specialty area. The integration of pharmaceutical intervention into global pandemic preparedness is further represented in the WHO 2009a plan. Along with a ‘WHO stockpile’ of antivirals (WHO 2009a:38), the stockpiling of other materials and advances in vaccine development are also briefly referred to here:
Finally, stockpiles of antiviral drugs and other essential supplies are now a reality, new approaches to influenza vaccine development are under way and a Global Vaccine Action Plan has been devised to increase the supply of pandemic vaccine. (WHO 2009a:8)

The ‘reality’ of a global stockpile in 2009 corresponds with the omission of discussion about the logistics and dilemmas associated with pharmaceutical production and distribution.

In addition, there are apparent developments over the decade in terms of the reference in the documents to an international network involved in the selection of vaccine strains, which is arguably at the heart of the entire vaccine procedure. This network connects numerous organizations and affiliations in the process of pandemic vaccine strain selection and development. These actors include the WHO Collaborating Centres (CCs), National Influenza Centres, WHO H5 Reference Laboratories, key national regulatory reference laboratories, the WHO Global Influenza Surveillance Network, influenza vaccine manufacturers, the International Federation of Pharmaceutical Manufacturers and Associations, and the Developing Country Vaccine Manufacturers Network (WHO 2009a:20). While this international influenza surveillance and vaccine production network existed long before the conception of pandemic preparedness activities, the reference to these actors in the later document may signify an increasingly formalized arrangement of pandemic vaccine production over the decade of planning.

Thus, a decade after the initial WHO 1999 pandemic plan, the WHO appears to have established a system to address pandemic vaccine production within existing procedure that incorporates a network of bodies into the process, including the pharmaceutical manufacturers. At the same time, discussion of the mechanisms of vaccine production and distribution are now remarkably absent following their integration into global systems of preparedness. This point requires further consideration in its possible implication that the integration of vaccine and antiviral response would lead to a decrease in the deliberation over, and even description of, pharmaceutical procedure. The decline in explicit reflection over pharmaceutical intervention additionally signifies the operation of ‘silence’ in discourse, reflecting the way that naturalized ‘truths’ become a diminishing target of contestation.

A final topic of discussion relating to the anticipation of exceptional circumstances relates to the operation of preparedness in the strengthening of society, in terms of responding to a general array of emergency situations. The WHO 1999 guidance emphasizes ‘normal’, or
existing, procedure and structures and calls on countries to consider the ways in which these may require modification or circumvention in the event of pandemic. While this plan does make connections between general emergency management and pandemic preparedness, this is discussed in relation to how information and procedures for existing emergency frameworks may inform pandemic plans, rather than the other way around:

For many issues, there may already be adequate information from which to begin planning from existing disaster and emergency plans: e.g., structure of the population, availability of regular and emergency medical facilities and workers, pharmaceutical distribution system and similar relevant information, together with descriptions of procedures for initiating emergency measures. Inevitably not all information desired would exist, and the process of developing a response to a pandemic will likely highlight areas of weakness in the national infrastructure for dealing with it. (WHO 1999:22-3)

The focus on existing plans and information is presented in terms of a likely deficit of information that needs to be addressed in preparing for a pandemic.

There is a marked shift that takes place over the decade of planning, towards the integration of pandemic into already-existing emergency frameworks, and pandemic preparedness is increasingly framed in terms of its possible contribution to society in general. That is, in WHO 2005 and WHO 2009a, pandemic preparedness is intended to be but one component of a broader structure of preparedness:

Certain objectives and actions are specific to influenza, whereas others address preparedness for and response to many health emergencies that affect large numbers of people. Although many countries already have contingency plans for disasters or other health emergencies, some such measures are included to ensure completeness in pandemic influenza planning. (WHO 2005:2)

Through the use of these and other approaches [to integrating pandemic preparedness and response into general emergency preparedness], governments, public health agencies, and others have an opportunity to strengthen preparedness for the next influenza pandemic while building the capacity to address a range of local, national, and international emergencies. (WHO 2009a:15)

Beyond integration into existing emergency frameworks, this approach highlights the efficient use of resources focused on pandemic planning and points to the idea that these measures can function to strengthen other capacities within society. In this context, pandemic planning becomes a part of something larger than itself in its possible contribution to increasing preparedness for other potential health threats and emergencies.
The incorporation of the ‘whole-of-society’ approach includes the recognition that a societal response to pandemic must extend beyond actions implemented by the health sector. Among the issues addressed under this framework is the problem of limited resources for pandemic preparedness given competing national and international priorities:

Pandemic preparedness activities take place within the context of national and international priorities, competing activities, and limited resources. Given the fundamental uncertainties surrounding the timing of the next influenza pandemic, steps to ensure the long-term sustainability of pandemic preparedness are crucial and should involve...[u]se of preparedness activities to actively build communication channels between sectors and communities. (WHO 2009a:15)

Core elements of pandemic influenza communication are...to support coordination and the efficient use of limited resources among local, national, regional and international public health partners. (WHO 2009a:29)

Concerns involving the possibility of competing agendas in the face of limited resources intersect with a broader discourse of economic crisis within the global context. The “use of pandemic preparedness activities to strengthen basic and emergency health-related capacities (such as the primary health-care system, respiratory disease surveillance, and laboratory diagnostic capacities)” (WHO 2009a:15) indicates the integration of these measures into a general system of emergency preparedness.

In this light, the reference to notions of resilience and sustainability as new descriptors in the WHO 2009a and WHO 2009b documents frame the desired strengthening of society in terms of a generalized and enduring system of preparedness:

The whole-of-society approach to pandemic preparedness will have additional benefits as it will strengthen the resilience of communities to withstand other future threats to their health, security and wellbeing. (WHO 2009b:5)

A severe (or even moderate) influenza pandemic will test the limits of resilience of nations, companies, and communities. No single agency or organization can prepare for a pandemic on its own. Inadequate or uncoordinated preparedness of interdependent public and private organizations will reduce the ability of the health sector to respond during a pandemic. A comprehensive approach to pandemic preparedness is required. (WHO 2009b:6)

The sentiment that pandemic preparedness will benefit society more generally by increasing capacity to manage other future threats is significant in the overall progression of preparedness discourse from 1999 to 2009.
Over this ten year period, the process of pandemic preparedness becomes increasingly oriented toward a more generalized strengthening of society. As discussed here, anticipating the exception entails the implementation of contingency and response mechanisms that build on normal or existing procedure, for example, those relating to pharmaceutical development and distribution, along with the recommended development of continuity plans by multiple parties to ensure the maintenance of economic and social functioning. Measures that target the pandemic event (at least discursively) become further integrated into the understanding of what it is to be prepared, and pandemic preparedness becomes a means to another end; it acquires its own utility where actions now reach beyond pandemic, to address something more. Or, put another way, pandemic preparedness becomes a means to strengthen, or secure, society against multiple threats that may occur at some future time.

6.4 Conforming to control: Between the ‘commonality’ of preparedness and the ‘particularity’ of context

Within the planning documents, there exists a tension between a desired commonality, in terms of countries’ preparedness activities, and the acknowledgment of possible variations in their capacities to prepare. It is the role of the WHO to facilitate a level of generalized preparedness among all ‘member’ states, and thus, recommendations propose common measures through which all countries should prepare and respond. This is illustrated by early acknowledgment that the WHO role is to “continue to work with regional offices as appropriate to encourage common activities among nations” (WHO 1999:15).

There are a number of ways in which countries are called upon to conform to the recommendations outlined by WHO, including international coordination and harmonization, and cross-border collaboration and interoperability. For example, the ‘readiness checklist’ for central governments, in WHO 2009b, advises that countries’ “[s]hare pandemic preparedness plans in order to facilitate public understanding and cross-border consistency”, and that pandemic plans of neighbouring countries should be “as similar as possible” (WHO 2009b:15). Through the recommended actions, a consistency in methods of intervention, founded on the WHO guidance, is invoked:

This new plan…recommends actions for national authorities, and outlines measures to be taken by WHO during each phase. This should result in greater predictability of the measures to be taken by the various partners involved, including WHO, during the
different phases of the pandemic, and should *improve international coordination and transparency in recommended national measures*. Guidance is also provided to national authorities for developing their own pandemic plans *in line with these phases*. (WHO 2005:1)

In this way, WHO guidance is intended to be taken up by countries, and although most directives appear as ‘recommendations,’ the expectation that countries conform to the presented standards is clear. Furthermore, the focus of ‘prediction’ in the above quotation is not the pandemic outbreak itself, but rather the response or measures that are undertaken by various actors.

The recourse to a generalized standard of preparedness for all countries speaks to the desired result of integration of individual nation states into the international system of preparedness. There is also a moral component within this appeal to standardization, where countries are invoked to ‘play their part’ by conforming to preparedness procedures, in order to minimize the risk of other nations that are vulnerable due to interconnectedness:

The responsibility for management of the national risk of pandemic influenza rests primarily with the relevant national authorities. Every country is *strongly urged to develop or update a national influenza preparedness plan according to the recommendations contained in this document*. Each national authority should play its part towards achieving the *international harmonization of preparedness measures*, as this is the key to success in reducing the risk of spread of an influenza pandemic. (WHO 2005:1)

The predominant sentiment presented in these documents is that effective preparedness and response measures will require a “massive coordinated global intervention” in order to delay and contain the spread of a pandemic virus (WHO 2005:8). In the WHO 2009b document, the descriptor of ‘Standard Operating Procedures’ is presented as a means of achieving coordinated responses through all levels of government and across each sector of society. Moreover, there is a consistent focus on chain of command in terms of responsibility, with international and national bodies presented as providing direction to local governments, local governments to community organizations, and so on. This approach is ‘top-down’ in appearances, and the central government is responsible for defining the agenda with respect to specific procedures:

Central governments should define, oversee, and coordinate key preparedness actions. *Standard operating procedures (SOPs) are helpful in generating common understanding and coordinated implementation.* (WHO 2009b:11)

Central governments should provide the information and framework for the planning which must take place across all sectors of society. While all sectors of society are involved in pandemic preparedness and response, central governments are responsible for
leadership, communication, and coordination. National inter-ministerial pandemic preparedness committees should map out the central government’s roles, responsibilities, and chain of command and designate lead agencies…Central governments should define, oversee, and coordinate key preparedness actions. (WHO 2009b:11)

Within what is frequently represented as a networked response (discussed further in next section, 6.5), there is also a call for attention to ‘command and control’ which places central governments at the core of preparedness, and urges that they define authority and responsibility in relation to pandemic. Importantly, a fairly consistent objective throughout the decade of planning is the achievement of commonality and coordination in response mechanisms directed by central governments.

Although not a central theme within the documents, there exists a corresponding understanding that there will be some variation countries’ capacities to respond. This can be seen in WHO 1999, which recognizes that “[m]any countries lack sufficient resources to prepare appropriately for such an event” (WHO 1999:30). Further examples of the recognition of varying capacities for preparedness include:

While societal and economic effects may be highly variable from country to country and dependent upon multiple factors (including the effects of the media and the underlying state of preparedness), WHO plans to assess pandemic severity based primarily on observable effects on health. (WHO 2009a:22)

While the social and economic impact of pandemic will likely vary, the WHO will guide countries in assessing preparedness based mostly on effects on human health, thus, presumably, limiting the role of economic and social consequences in formulating an assessment of impact. In addition to stimulating questions about the conceptualization of ‘health’ as distinct from economic and social structures, the above quote emphasizes the reliance on visibility or tangibility in understandings of pandemic. While the reliance on ‘observable’ health effects is likely connected to the WHO mission of providing ‘objective’ criteria to legitimize recommendations and procedure, it seems inconsistent that, despite the attempts to integrate all sectors of society into pandemic preparedness, the definition of health would not include economic and social factors. Furthermore, the acknowledgement that there is variation according to national and other contexts, connects to the broader theme discussed throughout of governing through ‘freedom’, where the language of ‘recommendation’ and ‘guidance’ is implicated in invoking a self-driven response from states and other bodies.
Within the texts, the WHO assumes limited responsibility for addressing differences in the power to engage with and execute directives. For example, WHO 1999 states that the “WHO will seek further support in mobilization of resources for countries with limited capacities” (p. 15). In the later documents, the organization will “encourage the provision of international assistance to resource-poor countries” (WHO 2005:26; WHO 2009a:36). It is clear that the WHO views its role in facilitating assistance from other, presumably ‘resource-rich’ countries to address deficiencies in investment in preparedness. While the documents present the goal of standard global response measures, the recognition that there are countries with limited capacity to respond suggests that these guidelines may not be intended equally for all nations.

The WHO 2009a and WHO 2009b plans introduce the importance of ‘vulnerable groups’ in the context of planning, particularly with respect to the legal and ethical considerations that are introduced as part of the whole-of-society approach. There is some reference to the role of the private sector in providing critical products for vulnerable people, although the details of these actions are left to the local or sub-national decision-makers and are dependent on context. Similarly, the issue of ‘equity’ in relation to vulnerable populations is addressed explicitly for the first time in the 2009 documents:

As far as is practical, equitable access to health care and other vital services should be ensured. In particular, the needs and rights of the vulnerable should be considered, and they should be included in planning and response processes through which their preferences and interests can be articulated and incorporated. Vulnerable groups should be specifically identified based on local circumstances and include refugees, internally displaced persons, migrants, ethnic minorities, the poor, the elderly, the physically and mentally disabled, people confined to prisons, the homeless and visiting foreign nationals. (WHO 2009b:13)

In many countries, national and international civil society and community-based organizations will have a key role in meeting the basic needs of vulnerable populations. It is therefore critical that these organizations have in place plans regarding how they will continue their essential services during pandemic. Governments should involve civil society and local communities in developing pandemic preparedness and response plans and should work with local and international humanitarian agencies and organizations to identify who has the capacity where to meet which basic needs of vulnerable populations (food, health, shelter, water, and sanitation). (WHO 2009b:12)

While these recommendations suggest collaboration between national authorities, civil society and community-based organizations, they do not elaborate on the specific roles and responsibilities of each sector. In terms of equitable access to healthcare, the suggestion that
collaboration be considered, providing that it is ‘practical,’ leaves the decision-making regarding this issue (as with many other areas) to the discretion of the national authority. Furthermore, the issue of vulnerability is largely framed as a local circumstance, thus representing variation dependent on context that would presumably require a corresponding response in pandemic planning. This framing presents an understanding that ‘vulnerability’ and ‘equity’ exist independently of the global (economic) context. In fact, it is striking that, given pandemic planning as a global endeavour, issues of inequality are presented as particular to context, thus obscuring broader processes (e.g., economic globalization) and structures (e.g., income) implicated in the production of so-called ‘vulnerable’ of groups.

There is an underlying tension between recommendations for standardized control measures that permeate the pandemic plans, and the recognition that the experience of pandemic or capacities to prepare may not be consistent across all nation states or populations. As such, it is acknowledged that national authorities may need or want to modify WHO recommendations to suit the particular context within which they are working:

National authorities are free to adjust the suggested additional national subdivisions of phases given here. However, WHO strongly recommends that countries consider the national actions proposed in this document when developing or updating a national plan. (WHO 2005:6)

Countries are encouraged to further estimate and prepare health care needs based on their own resources and experiences, with particular concern to vulnerable populations... Countries are encouraged to further estimate excess workplace absenteeism during a pandemic based on their own context and to guide all sectors to develop business continuity plans for high and possibly fluctuating levels of absenteeism throughout the pandemic. (WHO 2009a:54)

In this way, countries are further implicated in the process of preparedness through the assessment of particularities as they relate to the specific national or sub-national context. Where in the first, earlier quote there may be some latitude for divergence from proposed actions (although this is not recommended), the second quote clearly demonstrates the expectation that measures be founded on WHO directives.

The WHO 2009a plan provides general guiding principles with which to frame ethical responses, but ultimately recommends that ethical issues be considered in light of context specific details:
An ethical approach does not provide a prescribed set of policies. Instead, it applies principles such as equity, utility/efficiency, liberty, reciprocity, and solidarity in light of local context and cultural values. (WHO 2009a:15)

The framing of national action approaches points to a broader technique of governance where countries are elicited to act through the language of ‘recommendation’, and at the same time possess the freedom or power to adapt these suggestions to their needs and context. In this way, recommendations characterize the evocation of state response through the non-coercive control of WHO. The expectation that WHO recommendations will be followed is articulated with the acknowledgment that individual nations will require some level of independence in decision-making. For example, the Rapid Control Operation, introduced in WHO 2009a, involves ongoing input from WHO, while still remaining within the control of the nation-state: “Ultimately the decision to launch a rapid containment operation rests with the national authority” (WHO 2009a:22). This is all the more significant when considered in combination with my earlier point on the ‘moral duty’ to act that underlies recommendations in the documents.

The representation of modification of procedure also speaks to the broader objective of flexibility within the theme of surveillance, containment and control. In this respect, it appears that the directives are increasingly intended as a foundation for more precise action at the national level. In this respect, the WHO directives tend towards the universal in an attempt to maintain the “flexible and agile approach” that is required to adapt to the specific details of the context, which, significantly, is highly uncertain at the time of writing (WHO 2009a:22). As discussed in Chapter 5, the planning documents progressively attend to the possibility of varying experiences and scenarios that will need to be incorporated into national and local plans, and advise these levels of government to “plan for different scenarios that may occur” (WHO 2009b:7-8). Thus, the balance between the universal and the particular in procedure is part of the broader logic of flexibility that pervades the texts. While the common preparedness of nations is the overall objective of planning, this is desired only so long as it does not impede capacity to provide a flexible and context-specific response to highly uncertain problem of pandemic.

6.5 Accounting for multiple and mutual vulnerabilities

Between 1999 and 2009, the planning documents increasingly attend to a multiplicity of global interconnections, primarily through recommendations that countries and other bodies
(e.g., businesses and other sectors) map out vulnerabilities that may result from these linkages. The concern regarding mutual vulnerability due to connectedness underlies the discussion of issues around travel/border measures that is generally limited to the WHO 2005 document. One response to the risks resulting from the circulation of bodies through air travel and other means is exemplified in WHO 2005’s description of nonpharmaceutical interventions at the international level. These recommendations for travel-related measures suggest that particular kinds of circulation require greater scrutiny and surveillance than others. This is illustrated in suggested border measures where directives “[recommend] that travelers to areas experiencing outbreaks of highly pathogenic avian influenza avoid contact with poultry farms and live animal markets and [recommend] deferral of non-essential travel to affected areas” (WHO 2005:44). These advisories portray particular spaces, such as live animal markets, as risky and necessitate restricted movement with respect to them. This focus suggests differences in risk due to circulation (economic, travel, etc). Furthermore, countries with ‘porous’ borders are particular sites of surveillance and corresponding response measures:

*Measures for countries with porous borders* (including informal or illegal crossing points) *adjoining affected areas*: Raise awareness among health-care providers and general public to facilitate surveillance and response measures, such as social distancing, quarantine or isolation. (WHO 2005:46)

Such recommendations demonstrate the understanding that countries experiencing higher rates of border crossings are more vulnerable and thus require greater surveillance and specific public health interventions.

At the same time, the documents avoid advocating for measures that blatantly restrict movement across and within borders, where WHO 2009a acknowledges the desire to maintain travel and trade:

International travel measures aim to delay the entry of pandemic disease into not-yet-affected countries and will have an impact on international traffic and trade. Countries should *balance reducing the risks to public health and avoiding unnecessary interference with international traffic and trade*. (WHO 2009a:28)

WHO recognizes individual country considerations will affect national decisions, but, in general, *does not encourage*...Pandemic-related *international border closures* for people and/or cargo...The *restriction of travel within national borders* during a pandemic, *with the exception of a globally led rapid response and containment operation*, or in rare instances where clear geographical and other barriers exist. (WHO 2009a:43)
Similarly, there is no recommendation for entry or exit screening of travelers coming from affected areas. It is suggested that screening is important for political reasons and to promote public confidence, but without proven public health benefit. There is, however, “[e]ntry screening for geographically isolated infection-free areas…[which] may prevent entrance of pandemic virus…[and] [m]ay also be relevant where the country’s internal surveillance capacity is limited” (WHO 2005:45). The suggestion that heightened regulation or surveillance may exist for persons connected to countries deemed ‘higher risk’ due to limited capacities, hints at the discretionary power of both nations and the WHO to restrict or regulate movement. At the same time, the caution exhibited by the WHO in recommending restrictions in circulation is indicative of the broader objective of maintaining economic flows. Instead, restrictions are largely directed at the individual level which relies on ‘informed’ (or enlightened) self-regulation through WHO ‘recommendation’.

The mutual vulnerability of people and places due to connectedness (whether it is on an international, regional, national, or local level) requires consistent planning and collaboration in order to avoid restrictions in movement. Again, the requirement that countries consult with their neighbours “about aspects of their pandemic preparedness plan that have regional or cross-border implications” (WHO 2009b:15) suggests some kind of shared risk in relation to pandemic. The consideration of regional and cross-border implications depicts a response to this vulnerability that also attempts to go beyond national borders. At the same time, some of the nonpharmaceutical public health interventions that require consideration in planning exercises are measures that invoke assessment and action at the individual level. For example, the National level measures include recommendations such as “voluntary quarantine” and “encourage prompt self-diagnosis”, and international-level measures for travellers include “self-checking, [and] reporting and advice”, and “recommend ill persons postpone travel” (WHO 2005:42-46).

These directives take place in conjunction with other surveillance mechanisms, such as the sharing of epidemiological information for contact tracing. However, measures that might limit individual freedoms are generally not recommended. Furthermore, WHO 2009a states that, “[i]f exit screening is implemented, it should be considered as a time-limited intervention and the isolation and treatment of cases and quarantine of contacts resulting from screening must be carried out in accordance with IHR” (WHO 2009a:43). The reference to the IHR in directing
restrictions to movement sheds light on the intricate balance between freedom and constraint, complicated by the implementation of new international regulations. Generally, the WHO does not recommend the restriction of traffic within national boundaries, with a few exceptions, including the implementation of a globally-led rapid containment operation which involves some limits to movement. Furthermore, information provided by authoritative bodies is a key mechanism to invoke self-regulation at the individual/household level. Households are called upon to “ensure that they have access to information, food, water, and medicines” (WHO 2009a:18). The documents do not acknowledge possible barriers or disparities in access to these resources.

The concerns surrounding multiple and mutual vulnerabilities within society correspond with the development of planning measures to include numerous participants beyond the health sector, following the WHO 1999 document:

Of critical importance in pandemic preparedness is intersectoral planning involving partners outside the health sector. These partners include other government departments (e.g. agriculture, transport, trade, labour, defence, education, the judiciary) at multiple levels of government, as well as partners in the private sector, including industry and nongovernmental organizations. (WHO 2005:2)

This marks the expansion of responsibility for pandemic planning outside of the health sector to include numerous other relevant bodies. Society becomes increasingly represented in relation to the vulnerabilities that may arise as a result of the interconnections or associations between different sectors and bodies. The WHO 2009a and WHO 2009b documents emphasize the interconnectedness of society in its ‘Whole of Society’ approach to pandemic preparedness, acknowledging all sectors of society. The notion that planning responses will be inadequate if they do not cross boundaries through coordination (and will limit the ability of the health sector to respond) is a key foundation of this approach.

In addition to the notion that the health sector is vulnerable due to its reliance on many other sectors of society, this approach emphasizes that general interdependency requires consideration in the development of comprehensive pandemic planning:

The health care sector always faces especially severe challenges during a pandemic. In the pandemic plans of some countries, the relationship between the health care sector and other sectors has not yet been fully considered and the complexity and interdependency of systems on which health care settings rely has not yet been fully taken into account. (WHO 2009b:10-11)
The document continues to list the following sectors upon which healthcare institutions rely: transportation; telecommunications; energy; water; pharmaceuticals; and finance. The plans can be interpreted as acknowledging the lack of borders between sectors in society, which results in shared vulnerability, and necessitates accommodation for nodes of connectedness in preparedness planning by focusing on ‘interoperability’. In this sense, the later documents introduce points of connectedness as a focal point of planning.

The importance of identifying possible points of failure due to connectedness is central to the apparent goal of integrating all social sectors into the process of pandemic planning:

In the absence of early and effective planning, countries are likely to face wider social and economic disruption, significant threats to the continuity of essential services, lower production levels, distribution difficulties, and shortages of supplies… if the electricity and/or water sectors are not able to maintain services, this will have grave implications for the ability of the health sector to function and will result in severe humanitarian consequences for vulnerable populations. The failure of businesses to sustain operations would add to the economic consequences of a pandemic. Some business sectors will be especially vulnerable (e.g. those dependent on tourism and travel) and certain groups in society are likely to suffer more than others. (WHO 2009b:5)

A key premise of this later planning approach is that “critical interdependencies” among sectors need to be identified prior to an outbreak in order to determine possible sites of vulnerability, and allow for the ‘continuity’ of ‘essential services’ during a pandemic. This is a departure from the approaches in the first two plans that tended to focus on the health sector. In contrast, the WHO 2009 plans implicate all sectors of society into the process of preparedness, largely through directives that urge social sectors to delineate interdependencies that may lead to vulnerability in the pandemic event:

Public and private providers of essential services are interdependent and rely on the goods and services of other sectors in order to sustain their operations… The water sector relies on other sectors for many critical functions, including the energy sector to power its equipment, the chemical sector to provide materials to treat water, the transport sector to deliver supplies, and the food and healthcare sectors to protect the health of its workforce. In whatever way the sectors define themselves; these critical interdependencies constitute complex vulnerabilities. Interdependencies need to be identified by each of the essential service providers… Pandemic plans should take into account potential failures generated by interdependencies. (WHO 2009b:10)

Furthermore, WHO 2009b directs service providers to “map out… critical interdependencies” in order to mitigate potential disruptions to the supply of essential goods and services (WHO 2009b:7).
At the same time, the WHO 2009b plan draws on interconnectedness as a key element of success in terms of response to pandemic. For example, community-based organizations are presented as representing ‘large networks’ and are therefore considered vital in the dissemination of information and assistance during a pandemic:

Community-based organizations represent large networks that can translate scientific and government messages and recommendations, which otherwise may be met with mistrust or scepticism by parts of populations. Community leaders can build public confidence, disseminate information, and identify people at risk. Such organizations can also provide community-based services to meet the needs of the vulnerable during a pandemic. (WHO 2009b:12)

The activity of coordination is therefore assigned a central place in planning measures, where coordination among interconnected sectors is required in the face of the possibility of ‘failure’ due to these intersections:

It is important that planning extends to a local level, including local governments. Central authorities should provide advice to local authorities. Local governments should coordinate with non-governmental agencies and organizations. Local authorities and community groups should plan for how to cope with large numbers of ill people requiring help in their communities. Coordination committees that bring together all local agencies and organizations can provide a central focus for cross-agency cooperation to deal with disruptive challenges. They can coordinate decision-making across departments at the local level. (WHO 2009b:12)

I contend that the concept of ‘critical interdependencies’ constitutes a powerful discursive strategy in the control of pandemic and functions to further integrate pandemic preparedness into the existing fabric of society. To conclude, mutual vulnerability due to interconnectedness is invoked throughout the texts, and targets individuals, countries and institutions or organizations within society. This common vulnerability generally requires attentiveness to, and planning that considers, connections, rather than movement restrictions or the severing of ties between various formations (e.g., individual travelers or social sectors).

6.6 Conclusion

Surveillance, containment and control centre on a system of early warning whose objective is the detection of a pandemic virus before it becomes an actual pandemic. This system encompasses a broad range of actors and bodies in the duty of preparedness, and increasingly draws upon the collaboration between human and animal surveillance organizations. Here, the pandemic virus is cast as some vaguely-defined form of deviation from the archive of
knowledge of other viruses. At the same time, the reliance on a generic surveillance system generates increased possibility for ‘false alarms’ and introduces the problem of distinguishing the pandemic virus from other possibilities. Where the prospect of ‘misrecognition’ holds less significance in the later plans, I suggest that the importance of distinguishing between strains becomes redundant to control, as this constitutes the very process of preparedness.

Another key mechanism of control is in actions geared towards anticipating the exception. This is framed by WHO directives as the need to consider the implications of possible failures of varying elements of society in case of a pandemic. This forecasting includes projected changes necessary for legal and economic processes, along with a wide range of other procedural considerations. Importantly, the referent for these anticipations is the ‘normal’ condition of society, and the implementation of exceptional measures is presented as drawing upon normal, yet divergent, procedures. This process involves the integration of multiple contingencies into existing mechanisms, and these represent the vital significance of flexibility in responding to uncertainty. In the WHO 1999 and WHO 2005 plans, these mechanisms are presented as warranted, in and of themselves. However, in the later documents, pandemic preparedness is framed increasingly in terms of its contribution to the strengthening of society. Hence, pandemic preparedness becomes a part of a broader discourse of resilience that is no doubt linked to contemporary economic and political contexts. The acknowledgement of limited global resources to invest in planning is countered with the notion of sustainable preparedness that targets a wide range of issues over an indeterminate period of time.

An additional theme addressed in this chapter was the tension or balance between freedom in governance, primarily by nation states, and the constraints imposed by the universal measures that are increasingly authoritative under the IHR (2005). The balance between the general and particular is framed by a broader logic that revolves around the necessity of flexibility in response measures. The particularity of context, such as variations in capacity to prepare and differences in experience of disease, presents a seeming tension in light of the general preparedness measures outlined by the WHO. Furthermore, the differences that do exist between nation states or other bodies are entirely depoliticized with respect to the factors or processes framing these inequalities. While the modification of general measures appears as discretionary on the part of national authorities, action by nations in collaboration with the WHO is continually invoked through a variety of mechanisms. This contributes to what may be
understood more broadly as a ‘moral duty to prepare’. Finally, the acknowledgment of interdependencies and interconnections within society increasingly frames response mechanisms in the 2009 plans, and represents a broader integration of all social sectors into the project of preparedness.
7 Discussion

In the preceding chapters, I have developed an analysis of the generalized process of preparedness, whereby knowledge production networks like the WHO become implicated in creating the very conditions of emergence through representations of the virus and congruent responses. In this way, discursive tools such as rendering the virus ‘visible’ through ongoing surveillance aimed at distinguishing between the multiple possibilities of ‘false alarm’ versus ‘true’ pandemic virus, and the identification of key sites of risk epitomized by endemic H5N1, allow for immediate intervention into the future event. The intensive focus on early warning discussed in Chapter 6 extends the event of pandemic into the present and, in doing so, increases possibilities for intervention and profit. Furthermore, the preceding discussion of the ubiquity of risk constructed throughout the documents similarly uncovers possibilities for the exercise of preparedness. If every case of emergence represents the possibility of evolution into the next pandemic, then this, in theory, necessitates ongoing attention to the ordinary in its ‘natural’ capacity for change. Thus, the project of preparedness attempts to account for all possible alternatives in the multiplicity of emergence, and the tension between pandemic and non-pandemic conditions speaks to the ‘flexibility’ built into the conceptualization and regulation of the problem of ‘pandemic’.

In this chapter, I interpret my findings in light of the theoretical framework developed at the beginning of my thesis. This discussion explores three lines of argument. I begin by examining the ways in which the discursive structuring of viral features enables the governing of the future event of pandemic within the present. Next, I explore the intricate balance between freedom and constraint implicated in the regulation of the circulation of risk throughout the documents. Finally, I consider the relationship between the ‘securing’ of society at the global level and the integration of pandemic preparedness and ‘crisis’ in general, into existing social and political arrangements.

7.1 Governing the future through pre-emption

A key component of pandemic preparedness is the assembling and systematization of information presented as relevant to the future pandemic event – this is in effect, the preparedness planning process, of which the WHO guidance documents are a key component.
The process of accumulation of information and data is a central tool in the production and reproduction of knowledge about pandemic and functions as a technique of legitimation. This is especially the case as the ongoing collection and dissemination of knowledge about pandemic also serves to highlight the uncertainty intrinsic to the problem, in turn justifying the need for further data collection. That is, the more the event is detailed, the more obvious the uncertainty inherent to the problem becomes. As illustrated, uncertainty is central in framing this planning process, as it necessitates the ‘continuity’ that drives ongoing global pandemic influenza governance. The entire pandemic event is conceptually located within the realm of the ‘unknown’, with respect to when, where and how the contagion will transpire.

In response to this unknown, the pandemic planning exercise largely involves the elaboration of features of pandemic in order to make the event ‘knowable’. Furthermore, there is a significant temporal component to this dynamic, where the future event of pandemic is relocated within the present in order to effectively intervene. My analysis suggests that this temporal repositioning is a key technique in managing the uncertainty and unpredictability of the virus and the overall pandemic experience. As illustrated in chapter 5, the influenza virus is first made known through a series of representations depicted through the planning documents, and these enable certain interventions into the present, not least of which includes generic and intensive surveillance. Thus, the discursive construction of the virus as transformative plays a central role in enabling and structuring the response to pandemic.

Importantly, this is at once a process of symbolic and economic integration made possible through knowledge production in these planning documents; the virus is imbued with meaning and agency and is at the same time incorporated into pertinent economic processes, such as those related to vaccine production. In my analysis, the process of integrating pandemic into existing social and economic structures begins with the construction of the viral object, where the influenza virus is a primary point of intervention again achieved through knowledge of the object. While the texts draw upon the legitimacy of the fields of science and medicine in substantiating claims made about the virus, my analysis reveals the force of these representations in imparting a particular cultural understanding of the virus in terms of its potentiality and capacity for change. Significantly, this knowledge production process constructs the virus as an unpredictable and indeterminate phenomenon, but additionally draws from known features of influenza in order to position the virus as a target of control through response mechanisms.
In this way, potentiality is discursively attached to both the known and the unknown, and accordingly joins the mundane normalcy of benign viral transformation with the possibility of transformation into harmful viral circulation. This indeterminacy speaks to the issue of ‘multiplicity’ that is central to the governance of emergence, in the sense that the “problem of multiplicities is precisely that biological life itself, microbial life, is understood to be essentially emergent” (Thacker 2008:313). The understanding of biological life as emergent is central to the discursive construction of the virus throughout the texts and the construction of the virus as full of potential is a reflection of this understanding. If biological life is conceived of in these terms, a crucial function here is in the grounding of this organizing logic according to stable viral features. Moreover, the way that we understand the emergence of biological life necessitates a particular form of regulation of pandemic. The rationalization of the virus through knowledge allows for its corresponding control and eventual functionality in terms of economic productivity and the general strengthening of society.

The elaboration of characteristics of the influenza virus is one element of the process of objectification. The regulation and control of the influenza virus, and the impact of associated disease, represents a particular form of rationalization that is very much connected to contemporary forms of power and knowledge. Here, the virus can be conceived of as rational in the sense that it is positioned as knowable, controllable and ultimately functional in order to allow for its integration into the broader pursuit of profit within the economic system. In this regard, the construction of the virus as a ‘rational’ entity is made possible through its place as an object of understanding and control by the disciplines of science and public health. The characterization of the virus as ‘unpredictable’ and full of ‘biological potentiality’ become stable features of its core which then allow for a mirroring in response, seen in corresponding mechanisms of surveillance and control. Thus, risk is made governable through these very features of the virus. I suggest that the ubiquity of risk as ordinary and omnipresent as discussed in this thesis normalizes the possibility of pandemic in the everyday, and thus expands the possibilities for the temporality and territory of intervention. Risk occurs in the interconnections or boundaries that constitute the social world, and in the viral circulations that we know as ‘natural’. This conceptualization of risk is not rendered governable by calculating probabilities, but instead requires the ongoing engagement with the possibility of exception.
This interpretation corresponds with other analyses of pre-emptive approaches that emphasize the shift in governing infectious disease away from the objective of prevention in the expanding target of control. As Weir and Mykhalovskiy (2010) contend,

the EID [Emerging Infectious Disease] concept constituted an epistemological break in international communicable disease control from one oriented to known diseases to one responsible for a microbial world full of potential and surprise. Not only was the microbial world full of the actual, the emerging, and the potential, but this microbial multiplicity also had to be made governable. (P. 62)

My analysis provides a particular empirical referent through which to examine possibilities for governing this multiplicity. Furthermore, in their analysis of the governing of EIDs more generally, Weir and Mykhalovskiy underscore that the ‘world on alert’ is no longer organized around a vision of prevention. The authors’ work on global emergency vigilance demonstrates that early warning outbreak detection now targets what they term the ‘event’, which “extends to species other than humans, to environmental disasters, to nuclear explosions, and to the deliberate spread of pathogens” (p. 6). They contend that the shift from known cases of disease through surveillance to the identification of events that may have negative consequences for international health marks a shift in the governing of infectious disease, in which the target of public health events are both known and unknown. In my research, the response to these multiple possibilities involves a range of mechanisms that progressively integrates the exception into normal circumstances, through this construction of potentiality, rendering pandemic and ‘normal’ circumstances as largely indistinct. This is most apparent in the 2005 restructuring of pandemic phases to include animal infection (not necessarily accompanied by human infection) in the preparedness phases. Given the representation of animal infection with influenza as a ‘natural’ or normal state, this response mechanism incorporates the normal state, and this is enabled through the trait of potentiality. In a broader sense, this signifies that the required action against pandemic is ongoing engagement with the possibility of emergence, rather than the prevention of specific or isolated disease outbreaks.

The discursive techniques presented in the first section of Chapter 5 – the ‘natural’ circulation of the influenza virus, the potentiality or latency of the virus, the shift from focus on the ‘novel’ virus to endemic infection, the pandemic as disruption of ‘normal’ circumstances, and seasonal influenza as a flexible phenomenon – operate to position biological life as inherently emergent. This logic of dynamism, framed as internal to the influenza virus, is
reinforced by these representations, and justifies certain public health interventions, such as the consistent focus on the development and production of vaccine and antiviral distribution at the expense of other approaches that might allow for closer examination of social and material conditions underpinning the control of pandemic. These interventions are part of the “set of techniques through which public health agencies are positioning modes of intervention vis-à-vis a concept of ‘the emergent’ – a mode of pre-empting emergence” (Thacker 2008:312). Through the discourse of emergence, the framing of infectious disease as fundamentally ‘emergent’ thus invokes public health to mobilize against ‘emergence’ rather than “a singular disease with its specific etiology” (Cooper 2006:118). The overall effect of this framing of the virus – as inherently unpredictable and on the threshold of transformation – justifies the intervention upon the collective existence, or the global population, as the target here, which becomes one of an ongoing endeavour.

Furthermore, I suggest that the construction of the virus’ potentiality endows it with agency characterized by a level of calculation that wavers on the brink of ambitiousness or insidiousness. Among many things, the agency endowed upon the virus contributes to the heightened uncertainty involved in the event of pandemic, and presents new dilemmas with respect to the control of unknowable motivation or will, attributed to a non-human agent. In this respect, the characterization of the virus with the feature of biopotentiality paradoxically highlights the limits of science and scientific knowledge throughout the process of preparedness. The construction of the virus as a stable agent could be understood as an attempt to accommodate the unknown, and in this way reveals the limits of scientific thought. The virus as possible ‘invader’, constructed through representations of its employment of the individual body and the global body politic, further requires the response of pre-emption advocated throughout the documents. Moreover, the virus and its potentiality are featured in contrast to the social body and thus must be eliminated or integrated in order to continue the ‘normal’ functioning of society. As we have seen throughout my analysis, this casting of the viral threat is complicated by the parallel functioning of epidemic as operating ‘for’ or ‘against’ the people, connected to the processes of circulation as intrinsic to the population (Thacker 2009). The discursive construction of the ‘viral aggressor’ in these texts is a key tool in the regulation of infectious disease, and thus in the securing of society.
This unpredictable threat is met with numerous techniques intended to control emergence, not the least of which is the positioning of the influenza virus as ‘visible’ within the overall project of preparedness. In this regard, the pandemic virus is ‘made visible’ through the focus on the H5N1 virus as the probable origin of emergence. Moreover, I assert that the entire process of surveillance discussed throughout Chapter 6 is implicated in enhancing the visibility of the virus, and allows for the possibility of intervention. The uncertainty inherent in pandemic is employed in such a way as to make possible strategies of intervention which seek to control the effects of this future event (Rabinow and Rose 2006). This is illustrated in my discussion of generic systems of surveillance and the corresponding possibility of misrecognition of the pandemic virus. While the documents acknowledge that unknown viruses may exist, there is an obvious reliance, throughout the pandemic phases, on the visible or known in determining levels of risk.

These processes of achieving visibility resituate the virus away from the realm of the unknown and provide a more concrete and tangible object for intervention, through techniques of boundary regulation, for example. The delineation and regulation of boundaries between bodies (animals and humans), populations and territories targets the identification of sites of risk for generic surveillance purposes. This surveillance is largely intended for increasing the visibility, and, thus, knowledge of viruses and viral activity or transgression. Representations of viral expansion through the transgression of corporeal and territorial boundaries are articulated concurrently with response measures that seek to control this expansion. In this way, the knowledge of the virus is co-constituted with the mechanisms of control that target the spread of infection.

As suggested above, representations depict the virus as employing the individual through infection as a means to achieve its broader expansion. In this regard, the body becomes a machinery to further the virus’ own end, and this is consistent with the broader portrayal of the virus as harnessing the societal machinery on the global biopolitical level. This macro-conceptualization of the capacity of the virus is significant in its facilitation of the functionality of the virus in economic terms, but also in other, symbolic, ways. The representation of the expansion of the virus across bodies and territories necessitates global response mechanisms such as the actualization of a ‘global stockpile’ of antivirals and other materials. Such actions have significant consequences in terms of the economic profit of pharmaceutical companies,
from an unrealized event. Beyond these more tangible examples of the conversion of the influenza virus through the processes of knowledge, control and function, I argue that the pandemic virus, in particular, becomes functional in terms of what it can contribute to the strengthening of society in general. The strengthening of society through pandemic influenza preparedness initiatives becomes by 2009 a central organizing or legitimizing technique in the call for governments to invest in this strategy. The pandemic event becomes incorporated into a more generalized conceptual emergency framework poised to regulate and control any number of possible emergent threats.

The pandemic phases depict a (virtual) scenario where response mechanisms are constantly evolving to assimilate an ever-larger expanse of risk. Such viral features of unpredictability, transformation and expansion, evoke and enable a particular kind of response to the problem of pandemic. Among other things, response measures involve constant surveillance, updating, and sharing of information. While these measures aim to minimize and contain mixing and circulation, the acknowledgement that this is an inevitable characteristic of the viral world (not to mention the broader social world) means that in the event that containment fails, the system must be constantly prepared to manage or mitigate the effects of the next progression of the influenza virus. Furthermore, the projected limit of this evolution is evident in the representation of the pandemic virus as returning to some ‘normal’ state following the pandemic event, to be integrated through the general immunity of the population. In light of the individualization and naturalization of immunity that occurs through biomedical discourses, this framing further obscures conceptualizations of immunity in terms of broader social and economic forces. The idea that the pandemic virus will ‘run its course’ in the general population, and that this is then followed by an exemption conferred upon the people, reproduces the ‘naturalness’ of infection and immunity. This portrayal has further implications for inequality and infection given that individuals and populations also ‘gain immunity’ through vaccination and access to material resources. In this respect, the casting of the condition of immunity in terms of a stage inherent in cycles of infection, has implications for naturalizing varying ‘effects’ of disease on different geopolitical areas.

As I have illustrated, there are numerous areas implicated in the merging of exceptional and normal conditions. These include representations of the virus as an entity with the potential to become harmful and spread between bodies and territories, and response mechanisms such as
pandemic phases that reflect the transformation of so-called ‘normal’ circumstances into stages of pandemic risk. The changing of procedure in anticipation of the pandemic brings into being the exception through preparedness measures that change, account for, or adapt to expected circumstances. The common projection that pandemic will in some way disrupt ‘normal’ conditions is another key tool in the regulation of pandemic, and is simultaneously implicated in the integration of pandemic into the everyday. This projection corresponds with later measures to chart the features of normality, with respect to everyday interdependencies, relations and roles. Following this process, the implementation of contingency measures and other mechanisms aimed at achieving preparedness represents the relocation of the future event of pandemic within the present. This is a key discursive strategy within the WHO documents. This temporal repositioning is also a central strategy in the overall process of knowledge production and efforts to continuously map and update features of normalcy cohere with representations of the virus as continuously evolving or transforming.

The effect of these governing techniques, in relation to the larger objective of security, is that ‘pandemic’ and ‘normal’ circumstances become increasingly difficult to distinguish. In this sense, the present becomes ever-implicated in the governance and the very reality of the future. As Thacker (2008) asserts, “[w]hat Foucault identifies as the apparatus of security...creates the condition in which the sovereign exception is placed not in opposition to or outside of the multiplicity (or emergence) of life, but rather as something that exists internal to it, as a constitutive part of its logic” (p. 317). I contend that my analysis is an exemplar of the condition of exceptionalism as constitutive of the multiplicity of life. In this sense, pre-emption is the ‘natural’ outcome of ongoing engagement with the exception. The indistinct divide between pandemic and non-pandemic conditions elaborated through global pandemic preparedness, is but one example of this response.

A broader consequence of this organization is the opening up of possibilities for intervention given temporal relocation of the event into the present. This invokes a number of important ontological and epistemological questions regarding the governance of the future within the present, not least of which involves the interrogation of a context in which we are in constant engagement with the future, or that which is coming into being. The endeavour of preparedness both reveals and generates possibilities for a ‘pandemic industry,’ of which pharmaceutical development and stockpiling is a crucial component. Furthermore, this work on
the future needs to be understood in the context of a co-constitution of a present in which life-saving and essential technologies (e.g., basic pharmaceuticals) are a remote reality for some.

### 7.2 Governing the circulation of risk: Between the limits of freedom and constraint

As illustrated throughout the results chapters, circulation is a particular target of interest in the planning documents. The representation of circulation takes many forms, including the circulation of viruses in nature, in animal and human populations and across territories through different channels, such as air travel. The idea that viruses ‘know no boundaries’ is widespread in contemporary popular, medical and scientific texts, and is frequently framed as an effect of an increasingly globalized world (Wald 2008). This discourse of ‘the virus’ as disrespecting boundaries is present in the documents analyzed, and like many accounts of viral traffic, advances an understanding of the virus as unbounded in its potential for contagion. At the same time, the naturalness of circulation, of both viruses and bodies, is also a consistent feature. In this regard, circulation is presented as both a natural process but also as inherently risky because it is a precondition for the transformation of viruses and thus of the emergence of pandemic.

The most apparent representation of risk and interconnectedness is illustrated by the designation of risk based on the virus’ spread across national and regional boundaries in the pandemic phases. In this example, spread occurs through the transgression of political boundaries, and expansion in spread corresponds with enhanced risk. In response to this risk, boundary delineation takes the form of distinguishing between ‘affected’ and ‘unaffected’ countries, along with an intermediary position of risk reflected in the designation of risk based on levels of interconnectedness with other affected nations. Here, risk is linked to the interconnectedness of territory, and the potential for risk is partially based on circumstances in other neighbouring countries. This mutual risk is based on the understanding of a potential that the virus will transgress national borders.

In the area of pandemic planning, biopolitical regulation targets, not simply circulation as it pertains to the (human) population, but also as it pertains to the innate tendency of the influenza virus to circulate. Of particular concern is the regulation of those ‘between’ spaces that present a potential conduit for transmission of the virus between bodies and species, as well as across territories. Between-spaces and the social relations that are implicated in their creation
are constituted as sites of potential risk, and consequently as possible targets of surveillance and control. In this way, the transgression of boundaries, corporeal and territorial, by the virus is discursively attached to heightened risk. Yet, as I discuss below, the final objective of this form of regulation is not immobilization, but rather the continued flow of phenomena that circulate. As natural processes, circulation and exchange are both necessary and desirable for continued social functioning, but through surveillance and other forms of control become involved in a process of selection that distinguishes between desirable and objectionable forms. This process of differentiation is necessitated by the requirement of continued economic circulation.

Furthermore, the interconnectedness of society is presented as enabling or enhancing the circulation of the virus, creating a network that provides multiple routes through which potential transmission can occur. The recommendation to map critical interdependencies and account for multiple and mutual vulnerabilities throughout the documents (especially in 2009) becomes an important means of addressing or mitigating the potentially harmful effects of viral circulation. In this way, the interconnected configuration of society and, correspondingly, circulation operates as both a target and a tool of governance. The devices aimed at regulating circulation take the form of surveillance and network mechanisms, diagnostic and laboratory procedures and communication, to name a few. Importantly, these technologies themselves are implicated in ongoing processes of circulation – of information, viral isolates, images, bodies, food products, capital and so forth.

In this section, I examine these ideas further by exploring the relationship between risk and circulation, along with the affiliations between circulation and broader economic and social functioning, in order to consider the contribution of these associations for the governing of risk. There are two separate themes that relate to the ideas about freedom and constraint presented throughout my analysis. The first refers to the freedoms associated with governing, for example, the freedom of nation states to diverge from international standards in governance. The second involves the circulation and transgression associated with the regulation of boundaries. The first also addresses the tension, demonstrated throughout the documents, between the WHO’s invocation of conformity to generalized preparedness measures and the acknowledgment of variation in capacity to prepare. The complex balance between freedom and constraint, in terms of circulation and pandemic governance more generally, is vital to the efficient regulation of risk. My research suggests that the task of pandemic governance compels an intricate balance between
freedom and constraint in the regulation of a disease that has not yet been realized. The ongoing and consistent engagement with preparedness underpinning pandemic governance requires allowing the circulation and movement associated with the continued functioning of society, along with the recourse to constraint if necessary. In this sense, the possibility of constraint is implicated in the discretion of a particular country or the WHO, depending on the specific circumstances. Once again, this ‘discretionary power’ as a form of authority throughout the texts is very much connected to the logic of contingency (in the context of considerable uncertainty), where response mechanisms are conditional upon the many projected scenarios.

As Turner (2007) notes, accounts of globalization that focus on increasing flows that result in dissolving social boundaries often neglect the study of the “paradox that globalization also produces new systems of closure” (p. 289). In this way, the necessity of ‘flexibility’ and ‘fluidity’ in the economic interconnectedness that we ascribe to globalization also involves the imposition of immobility regimes directed towards certain political subjects (Turner 2007). I argue that the regulation of circulation involves an ongoing engagement in decisions about freedom and restriction in relation to different forms of mobility or circulation. The imposition of immobility or constraint, while imperative to understandings of disease governance under globalization, represents not so much a paradox as suggested by Turner, but is instead consistent with a crucial feature of biopolitical regulation involving the calculation of “the extent to which life must be incited to be free, or subjected to scrutiny and discipline” (Kiersey 2009:41).

The logic of regulation is one of freedom to maintain what is ‘natural’; but bound up in this freedom is the possibility of a discretionary power geared towards closure and constraint. This discretionary power held by international and national authorities is ultimately what determines the exception – with respect to the designation of pandemic, but also to an array of other preparedness mechanisms that might constrain the natural functioning of society. Foucault’s (2007) framing of security apparatuses as recasting the regulation of the population in terms of ‘natural’ features emphasizes the organizing principle of freedom under this arrangement of power. In contrast to disciplinary mechanisms, security operates through the logic of openness to ‘let things happen’, rather than that of closure and restriction (although this could be framed as another form of control). In Foucault’s words,

[...]he function of security is to rely on details that are not valued as good or evil in themselves, that are taken to be necessary, inevitable processes, as natural processes in
the broad sense, and it relies on these details, which are what they are, but which are not considered to be pertinent in themselves… (P. 45)

While Foucault is referring here to the government of the population, the theme of governing what is natural takes on new meaning in relation to the governance of life at the molecular level (Rose 2001, 2007; Braun 2007). My work illustrates a particular example of the governing of molecular life that operates at the level of the global population. I propose that this ‘molecular gaze’ poses a new problematic when considered in light of its discursive exploitation of varying scales and configurations conceived of at the global level. The harnessing of populations, territory, individual bodies, in addition to the social and economic machinery, by the virus, implicates a wide range of bodies, broadly imagined, in the network of pandemic vulnerability.

The ‘naturalness’ of the influenza virus – as it is constructed throughout the documents through its predisposition to circulate, propensity for change and so forth – is a central target of governance, which transpires largely through the logic of ‘freedom’. For example, individual choices relating to movement and interaction are guided by WHO and national ‘recommendations’ or ‘advisories’. The WHO guidance generally avoids outright restrictions, especially at the population level, and instead defers to countries’ individual discretion in determining whether or not such interventions are appropriate. The continued hesitancy on the part of the WHO to interfere directly with the economic and political workings of nation states requires further consideration in its implications for global biopolitics, especially in light of particular IHR requirements, such as mandatory reporting of disease.

What is ‘unnatural’ in this context is the imposition of measures that limit movement or circulation; however, if the individual does not assume the features of the ideal rational standard, then presumably this mechanism of individual freedom risks being revoked. The subject that does not conform to the self-regulation effected through the requirements of normalization is thus relegated to the margins, or, put another way, faces possible exposure to constraint and discipline. Again, this raises important questions relating to (global) inequality in light of differentiation in the restriction of mobility (Turner 2007). In this sense, the discretionary power held by various bodies (national and otherwise) is implicated in the possible creation of immobile individuals and social groups. Importantly, those who endure the effects of constraint are not representative of some external force, but reside instead within the (global) population: “The location of ‘danger’ is no longer outside the socius but, rather, in the very material from
which it is constituted: the population itself” (Kiersey 2009:32). I will return to this idea in the final section of this chapter, when I discuss the implications of my research for understandings of ‘race’ and global biopolitics.

In terms of the freedom of sovereign states, there are key changes that occur between 1999 and 2009. For instance, the introduction of the IHR in 2005 eliminates choice to some degree, particularly in terms of national freedom to disclose unusual instances of disease outbreaks. Under these regulations, nations are now required to engage in surveillance and report findings to the global community. Furthermore, the expectation that countries provide explanation regarding differences in planning measures between contiguous nations suggests the importance of employing some form of legitimate knowledge in explanations of non-conformity or non-adherence. Another significant development under IHR is that countries are now legally required to report on the ‘state of infection’ in bordering countries or countries with which they have trade and travel links.

At the same time, the freedom to deviate from the generalized preparedness measures outlined in documents continues to lie to some extent in the sovereignty of individual states, and the WHO acknowledges that countries may want to make ‘further national distinctions’ in their own plans. Furthermore, individual freedom is apparently still privileged in the WHO’s avoidance of recommendations to implement quarantine or restrict movement. This formation assumes a rational subject that will presumably make reasoned, informed, decisions for the good of the population. What is ‘natural’ in this analysis is that the mobile individual will want to protect themselves and others and will therefore limit movement autonomously. This assumption coincides with the significance of individual rights and freedoms under advanced neoliberal capitalism.

The attempt of WHO to balance the acknowledged ‘difference’ in terms of countries’ capacities to respond with the conviction that countries should conform to general preparedness measures is representative of an intricate and, sometimes seemingly contentious, equilibrium between freedom and constraint in the global governance of pandemic. The expectation that countries will conform to recommendations unless there is sound reason not to do so relates to the significance of normalization in invoking particular, desired responses. This stimulates questions regarding the normative dimensions of pandemic planning. My research may offer an
alternative to interpretations of governing through freedom, when cast in light of the restrictions presented by a moral or ethical duty to prepare, and ultimately protect others from oneself. Moreover, this moral dimension assumes a global scope when considering the involvement of nations in the monitoring of situations in other states. I return to this idea in the final section of this chapter.

The regulation of boundaries as discussed in part two of Chapter 5, reflects the understanding that viruses unsettle boundaries constructed between different or discrete material and political forms such as animal species, humans and animals, as well as territorially. This finding can be interpreted in light of Tiffin’s (2007) assertion that infectious diseases, such as BSE and SARS, provoke anxieties about contagion that must be understood in light of the “disruption of cherished ‘boundaries’ between those categories (civilization and savagery; cannibalism and carnivory; human and animal) upon which our human self-definition depends” (p. 11). In this light, it is perhaps not surprising that the representations of contagion within the documents, however covertly, operate as a means through which to reconstruct the boundaries predicted to be disturbed through pandemic. Furthermore, in the context of agricultural production, and capitalism and social order more generally, the inextricable link between the health of humans, animals and the environment, becomes increasingly apparent, and unsettles divisions upon which western ontologies and epistemologies. Tiffin (2007) suggests: “Ebola, AIDS, BSE, and SARS showed the general public that diseases made no such distinctions between ‘human’ and ‘animal’; the so-called savage and the so-called civilized” (p. 21). When disease transmission occurs between species, this represents the transgression of boundaries between ontological states—a disruption that is inherently dangerous to contemporary western thinking that values and privileges the stability of states.

From this perspective, the texts reflect the general understanding that risk becomes elevated, or multiplied through boundary transgression. Furthermore, the delineation and regulation of boundaries are symbolic in that they signify a whole range of distinctions, differentiations, and vulnerabilities in relation to pandemic influenza. In response to the multiplicity of risk internal to the processes of viral transformation and transgression, regulation takes a number forms, involving the reconstruction of destabilized boundaries through planning mechanisms that evoke consideration of these boundaries, or points of permeability. This includes the delineation of interconnectedness (and thus vulnerabilities) as a central feature of
the response and the process of preparedness. These points of permeability are constituted as inherently risky due to the potential transgression(s) that might occur at these sites. The mapping of nodes of intersection and proximity on different levels as sites of risk is a crucial function in the production of multiple sites for regulation and control.

Representations of viral transgression suggest that for some transgressions to occur there must first be a transformation of the virus. For example, in order for some influenza viruses to transgress species boundaries there must be some kind of change in the virus in order for it to be able to infect the new host. The risk inherent to transgression is profoundly implicated in the risk represented by transformation. In this way, the dual operation of transformation and transgression in representations also uncovers a multiplicity of possibilities in terms of risk, including those between: people; people and animals; different categories of animals; agricultural production techniques; and nation states. This is consistent with Blue and Rock’s (2010) assertion that “our current political moment is one in which humans are always in the company of nonhuman others, including animals and infectious agents” (p. 354). Furthermore, these forms of bodies are co-constituted in their very co-existence in the sense that “[t]he contingent presence of a border suggests not only separation, but also differences of kind that are cemented taxonomically” (Blue and Rock 2010:357). The control of boundaries between animal and human bodies that operates in the regulation of pandemic not only functions in service of containment and control, but additionally serves to re-inscribe borders between different corporeal forms whose predicted transgression (by way of the virus) has been enabled by social and economic systems.

The representation of the virus as expanding corporeally, through the population, and territorially symbolizes evolving transgression that extends beyond the individual to the global body politic. For example, the possibility that the virus would harness technology such as air travel is presented as one means through which potentiality is enhanced in terms of viral circulation. Thacker (2009) asserts that the epidemic in the context of biopolitics and the apparatus of security, presents a topological problematic, which “shifts the concern from power over a territory to the ability to calculate and intervene in the ongoing self-organization of the population” (p. 142). Importantly, the population is represented in these texts as a fundamentally mobile entity. In this vein, Hinchcliffe (2009) claims that historically, public health has conflated population with territory in its tendency to work in terms of territory. In my analysis,
boundaries implicate and attach bodies and territory on multiple levels. Importantly, these entities, imagined in terms of their regulation, are conjoined and mediated by the virus itself. In this way, the construction of the virus both necessitates and enables the boundary maintenance that occurs throughout the documents. Due to the ‘fact’ that viruses ‘know no boundaries’, this regulation operates through multiple scales and configurations. Furthermore, corporeal infection is accompanied by a broader focus on the capacity of the virus to harness the social, political and economic body. Importantly, representations of the harnessing of economic and social machinery at the global level, by the virus, correspond with the delineation of boundaries for regulation that targets possible boundary-crossing and endeavours towards the global regulation of pandemic.

I suggest that the ascription of risk to viral expansion and boundary transgression reflects a form of collective anxiety about contemporary processes of economic expansion through development. At the same time, developments such as rapid urbanization and the encroachment of humans into previously undeveloped spaces are frequently represented as naturally-driven. This corresponds with Lavin and Russell’s (2010) proposal that, “[t]he logic of contagion organizes a series of metaphors and images that our society uses to make sense of social interactions” (p. 73). The authors maintain that the ‘epidemiological imaginary’ appeals to contemporary anxieties about the transforming nature of space in the context of global capitalism. While this imaginary can take many different forms in terms of political agendas, it is perhaps particularly salient in terms of conservative concerns that frame political border crossing (e.g., immigration) in terms of contagion of the body politic. In relation to security and disease, the logic of contagion can function to challenge the retrenchment of the nation and individual under globalized relations (Lavin and Russell 2010).

This discussion requires understanding in light of dominant representations of infectious disease, which are overwhelmingly cast as originating from parts of Asia and Africa, and this invokes questions regarding what it is that the regulation of shared vulnerability accomplishes. In this sense, discretion in decision-making, discussed throughout this work, taken in light of the potential vulnerability of the countries with which a nation trades binds preparedness with the broader economic context. Put another way, the regulation of states by other nations enabled by the discourse of mutual vulnerability, is entirely implicated in the regulation of economic
interrelatedness. Such depictions implore further interrogation regarding the effects of these portrayals.

The place of circulation as a necessary element of continued social and economic functioning, while not always explicit, underlies much of the guidance analyzed in this thesis. The WHO avoidance of containment measures that might impede circulation is recurrent in the documents analyzed, and where those closure mechanisms are suggested, it is consistently presented as discretionary. In this sense, concerns about limiting contact and movement are expressed throughout the texts. Such concerns refer to the possible violation of individual rights that may occur through restricted movement, and in doing so illuminate the significance of individual freedom under contemporary liberal governance (Rose 1999). The tendency to govern through freedom places restrictions on everyday activity within the individual’s capacity for reason invoked by specific recommendations provided by public health authorities. This emphasis perhaps requires further consideration in terms of its implications for differentiating between the desirable and undesirable circulation of subjects. Moreover, if the actions mentioned are to be implemented, they are mostly presented as under the jurisdiction of the national government, businesses or individual employees.

The avoidance of restricting movement reflects the recognition that society is at its core structured around interconnectedness and circulation and thus relies on their maintenance for continued functioning. This is in line with Walters’ (2006) proposition that “today borders operate like filters or gateways...immobilizing and removing the risk elements so as to speed the circulation of the rest” (p. 197). From my analysis, we see that ‘borders’ operate at a number of different social levels, and in the case of pandemic are projected as necessarily at the discretion of a range of decision-makers.

This understanding is further demonstrated by the re-mapping of national and other boundaries according to risk, through WHO directives. In this sense, risk is determined in part according to the interconnectedness with other areas or bodies (of risk) reflected in economic or social interdependencies. At the same time, there are direct and indirect distinctions made between different kinds of inter-relations and production throughout the texts. For example, though not explicit, recommendations that travelers avoid live animal markets not only relies on assumptions about who is travelling where, but also draws from and reproduces understandings
of risk associated with different kinds of production. Those forms which are the most unregulated or marginal, in terms of accepted capitalist modes of agricultural production, are associated with the greatest risk. Other forms of differentiation between territories include the distinction between countries with and without adequate surveillance (a fundamentally material distinction). Here, reporting from countries with adequate surveillance is included in the implementation of specific actions, while countries without are excluded from the system of surveillance. These differentiations, along with consequent interventions, guide distinctions between desirable and undesirable forms of circulation.

I propose that these distinctions are founded on the pertinence of the continued function of economic circulation. Throughout the documents, multiple sites of risk or vulnerability are constituted by the necessary interconnectedness of society. This illustrates the aim of allowing circulation to occur within global capitalism, while also pointing to distinctions between desirable versus undesirable circulation and transgression. In turn, the need for the ‘selective’ permeability of both micro and macro boundaries is generated. Although the reference to global capitalism is not explicit, the consistent concern regarding the possible economic impacts of pandemic represents the desire to maintain this system. This observation draws attention to the mode of biopolitical regulation which operates around a dynamic and self-regulated society that functions according to the norms of the market and where “security sought by biopolitics is mediated fundamentally by an economistic horizon of thought. Otherwise expressed, it is the discourse of the economy that determines what may be said to constitute a secure life” (Kiersey 2009:29).

Furthermore, Kiersey (2009) argues that contemporary biopolitics represents a global regime of knowledge/power, that is no longer directed only through nation states. He states that contemporary Foucauldian interpretations should “understand[s] the borders of the state to be incongruent with the reason of the market” thus invoking “a new type of global calculation” (p. 39). This form requires intervention by government only under exceptional circumstances, when insecurity results from “the fragility and contingency inherent in economic competition” (Kiersey 2009:40). I argue that the governing of boundaries within pandemic preparedness and response occurs, fundamentally, in service of the economy, and in the context of the ‘natural givens’ established from ‘new global calculations’. At the centre of these calculations is the governance of circulation.
With this in mind, there is some resignation regarding practices of regulation of between-spaces that have the objective of severing connections between different bodies and spaces. That is, the planning does not consistently or overtly advocate for the separation of these entities; rather, it focuses on the identification of “critical interdependencies”, and incorporates them as sites of potential risk into preparedness techniques and response systems. For instance, the circulation and transmission of viruses between animals and humans is represented as complicated by the obvious reliance on animals for the purpose of consumption and trade. In this light, surveillance as a mechanism of the regulation of boundaries functions as a means through which to maintain the interdependencies upon which society depends. Importantly, the purpose of surveillance mechanisms is not the prevention of interconnectedness, but the regulation of sites of contact, so that they are allowed to occur with the possibility of discretionary closure.

These two desires, the objective of preventing specific kinds of boundary transgression, and the aim of maintaining necessary circulation are competing in the sense that circulation is also required in order for contact between species, or bodies conceived of as different, to occur. Thus, inherent to the circulation necessary for economic functioning, is the production of innumerable, imprecise, risks that require control. In accordance with the ideas presented above, the boundary regulation examined within the documents occurs for the overall objective of security and continued circulation, rather than for the purpose of discipline and closure, although this may be the immediate function. It follows that boundary delineation and regulation are mechanisms of governing that which naturally occurs under global capitalism, transmission of infectious disease being one target of governance.

As discussed, intervention under exceptional conditions becomes integrated into the everyday, thus rendering the accommodation for possibilities of intervention a continuous endeavour. This intervention occurs not only at the global or national governmental level, but is administered through these bodies in the form of recommendations and guidance to a multiplicity of actors. These actors are drawn into the process of preparedness and, although we do not see the entirety of the network of actors invoked to act, we discern what is ‘made possible’ through this particular framing of disease. In the context of ‘life’ envisaged primarily through economic terms, the objective is that specific ‘interventions’ in the regulation of
pandemic will be efficient and effective and most importantly, interfere as little as possible with the economic functioning of society.

7.3 Global security and the utility of threat

The constitution of nation states and other social configurations (i.e., the ‘whole-of-society’) as ‘mutually’ vulnerable due to interconnectedness operates as a powerful legitimizing device for the requirement of ‘preparedness’. Indeed, the theme of mutual vulnerability is recurring, and is both explicit and implicit. I argue that this discursive structuring is important for the summoning of collective preparedness on multiple levels. Under this arrangement of shared vulnerability, a key technique of control is the standardization of procedure and response mechanisms targeting pandemic. The discourse of ‘commonality’ is dominant within the texts, and the logic of recommendations tends toward the objective of integration of possible outliers into a more generalized system of preparedness. In this respect, the ‘interoperability’ in national response operates as a means through which to manage interconnectedness. Furthermore, the development of robust generic surveillance systems represents the objective of incorporating variance, on the molecular and social levels. The focus on harmonizing preparedness plans indicates the integration of those states or bodies that deviate from the recommendations of the WHO. This is clearly illustrated in the WHO 1999 discussion of agricultural practices and ecological characteristics in China. In fact the integration of this ‘risky’ location into surveillance systems is named as a key development in preparedness strategies. Moreover, the increased attention to cooperation among animal and human health sectors also signifies an attempt to incorporate all relevant parties into systems of preparedness outlined by WHO in these plans.

In my analysis, I identify a normative component to preparedness discourse, which involves a ‘moral duty to prepare.’ That is, a key component of national responsibility is the moral duty to report and become integrated into the system of surveillance and preparedness in order to protect the whole under global capitalism. This is especially salient when considered in light of representations of interconnectedness and shared vulnerability central to global imagining. I suggest that this recourse to a discourse of morality in the global governing of pandemic is instrumental in the organization and involvement of states in pandemic planning. This moral discourse invokes various functions which comprise a general duty to work towards
and invest in preparedness. In his analysis of security and HIV/AIDS, Elbe (2005) calls attention to the normalizing effects of global biopolitical strategies. In my work, the subject of normalizing practices is no longer the population as an aggregate of individuals, but the nation state in its governing of populations, akin to Butler’s (2006) characterization of a subject “that has been instated at the national level” (p. 41). Unlike Butler’s account of the US as a subject that denies its interdependencies and vulnerability in the post 9/11 political environment, the national subject normalized within WHO pandemic planning documents is constituted by its lack of wholeness and constant exposure to the viral state of other national subjects. Ultimately, the normalizing practices discussed in this research, are made possible by the projected disruption of ‘normal circumstances’ in which concerns about economic interdependence and collapse are prominent. The biological threat of influenza reveals the possible fragility of basic services and weaknesses in infrastructure. This is extensive in the later documents which attempt to account for predicted failures in the face of pandemic.

These representations of mutual vulnerability and common, coordinated responses co-exist with a more subtle recognition of ‘difference’ in terms of the territorial effects and experiences of pandemic. There are many ways that these variations are presented, such as through the re-mapping of geopolitical boundaries according to the recommendation of response strategies for ‘affected’ and ‘unaffected’ countries and ‘those with trade or travel links with affected countries’, or the distinction between countries with or without ‘adequate surveillance’. Similarly, the tension between the normal and exceptional corresponds with the apparent opposition between the general and particular in preparedness. These tensions relate to the underlying objective of remaining open to the uncertainty and potential inherent in emergence and pandemic. Attention to ‘difference’ transpires in part through the delineation and regulation of vulnerability and risk according to various corporeal and territorial boundaries. One component of this regulation is the somewhat elusive differentiation between states or locations with different capacities, which subtly acknowledges that there are limits to this overall purpose of integration.

Furthermore, the issue of particular vulnerabilities (as a marker of difference) is framed as a local circumstance, thus representing variation dependent on context that would presumably require a corresponding response in pandemic planning. This framing presents an understanding that ‘vulnerability’ and ‘equity’ exist independently of the global economic context. In fact, it is
striking that, given pandemic planning as a global endeavour, issues of inequality are presented as so particular to context, a framing that obscures broader processes and structures implicated in the supposed ‘vulnerability’ of groups. The lack of consideration of the economic and political relations framing differences in capacity to prepare and respond both normalizes these differences, and operates to absolve international bodies and wealthy states from responsibility.

This naturalization of material and economic inequality, both within and between states, is coupled with a strong preference for altruism or aid to ‘low-resource’ countries as a means of addressing variations in access to technology. This corresponds with Loyd’s (2009) argument that ‘humanitarian intervention’ is a powerful tool in the naturalization of structural violence, and deserves consideration in terms of its implications for the threshold between life and death at the global level. From the perspective of the normalization of preparedness techniques discussed above, the discretionary context of increasing material capacities, coupled with the appeal to the ‘benevolence’ of states, reproduces unequal geopolitical relations as the natural order. Due to the compelling objective of integration in terms of the different preparedness mechanisms of states, this essentially constructs a political scenario in which states and international bodies have ‘done their part’ in enhancing preparedness, the ‘making live’ dimension of biopolitics, and thus the ‘letting die’ becomes naturalized as due to some inherent flaw or weakness in the population or the state that governs that population.

In their work on WHO’s global strategy on non-communicable disease, Brown and Bell (2008) contend that the integrative logic of such global health efforts propagates an “implicitly western vision of global health…[with a] ‘one size fits all’ solution” (p. 1574). In my research on pandemic planning, this generic standardization of response is clearly present; however, it coexists with another strategy that aims at remaining open to the particularities of context. This strategy is representative of the crucial mechanisms of flexibility and contingency in the governing of the aleatory or uncertain, that is intrinsic to emerging infectious disease. Contingency, in this context, mediates relations between WHO’s objective of standardized responses and the recognition of specificity of context. Furthermore, the constitution of countries as mutually vulnerable directs attention toward the biological entity and, in this way, the responsibility for difference in severity of epidemic or resources to prepare is transferred onto the virus. In this regard, problems of economic inequality and power relations are obscured by a technical problematisation and response, in which the issue is the uneven distribution of
technology to deal with biological risk. Furthermore, the complete omission of underlying factors or context structuring difference further legitimizes framing actions in terms of ‘who is prepared’ rather than addressing material differences.

The integrative logic that dominates, however, does not necessarily result in the conformation of states to these norms. In fact, Brown and Bell (2008) demonstrate that countries were by no means passive in WHO’s attempts at integration, and that numerous political responses on the part of ‘developing’ nations resulted in the transformation of the original form and intention of the global strategy. Similarly, Hinchcliffe (2009) contends that the WHO may be the “global authority in terms of expertise, but [it is] also highly susceptible to state criticism and reprisal should it go too far with raising pandemic panic” (p. 10). Thus, while WHO as an authoritative body in global health holds numerous powers with respect to ‘designating pandemic’ and legally compelling states’ participation in surveillance and reporting, this power is limited in some respects. This is seen, for example, in the hesitancy of the organization to make explicit demands of some countries to aid others. In this way, the WHO negotiates a balance between the innumerable ‘recommendations’ outlined in the documents and the possible declaration of authority made possible through the conception of the IHR in 2005.

The general process of preparedness requires the collection and ordering of information on existing formations and procedures in society, in addition to the identification of information gaps. Accordingly, there is the impression that as countries and other bodies continue to prepare, there will be an inevitable and ongoing, identification of weaknesses in existing infrastructure that requires attention – preparedness is never a complete exercise and ‘complacency’ is a dangerous state. In this respect, the endowment of the pandemic event with a certain utility is largely enabled through the process of ongoing knowledge production regarding the virus and pandemic. Another key example of incorporation is the integration of pandemic influenza into an international legal framework. The International Health Regulations (2005) legally encode international compliance with infectious disease directives. These regulations support a generalized preparedness within everyday procedure and require by law the reporting of all cases of human influenza caused by a new sub-type. The legal codification of preparedness (surveillance, data collection, reporting, procedure and so on) also indicates perhaps the ultimate incorporation into law.
This analysis is also relevant to the theoretical discussion of Foucauldian-based understandings of ‘race’ in the context of a global biopolitics. As covered in my theoretical framework, the concept of race from the perspective of biopolitics introduces key questions with respect to the securing of life by the nation state through decision-making around enhancing life versus “disallowing it to the point of death” (Foucault 1980a:138). While the general objective of the regulatory power of biopolitics is the production of a healthy social body, the concept of race addresses the indirect mechanisms that effect death or suffering through increasing risk or political exclusion (Foucault 2003). Throughout this work, I have analyzed and attempted to shed light on, the underlying assumptions and discursive construction of a particular kind of global biopolitics. That is, the documents assume and reproduce a specific idea of the configuration of the body politic at the global level. Similar to the conceptualization of threat as internal to the social body and its contribution to understandings of ‘race’ in contemporary biopolitical contexts, earlier considerations of race in relation to an internal/external binary are seemingly inadequate for understanding the workings of race at the global level. This is, in part, due to the proposition that the normalizing techniques, discussed in my work, operate according to an integrative logic. Foucault (2007) asserts that:

[T]he operation of normalization consists in establishing an interplay between these different distributions of normality and [in] acting to bring the most unfavourable in line with the more favourable. So we have here something that starts from the normal and makes use of certain distributions considered to be, if you like, more normal than the others, or at any rate more favorable than the others. These distributions will serve as the norm. The norm is an interplay of differential normalities. (P. 63)

In the context of my research, we see that the most favourable is the arrangement of standardized mechanisms of preparedness. There is recognition that there will be variation in preparedness and response across nation states and the objective of planning is to bring those distributions of normality ‘in line’ with the more favourable forms.

I am interpreting the concept of ‘race’ in relation to national sovereignty at the global level. In light of this global configuration of preparedness, the securing of society is less concerned with the sovereign state as it is with the role of the nation within a global context. A significant notion discussed in my theoretical framework is that of the strengthening of the sovereign state through the regulation and expulsion of an internal enemy. This is not what is invoked in my analysis of global infectious disease governance. Rather, and importantly, the configuration that requires protection is the global interconnectedness of states that are cast in
terms of a mutual or common vulnerability. In this respect, the state that fails or refuses to conform to the normalization of preparedness techniques, outlined by WHO, is cast as deviant in some form. The techniques of normalization occur within the broad imperative to enable and invoke states to integrate themselves into systems of preparedness. That is, through its deviation from the common standards of preparedness the ‘other’ state is that which does not have ‘preparedness’ as its central concern or objective.

Again, what is strengthened through the regulation of ‘race’ thus conceived is not the sovereign state, but the global system of preparedness, discursively constructed through its shared vulnerability. The construction of an ideal global community of ‘sharing’ through communication, surveillance and actual biological matter (e.g., viral strains) has also been clearly resisted. This is illustrated by the Indonesian contestation of the notion of membership founded on sharing, through the state’s highlighting of inequality in access to vaccine within the global economic system. This resistance brings into sharp relief the political and economic contexts that frame inequalities and contest representations that naturalize difference. It also challenges the idea of commonness inherent in representations of ‘mutual vulnerability’. Within this conceptualization, the ‘society’ that requires defending extends beyond the nation state to a broader ‘global community’.

This discussion connects to Foucault’s power/knowledge nexus through which power enables certain understandings to be produced and knowable, and discourse frames and constructs what is understood as ‘reality’ in specific ways (Foucault 1991; Foucault 1980b). In this way, power and knowledge always co-exist: “Disciplines of knowledge always divide the human population into distinct categories that are one of the prime instruments of power” (Mansfield 2000: 59). This form of social control or regulation, rather than functioning solely as a repressive and exclusive force, is inclusive and normalizing (Foucault 1980b). The process of normalization is central to numerous interpretations of Foucault’s work, where the knowledge/power that frames the ‘acceptable’ behaviour of its subjects constructs social norms according to which people are expected to conform. While this can have exclusionary consequences for certain members or groups in society, it is important to consider that this is generally not the ‘purpose’ of knowledge/power which seeks inclusion through conformation and repair. Importantly, Foucault understood this configuration to be historically contingent,
and, thus, the constitutive effects of power require examination within the particular epochs that they take form (Foucault 2007).

My interpretation of ‘race’ from a biopolitical perspective, involves the exercise of identifying threat through the constant exercise of preparedness, which states are invoked to engage in as their moral duty within a broader imagined global community. In my analysis, the operation of biopolitics on the global level corresponds with the understanding that there is no imagined ‘outside’ in relation to the global body politic, which is constituted by the powerful discourse of mutual vulnerability. The body politic here is a globalized configuration within which all states are bound by a collective and normative duty to prepare and respond. This duty is further upheld and maintained by the responsibility to report disease outbreaks in other countries. What is strengthened in this regard is not the sovereign state, but the global system and nation states within this configuration. The purpose of integration as a post-colonial objective is also significant to this discussion. Attempts at integration are implicated in the perpetuation of violence, not through the explicit conversion or exclusion of ‘other’ knowledges, but via the indirect expulsion of epistemologies that do not correspond or conform to the conditions outlined within preparedness discourse. In effect, ‘other’ knowledges and ways of being are marginalized, derealized or transformed through this process of integration.

The early attention to China as a particular source of pandemic emergence, exemplifies attempts at adaptation to those characteristics that are considered risky – agricultural practices and ecological conditions – through the integration and normalization of this state into global surveillance systems and a global community. Furthermore, the preparedness process has itself adapted to the particularities of China as they are assumed and represented within the texts through the developing focus on multiple possibilities for emergence and the adjustment of surveillance and other control mechanisms. In this context, the process of normalization differs from conversion. While it does hold states to specific norms, it also adjusts norms according to an ongoing search for variation or difference, and this occurs most obviously through the mechanism of flexibility. At the same time, there are likely limits to this integration. This reflection raises important questions about the effect of deviance experienced by these states, not least of which would likely have implications for economic prospects of the nation, and consequently the well-being of its subjects.
Finally, in this section I return to the notion that pandemic acquires a more generalized utility through its incorporation into broader structures that are geared towards addressing emergent threats. I argue that the planning that evolves throughout the documents represents a particular empirical example of the objective of integration of pandemic into the everyday, where the purpose is that the exceptional or ‘crisis’ event of pandemic becomes incorporated into the very structures of society. Whether or not this is accomplished, it is one component of the apparent aim and logic of preparedness in pursuit of security. The aim of profiting from ‘crisis’ can be understood in the contemporary context of global capitalism, as many of the emerging diseases are undoubtedly by-products of this system and indicate the contradictions, unsustainability, degeneration and failure of the market system. While the logic of integration structures the problematisation of pandemic and procedures aimed at preparedness this rationale necessitates a process that is never complete by virtue of the nature of the world: “A steady state of biosecurity – however much strived for – can never be reached, coordination let alone complete coincidence between the various parts of government (in the broadest sense) being both an extremely expensive and extremely rare phenomenon” (Hinchcliffe and Bingham 2008:1548). Thus, the objective of integration in addressing the phenomenon of emergence is an infinite process, given the target of emergence as *life itself* (see Rose 2007).

This broad discourse of crisis taps into social anxieties about interconnectedness and ‘progress’ in current contexts, and draws from a range of concerns about environmental degradation and population growth. Brown and Bell (2008) contend that, the “shadowy figure of degeneration...often lurks behind western ideas of progress” (p. 1574). In relation to the governing of crises, Cooper (2006) states that “‘catastrophe risk’ has come to designate a technological accident of biospheric proportions, operating simultaneously at the microscopic and pandemic level” (p. 119). In this context, the discourse of catastrophe re-orient decision-making toward future events by framing inherently speculative responses to an emerging crisis as pre-emption. According to my analysis, this speculation which is geared towards the future has significant implications for the economic utility of the virus and projections of disease, which is acquired through the integration of pandemic into existing economic arrangements.

At the same time, it is necessary to understand this discussion of the utility acquired by the future disruptive event of pandemic in light of the integration of pandemic into existing emergency frameworks in the later plans. The framing of pandemic planning and preparedness
in terms of its contribution to the general sustainability and resilience of nations, companies and communities relates to the broader global context characterized by economic austerity and necessary efficiencies, and legitimizes investments into preparedness through its capacity to attend to multiple threats. Furthermore, the move toward assimilating preparedness against various risks, speaks more broadly to the normalization of emergency preparedness in governing, and suggests the permeation of the discourse and technology of regulating ‘crisis’ in multiple realms. In relation to governing through ‘insecurity’, Lentzos and Rose (2009) propose that,

[a] logic of resilience, then, is not merely an attitude of preparedness; to be resilient is not quite to be under protection nor merely to have systems in place to deal with contingencies. Resilience implies a systematic, widespread, organizational, structural and personal strengthening of subjective and material arrangements so as to be better able to anticipate and tolerate disturbances in complex worlds without collapse, to withstand shocks, and to rebuild as necessary. (P. 243)

In line with this assertion, my research suggests that through this logic of resilience advanced in the later plans, pandemic preparedness is discursively connected to a wide range of other endeavors geared towards the strengthening of ‘subjective and material’ configurations. Along with the idea of strengthening, the arrangement of resilience also relates significantly to the condition of flexibility in order to address a broad array of crises within a generalized emergency. The integration of pandemic into existing emergency frameworks results in the functioning of pandemic preparedness for something more than its original purpose, that is, the more general strengthening of society.

7.4 Conclusion

Throughout this chapter, I have argued that potentiality as a defining feature of the influenza virus is discursively attached to both the known and the unknown, and simultaneously unites both benign and harmful viral circulation. The specific discursive techniques that position biological life as inherently emergent result in the expansion of possibilities for response in terms of time and targets of intervention. In this respect, vulnerability resides in the interconnections that constitute society; risk is not calculable in terms of probabilities, but necessitates an ongoing engagement with the possibility of exception. The planning undertaken by the WHO becomes implicated in the creation of these conditions of emergence. Moreover, it renders normal circumstances increasingly indistinct from pandemic.
In line with the objective of security as the governing of what is ‘natural’, I have argued that circulation is a significant target of regulation. It is understood as desirable and in service of the maintenance of social and economic functioning. However, circulation is also considered as risky due to the possible expansion of the virus through individual bodies, populations and territories. As such, the regulation of circulation requires an intricate balance between freedom and constraint in the regulation of a disease that has not yet materialized. I have explored these ideas in relation to the regulation of circulation and transgression of boundaries by the virus and other (mobile or connected) bodies. I have also examined the tensions inherent in the required conformation to standardized procedure and the simultaneous attention to the specificity of national and sub-national contexts.

Finally, I have argued that a primary goal of ‘preparedness’ is the incorporation of this potentially disruptive and unpredictable object into the fabric and functioning of society, to the extent that this phenomenon is endowed with a certain utility that, in this particular case, is connected to its integration into the global economic order. Through the project of preparedness, the natural features of the population become transformed into risky objects for intervention and profit, and pandemic acquires further utility through its possible contribution to the securing of society. The organizing principles of ‘flexibility’ and ‘contingency’ are central to the incorporation of the pandemic event into social structures, as they allow for the development of response mechanisms in the face of considerable uncertainty. These ideas have been examined in terms of their implications for theoretical understandings of global biopolitics and race and, consequently, for possibilities of exclusion within global systems of preparedness.
8 Conclusion
8.1 Findings and contributions

This thesis is an investigation of how the ‘molecular gaze’, as articulated in WHO pandemic influenza planning documents, discursively constructs the influenza virus in a specific way so as to ‘make possible’ a particular form of global health governance. Linking the molecular with the population and the ‘global,’ enables an approach to the governing of pandemic that has four key features. First, ‘biological potentiality’ is discursively attached to known and unknown viral candidates in terms of possibilities for the emergence of pandemic. This governance technique unites benign and harmful viral circulation, and positions biological life as inherently emergent. This construction of the virus enables and structures the response to pandemic by rendering normal and pandemic circumstances as increasingly indistinct, necessitating preparedness as a continuous engagement with emergence. An effect of this framing is the expansion of possibilities for intervention in terms of temporal and material targets. The relocation of pandemic within the present occurs through various techniques such as the ‘making visible’ of the virus through ongoing and intensive surveillance, and the integration of flexibility into both the conceptualization and regulation of pandemic.

A second key technique of governance is the demarcation and regulation of boundaries between entities that are understood as distinct. The delineation and regulation of borders between bodies, populations, and territories are largely positioned in response to representations of the influenza virus as prone to corporeal and territorial expansion. While circulation in this context is depicted as risky, there is a corresponding desire to maintain circulation that is in service of social and economic functioning. The sites of risk that require regulation are constituted by the necessary interconnectedness of society, and the governance of pandemic requires a careful balance of freedom and constraint in the regulation of a disease that has yet to materialize. This problematization of pandemic invokes a specific response, including a planning strategy that transcends boundaries. Generally, this configuration of governing operates according to the logic of freedom: directives at various governmental levels avoid closure or discipline through recourse to discretionary powers. The discretionary power of the WHO and national and sub-national authorities is significant: it allows for the flexibility to
remain open to the unknown features of pandemic and is necessitated by the ontological construction of the virus, and viral emergence, as *unpredictable*.

The third technique involves the discourse of morality within pandemic planning. This discourse invokes conformity to standardized procedure, and functions as a normalizing technique to integrate states into the process of preparedness. It draws from a particular conceptualization of an imagined ‘global community’ that is constituted by a shared vulnerability to pandemic influenza due to the interconnectedness of society. The subtle recognition of ‘difference,’ in terms of varying effects and experiences of pandemic, frames vulnerability as independent from the global context and obscures global economic and political relations from the understanding of inequality. This representation normalizes and naturalizes difference within and between states, and in this way absolves states and other parties from responsibility for global inequalities.

The fourth feature is related to how the development of pandemic preparedness over the last decade has paralleled a broader discourse on ‘crisis’ that taps into anxieties about interconnectedness and progress within contemporary contexts. The attempt to integrate threats into the structures of society to prevent economic and social malfunction, signified by concerns about ‘resilience’ and the ‘sustainability’ of preparedness, creates possibilities for considerable profit from future crises. Additionally, the virus and pandemic acquire a more general utility through the intended strengthening of society by pandemic preparedness. The WHO, through its involvement in the process of knowledge production about pandemic preparedness, is implicated in the very conditions that frame and enable the actualization of emergence.

A key objective of my research was to contribute to theoretical analyses of biopolitics through in-depth and intensive empirical engagement in tandem with theoretical reflection and deliberation. My research findings have a range of implications for theory and research about biopolitics and emerging infectious disease. Based on a characterization of emergence as inevitable, ‘technologies of risk’ are directed less at predicting the probability of some future occurrence of infection, and more at identifying and mitigating possible points of ‘failure’ in existing systems. Central to the conceptualization of failure is the condition of ‘interconnectedness,’ which frames understandings of a common vulnerability through possible flows of disease at these sites. In other words, risk is inherent to the interconnections that
constitute society. Similar to previous research, my findings indicate that a key feature of risk involves the repositioning of future events in the present, to allow for intervention. However, in contrast to many interpretations of risk as it relates to biopolitics, my findings suggest that risk is not calculable for the purpose of prevention, but instead necessitates an ongoing engagement with the future possibility of the exception, and what is coming into being.

The state of interconnectedness is largely accepted as inevitable, and this requires a response that involves increasing knowledge about interrelations, along with constant surveillance of these sites of risk. Within this context, the objective of security is to govern what is ‘natural’ in terms of social and economic functioning and circulation. The technology of preparedness, in the service of security, is engaged in an ongoing capacity building that allows for an appropriate response, while resilience takes the form of strengthening the critical infrastructure central to society. Importantly, this infrastructure is increasingly being imagined in terms of its flexibility in addressing a wide range of potential health threats, in contrast to its earlier, more restricted, focus on pandemic influenza. This finding is consistent with my theoretical discussion of preparedness as a technology that targets the uncertain. The interpretation of the operation of preparedness presented here extends the focus beyond the health of the population, to the vulnerabilities inherent in the intersections in the global context.

My research revealed that risk and preparedness are co-constituted with understandings and representations of ‘emergence’ along with corresponding imaginings of the global body politic. Unlike research about the securitization of disease, which suggests that there has been a restoration of national sovereignty under post-9/11 conditions, my work suggests that the configuration requiring strengthening is that of a global system of interconnectedness, which needs to be secured through ongoing adaptation to, and mitigation of, mutual vulnerability. Thus, the discursive construction of the biological features of the influenza virus enables and directs the biopolitical regulation of pandemic at the level of the global population. Furthermore, my research provides some insight into the workings of race and global biopolitics through the observation that pandemic planning fails to address the material and political contexts that frame inequality. In a global context, some bodies and states are constituted as more vulnerable than others to the effects of infectious disease – but the texts that I analyzed did not address why and how these differences emerged. In contrast, they assumed a homogeneous subject in relation to historical, economic, and political contexts. This failure to acknowledge the processes framing
material differences actually results in a form of violence, by disregarding and disavowing the
effects of global economic policy and historical processes.

My research can also be considered in terms of its interpretation of sovereignty within the
global system of pandemic influenza governance. In this regard, contingency is central to
decision-making; the texts I analyzed reinforced national sovereignty through the ongoing
invocation of discretionary power over various non-specified areas. Sovereignty is implicated in
the continuous decision-making about that which is emerging. Furthermore, the continued
hesitancy of the WHO to interfere with the sovereignty of the nation-state suggests that national
sovereignty is to some extent relevant within this global configuration. At the same time,
authority is constrained by the normalization of preparedness and the imperative to protect
‘others’ within the global system of international morality. Thus, WHO recommendations
provide national authorities with discretionary power, which is located within the limits of
freedom and constraint.

Weir and Mykhalovskiy (2010) argue that the changing landscape of the international
politics of health, notably the revision of the IHR in 2005, transformed the WHO “from an
interstate organization to a global one with powers in public health emergencies that exceed
sovereign power” (p. 139). While national sovereignty continues to be significant within this
arrangement, the WHO now retains suprasovereign power that is politically and legally
sanctioned. At the same time, the WHO’s authority is only maintained insofar as it is recognized
by the sovereign states implicated in systems of global surveillance and response. These
interpretations invite further reflection about how sovereignty is exercised in the context-specific
and discretionary form identified in my analysis. An in-depth examination of these operations or
practices of sovereignty would further inform the understandings of authority presented here.

8.2 Meditations, reflections, and future research directions

In this thesis, I have analyzed how discursive constructions of pandemic influenza might
be linked to broader contemporary questions of power and governance. As with any postmodern
interpretation of power and knowledge, this is not meant to be a complete framework outlining
the manifestation of power within pandemic preparedness governance. Rather, my findings
provide one interpretation of the discursive terrain presented throughout the texts. The WHO
texts reveal what is possible in terms of understandings of, and response to, pandemic; I sought
to unpack the emergent discourses in terms of their dependence on the historically contingent conditions that make these understandings possible. These pandemic planning documents are one small component of a much broader discursive terrain that lies outside my focus of analysis.

My research did not incorporate one central feature of biopolitics: the study of counter-narratives consistent with the Foucauldian understanding that power implies resistance, and that power does not precede resistance. In this respect, my critical discourse analysis offers one interpretation and understanding of pandemic influenza planning, which is part of a considerably broader configuration of global biopolitics. The idea that power is more expansive than the state and governing institutions is a crucial component of this theoretical framework; global biopolitics involves a range of actors and configurations that extend well beyond policy-makers and bodies with formal authority like the WHO. The examination of the perspectives of a broader array of actors on the issue of pandemic preparedness would elucidate understandings of counter-narratives that resist dominant representations of biosecurity issues presented in this research. Examining the roles played by civic or activist groups in relation to issues of biosecurity would further extend the conceptualization of governing, and provide greater complexity in terms of understandings of the problematization and response to pandemic.

My research was intended as a starting point for analyses of global infectious disease governance. I found an apparently consistent logic throughout the four texts that comprised my sample. It is not my intention to imply that these discourses or knowledge claims are always taken up; they do not necessarily represent any ‘true’ version of what is transpiring in pandemic planning at the global, regional, national, or sub-national levels, and they will become transformed once they adjoin or associate with other discourses and priorities. Thus, the discursive constructions described here can be resisted and inconsistent with other discourses inside and outside of the field of global emerging infectious disease research.

One way in which future research could build on my exemplar of global biopolitics is by examining the structuring of specific kinds of subjects through the discursive constructions within pandemic preparedness materials. For example, I briefly touched on the differential valuation of individuals within pharmaceutical and non-pharmaceutical recommendations, but further consideration of the types of subjectivities invoked as global citizens, ideal and otherwise, could enhance understandings of the effects of the discourses examined here. The
‘new’ global geopolitics constructed within the texts necessitates a certain kind of model state, and could also invoke specific kinds of ideal subjects. Future research could focus on the construction and the role of the subject through responses that target interconnectedness and mutual vulnerability. Research questions to guide this area of study might include: How do discourses of preparedness frame possibilities for the individual? What kinds of citizen-subjects are invoked through these discourses?

Another area for future research could be to investigate how the discursive constructions of the WHO texts can intensify differentiation and inequality. For example, the understandings of animal-human boundaries presented in the texts may marginalize or devalue specific knowledges and ways of being in relation to animals. This line of questioning would require a more targeted analysis at the local level to clarify how specific subjective relations to animals compare with the representations of animal-human interconnectedness in the regulation of emerging infectious disease. Additionally, a focus on the regulation of animal-human relations could clarify the theoretical conceptualization of ‘race’ as it relates to biopolitics in terms of the enhancement versus disallowing of life. This area of research is particularly pertinent at this time, given the widespread significance of animals and animal health in biosecurity regimes. A key question related to this area of research is: How do interconnections between animals and humans, portrayed in terms of the health of the population, inform understandings of difference and experiences of inequality at the global level?

Future research could also clarify the discursive construction of the problem of pandemic using a broader array of sources. The WHO guidelines that I examined emerged from multiple meetings with experts and advisory committees. The proceedings of these gatherings would be a prime source of data that would likely reveal a wide variety of discourses, including those of resistance, as the recommendations were drafted. An examination of policy documents at the regional, national, and sub-national levels could also shed light on how the discourses identified by my research are taken up, resisted, or circumvented at different scales of governance. For example, how does participation from certain world regions (e.g., WHO South-East Region) contribute to the framing of specific priorities or agendas within pandemic planning? How does the regulation and delineation of boundaries, described in terms of territory, frame the various ways that preparedness is taken up in planning materials at other levels of governance?
A final area that I touched on in my research but would benefit from further examination is the tendency toward a ‘generalized preparedness’ that has begun to link the significance of emerging infectious disease to other global health concerns. For example, the emergence of infectious disease has been discussed in relation to how climate change affects health. Climate change is also increasingly being framed in terms of its potential threat to national and international security, through its association with political instability and connection to food (in)security. Along these lines, an investigation of knowledge claims that are involved in the strengthening of society against a wide range of emerging threats to health could consider what these conceptualizations enable and disallow in terms of alternative understandings of what it means to strengthen society. Research questions to guide this work might include: How does ‘preparedness’ or ‘security’ operate within other areas relevant to global health and what are the implications for understanding the governing of infectious disease? How are these areas interconnected with other non-health arenas of global governance, such as military and anti-terrorist operations? How do these intersections affect the conceptualization and response to global health issues?

These conclusions and reflections invite further investigation of the effects made possible through the discursive constructions of pandemic influenza and the operation of these in other contexts. The Introduction chapter of my dissertation outlined a number of preliminary concerns regarding global pandemic planning and preparedness. Briefly, it is important to probe the effects of a form of governing that engages consistently in the future possibility of exception – pandemic influenza or any other ‘threat.’ More specifically, given the stark inequalities represented by global disease burdens, it is necessary to consider the forms of violence that are, directly and implicitly, imposed through global interventions such as preparedness, and to identify the related implications of diverting economic and other resources away from alternative global health agendas. In other words, what are the ethical implications of this commitment to anticipating and addressing future problems, when the present material circumstances that frame health are so dire for so many throughout the globe?

The increased possibility for speculative profit by a burgeoning pandemic industry enabled by preparedness practices has substantial consequences for social organization. This has startling ramifications for social justice approaches to health, especially when considered in light of the apparent alignment of various attempts to improve global health with conservative or
militaristic agendas. At the same time, these possibilities for preparedness relate to the persistent theme of maintaining existing global economic and political relations through preparedness strategies. The continued lack of engagement with (or even acknowledgment of) the economic and political processes shaping global health by governing institutions shapes the possibilities for the global politics of health. Significantly, this configuration coincides with the growing widespread questioning of the existing economic order as reproducing the interests of an increasingly diminutive segment of global society. My work problematized WHO representations of ‘mutual vulnerability,’ and future critical approaches to these may also generate possibilities for resistance and for transforming existing international political arrangements and their ontological and epistemological orientations.
References


Appendix A

Descriptive Summary of the Four WHO Planning Documents, 1999-2009

1. WHO 1999 – Influenza Pandemic Plan. The Role of WHO and Guidelines for National and Regional Planning

Audience as identified in text
The first document is intended for medical and public health leaders, in addition to national authorities and national pandemic planning committees (NPCCs) that have, at the time of writing, yet to be formed.

Stated purpose or application of this text
The purpose of the document is to assist medical and public health leaders better respond to future threats of pandemic influenza. The document “outlines the separate but complementary roles and responsibilities for the World Health Organization (WHO) and for national authorities when an influenza pandemic appears possible or actually occurs.” (5) The document references the H5N1 virus sub-type detected in Hong Kong SAR in 1997 and introduces the need for flexible contingency plans capable of responding efficiently to pandemic threat.

Table of Contents
- The role of the WHO
- The role of national health authorities and pandemic planning committees
- Issues on which national policy decisions will be needed
- Annex A: Influenza and its complications
- Annex B: Historical background
- Annex C: Origin of pandemics
- Annex D: Influenza vaccine
- Annex E: Anti-viral drugs
- Annex F: List of addresses – collaborating centres, national centres, influenza vaccine manufacturers
- Annex G: National pandemic plan

Description of Structure and Content
The main sections within this document elaborate on the role of the WHO, the role of national health authorities and National Pandemic Planning Committee (NPCC) and the issues on which
national policy decisions will be required. The remaining section of the document consists of the five Annexes which elaborate on the details relating to influenza, such as information on the origin of pandemics, and anti-viral drugs and vaccine.

The role of the WHO is elaborated on according to each pandemic phase. The role of the national health authorities and NPCCs is not divided by pandemic phase, but is elaborated upon in terms of actions to be taken. These actions briefly address a variety of topics, such as vaccine strategies, control strategies, surveillance systems, scientific and medical concerns and pharmaceutical supplies and logistics. In addition, recommendations for the composition of the NPCCs are provided at the beginning of this section.

The Issues on which national policy decisions will be needed section, includes a series of questions concerning the following topics: Management issues; Surveillance issues; Scientific and medical issues; Pharmaceutical supply and logistical issues; Legal-political-economic issues; and Communication issues.

Annexes A-E provide summaries of specific topics (along with references) that are evidently considered to be relevant to pandemic planning. This section comprises over one third of the entire document in terms of length. Annex F provides ten pages of addresses for contacts at the WHO, WHO Collaborating Centres, National Influenza Centres and Influenza Vaccine Manufacturers. Annex G provides a blank page for countries to attach their National Pandemic Plans.

Tools (e.g., tables, graphs, figures) presented in this text

Table 1: Preparedness Levels for Inter-Pandemic, Pandemic and Post-Pandemic Periods

This table provides information under the following headings: Phase, Characterized by, Explanation and Actions to be Taken by WHO (pp. 18-20)

Table 2: Virological/Epidemiological Scenarios

This table provides four different options for vaccination programs and details information under the following headings, according to option: Best Case – Advantages, Best Case – Disadvantages, Worst Case – Advantages, and Worst Case – Disadvantages (p. 25)

Best Case Scenario – “The new virus does not spread as much as in serious pandemics, or the illness caused overall is not very severe even in usually vulnerable groups”
Worst Case Scenario – “The new virus spreads rapidly and widely in the population, causing illness at least as severe as in most influenza A epidemics, with possibly extremely severe illness in some population groups”

Option 1: No special vaccination program

Option 2: Vaccinate selected groups most important for health care (~5-10% of the pop. vaccinated)

Option 3: Attempt to also vaccinate groups considered high medical risk (~25% of the pop. Vaccinated)

Option 4: Attempt to vaccinate all (>90% of the pop.)

Table 3: Influenza Landmarks in Humans in this Century

This table features 11 Influenza events in the century, and provides the year, colloquial name and subtype, source and impact for each event (p. 41).

The 1918 ‘Spanish Flu’ (H1N1), 1957 ‘Asian Flu’ (H2N2), 1968 ‘Hong Kong Flu’ (H3N2) and 1977 ‘Russian Flu’ (H1N1) are listed as the Pandemics of the century and there are 7 “incidents with limited spread in humans”. There are four incidents described throughout the 1990s, including the most recent 1997 ‘Chicken flu’ (H5N1) in the Hong Kong SAR and 1999 H9N2 in China and Hong Kong SAR.

Table 4: Timetable in months for Northern Hemisphere influenza vaccine production during the inter-pandemic period

This table (p. 48) provides a visual representation (in a graph-like format) of the various steps involved in vaccine production and distribution and the time period (by month) for which these steps take place throughout one year. The WHO recommends a vaccine strain during the second month of the year. Vaccine distribution is projected to take place between month 7 and 12, and vaccine use is designated to month 8 to 12.

Other texts (sources, bodies, figures) referred to in this text

This document contains some (minimal) reference to other materials. The Annex sections provide some academic references, from journals covering Epidemiology and Microbiology for example. As well, links to relevant WHO materials, such as FluNet and the Weekly Epidemiological Report are referenced in this section. Extensive address information is
provided in Annex F for WHO contacts, collaborating and research centres and influenza vaccine manufacturers.

There is an ‘Acknowledgements’ section following the three main sections (p. 33). This acknowledgement recognizes that the document was prepared for the WHO in collaboration with the European Scientific Working Group on Influenza (ESWI) by a number of individuals with these affiliations. In addition, the document was ‘elaborated’ with a number of bodies, with the WHO’s four collaborating centres. The bodies include the: National Institute for Medical Research, London UK; National Institute of Infectious Diseases, Tokyo Japan; Influenza Branch Centres for Disease Control and Prevention, Georgia USA; National Institute for Standards and Control, Hertfordshire UK; and Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville USA.

2. WHO 2005 – WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics

Audience as identified in text
The primary audience for this text is public health officials responsible for pandemic preparedness and response. The Executive summary is designed for senior policy makers and other government officials who may not have a public health background.

Stated purpose or application of this text
The document introduces changes in pandemic phases from the previous 1999 plan. Some countries have asked for more detailed recommendations regarding objectives, measures, etc. for planning. In 2004, WHO held a consultation and this document is based on the results of this meeting, it focuses attention on early phases and rapid intervention that may contain or delay the virus. (p. 4)

Table of Contents
- Executive Summary
- Introduction
- Overview of new pandemic phases
- Overarching goals, objectives and actions for each phase
- Annex 1: Recommendations for nonpharmaceutical public health interventions
- Annex 2: List of participants
- Bibliography

Description of Structure and Content

The Introduction and the Overview of new pandemic phases are the only two written sections in this document, while the remaining sections are presented in chart format or lists. The introduction includes a brief discussion of reasons for revising the WHO 1999 plan and details the major changes to this plan. In contrast with the previous plan, this document: addresses human health risks posed by animal infection; uses “a risk assessment to account for multiple factors as the basis for moving between phases”; and allows for the downscaling of phases according to reduced public health risk (p. 4). The document states an increased focus on the early pandemic phases (compared with the previous plan), in order to contain or delay the spread of disease through rapid intervention. As well, the document provides specific objectives and actions for WHO and national authorities and includes harmonization with the International Health Regulations which are in the process of revision. The overview of new pandemic phases provides a rationale for these phases, along with examples of possible epidemiological examples of the pandemic alert and pandemic phases, e.g., unlinked human cases with exposure to animal sources of infection.

Reasons for the revision of the plan are discussed in the introduction. These include the following developments that occurred since 1999: endemic animal infection with H5N1 and repeated transmission to humans causing human disease; advances in the understanding of the evolutionary biology of influenza viruses; new techniques for laboratory diagnosis and vaccine development; improved antivirals; IHR revisions; the successful management of SARS in 2003; a new appreciation for infectious diseases as a threat to global and national security; and requests by countries for more detailed objectives and action measures (p. 4).

Pages 11-41 consists of a Table (2) that states the Overarching goals, objectives and actions for each phase for WHO and national authorities. These directives are hard to make sense of in a ‘data analysis’ way as they are extremely dense and list of somewhat vague, de-contextualized actions for each body. Under National Actions, the directives are divided into a number of different categories depending on the pandemic phase. These categories include: All Countries, Affected Countries, Unaffected Countries, Affected Countries and Countries with
close or extensive travel/trade links with affected countries, •Countries with Vaccine Production Capacity, •Countries with Case(s), •Countries without Cases

Annex 1 provides recommendations for nonpharmaceutical public health measures at the national and international level. These recommendations again distinguish between affected and unaffected countries and measures address the pandemic alert and pandemic periods.

**Tools (e.g., tables, graphs, figures) presented in this text**

Table 1: Comparison of phases published by WHO in 1999 and those in the present document

This table contrasts the definitions of the 1999 pandemic phases with the updated ones. Where the 1999 Interpandemic phase 0 does not account for animal infection, but corresponds with interpandemic phase 1 and 2 (i.e., there is no phase 0 in the updated plan) which now account for an influenza subtype circulating in animals that poses only a risk of human disease. Thus, where the previous plan’s pandemic phases account for only human infection, the new plan’s phases include animal infection as contributing to human risk. Finally, there is a new component of the phases depicted by this table under the heading Additional National Subdivisions of New Phases. This subdivision distinguishes between risk levels (and later, recommended action/intervention) of those countries affected or that have extensive travel or trade links with affected countries and those countries that are not affected (p. 7).

Table 2: Overarching goals, objectives and actions for WHO and national authorities, by phase

This table outlines the Overarching goals, WHO objectives, National objectives, WHO actions, National actions for each pandemic phase. These goals, objectives and actions are divided into the following five categories: Planning and coordination; Situation monitoring and assessment; Prevention and containment; Health system response; and Communications. In Phase 2 (Interpandemic), the distinction between Affected and Unaffected countries is introduced within the National Actions section, this section continues with various sub-categories that indicate the experience/extent of disease within the country (as indicated above). In Phase 5 (Pandemic alert), the national actions begin to be sub-divided by additional categories that indicate hypothetical developments in response mechanisms and where the country is in the pandemic ‘wave’. These include: •If pandemic vaccine has already been developed, •Subsided (end of pandemic or between waves), •As soon as possible (regardless of extent of disease activity) (pp. 11-41).
Other texts (sources, bodies, figures) referred to in this text

Acknowledgements are at the end of the text (compared with the WHO3 document). There is one reference to a WHO influenza source website throughout the entire text (http://www.who.int/csr/disease/influenza/inforesources/en/) and one reference to a consultation document produced by WHO on priority public health interventions in the nonpharmaceutical intervention recommendation Annex. Five WHO guideline documents are identified in the Bibliography:


- **WHO outbreak communications guidelines.** Singapore, September 2004.

- Selected WHO guidelines on influenza H5N1.


Audience as identified in text

The audience is not specified in this text (the document focuses considerably on acknowledging contributors), but does state that the “document should be used to inform and harmonize national and international preparedness and response before, during and after an influenza pandemic.” (9)
Stated purpose or application of this text
This document significantly updates and replaces 2005 publication. Instructions on ‘how to use this guidance’ state that it “serves as the core strategic document in a suite of materials. It is supported by a complement of pandemic preparedness materials and tools.” (p. 9) The information and recommendations in this document are drawn from consultation with international experts and is the “product of expert opinion” (3). These consultations included the examination of a variety of materials including: modeling studies; lessons learned from SARS; animal and human influenza responses; and “consolidation of recommendations in existing WHO guidance” (3)

The revision process occurred in the context of three working group/consultation meetings in November 2007, March 2008 and May 2008. A public review through the website occurred over a 4 week period with over 600 comments from Member States, health related organizations, universities, the private sector and individuals. Working group members and WHO consulting participants were required to complete a declaration of interest and no reported conflict of interest was considered significant enough to warrant their exclusion from the process. See notes on commenting process on page 57 and see page 58 for Overview of revision process. New revisions are expected to be available in 2014 or sooner depending on possibility of significant developments in pandemic preparedness and response planning.

Table of Contents
- Foreword
- Acknowledgements
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- Introduction
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- Roles and Responsibilities in Preparedness and Response
  National preparedness and response as a whole-of-society responsibility
  WHO
- The WHO Pandemic Phases
- Recommended Actions Before, During And After A Pandemic
- Annex 1 – Planning Assumptions
  Modes of Transmission
  Incubation period and infectiousness of pandemic influenza
Symptom development and clinical attack rate
Dynamics of the pandemic and its impact

Annex 2 – Revision Process

Description of Structure and Content
This guidance is revised from the previous 2005 document and provides the following reasons for requiring such changes:

- Strengthened global capacity and partnerships between the animal and human health sectors due to avian and pandemic influenza initiatives
- Enhanced practical experience managing H5N1 including preparedness and response exercises in numerous countries
- “[I]ncreased understanding of past pandemics, strengthened outbreak communications, greater insight into disease spread and approaches to control, and development of increasingly sophisticated statistical modeling techniques.”
- The adoption on the revised IHR and the corresponding in increased awareness of global health security
- The new reality of antiviral drug stockpiles along with other supplies
- New approaches to vaccine development under the Global Vaccine Action Plan (p. 8)

The major changes includes minor revisions to the pandemic phases, application of ethical principles to planning, integration of pandemic preparedness into existing emergency frameworks, incorporation of the whole of society approach, harmonization of measures with the IHR and evidence-base planning assumptions.

The Background section includes a brief discussion of: past influenza pandemics; the expected impacts of a future pandemic; the development of pandemic influenza viruses at the genetic level; the H5N1 influenza virus and the impact of these outbreaks; and the importance of ethical principles in pandemic preparedness and integrating pandemic preparedness into general emergency preparedness.

The Roles and Responsibilities in Preparedness and Response details the significance of the whole-of-society approach to national preparedness, elaborating on the necessary participation of numerous sectors within society. The role of the WHO section is preceded by the statement that “WHO has been mandated by a series of World Health Assembly resolutions to provide Member States with guidance and technical support regarding influenza.” (p. 18) In addition, the roles and responsibilities of the both the WHO and States are discussed in terms of their legal obligation under the newly revised IHR (2005). The document states that the WHO is
also responsible for the designation of the global pandemic phase and the decision to switch from seasonal to pandemic vaccine production. The roles of both States and the WHO are elaborated on in the operation of a new ‘Rapid Containment’ technique. Finally, the WHO is responsible, with assistance from governments, for assessing the level of severity on health in the event of a pandemic.

*The WHO Pandemic Phases* have undergone minor changes since the 2005 revisions. According to the document: “[t]he grouping and description of pandemic phases have been revised to make them easier to understand, more precise, and based upon observable phenomena.” (p. 24) The document emphasizes that the new phases are not intended as predictions of what will occur during an actual pandemic and will not necessarily proceed in a linear progression according to numbers.

The goal of the *Recommended Actions Before, During and After a Pandemic* is “to provide leadership and coordination across sectors.” (p. 28) These actions are represented in *Table 5* which is a chart (pp. 31-48) that details the WHO and National Actions according to phase for each of the following components: Planning and Coordination; Situation Monitoring and Assessment; Communications; Reducing the Spread of Disease; and Continuity of Health Care Provision. The directives are very brief and general/de-contextualized; however, these actions have been modified since the previous plan and are presented in a more accessible/‘user-friendly’ format.

*Annex 1* provides an elaboration of planning assumptions relevant to the epidemiology of influenza. The annex is intended to provide a framework for decision-making by national authorities and is “based on information known at the time of publication about seasonal influenza, avian influenza, and past influenza pandemics.” (p. 49) The document states that these assumptions should not be considered predictions regarding the next pandemic given the significant variation in features of past pandemics. The assumptions are divided according to the following themes: Modes of transmission; Incubation period and infectiousness of pandemic; Symptom development and clinical attack rate; and Dynamics of the pandemic and its impact. For each topic, the annex provides a list of suggested assumptions, implications, and scientific basis and selected references supporting the assumptions.

*Annex 2* describes the revision process and the working group meetings involved in this process. The working group members completed declaration of interest forms and the guidance was made available to the public for comment over a period of a month and a half.
Tools (e.g., tables, graphs, figures) presented in this text

The document relies considerably on more ‘user-friendly’ features, such as highlighting specific quotes through incorporating these at the beginning of specific sections of the text, and including diagrams, charts, maps and tables to convey information. In addition, key information has been placed in shaded boxes, presumably to stress its significance. This information includes: criteria for notification of public health events under the IHR (2005); potential health indicators for assessing severity of pandemic; uses/characteristics of the 2009 pandemic phases; and core elements of pandemic influenza communication.

Figure 1: The WHO Guidance Package for Pandemic Influenza Preparedness and Response

This diagram is incorporated into the ‘How to use this Guidance’ section of the text. It consists of the core document (i.e., this particular pandemic preparedness and response document), which is surrounded by the following five Thematic Areas of Supporting Documents: Planning and coordination; Situation monitoring and assessment; Communications; Reducing the spread of disease; and Continuity of health care provision. In addition, there are a number of TOOLS listed to provide further guidance with preparedness and response: Self-Assessment Checklist for Preparedness; Planning and Executing a Preparedness Exercise; Training CD-ROMS for Trainers; Rapid Containment Training Package; Handbook for the Public; and Sample Preparedness Plans (p. 9)

Table 1: Pandemic Phase Descriptions

This table describes the WHO pandemic phases, which has been modified slightly from the previous 2005 plan. The descriptions outline the particulars of infection for each phase – e.g., Phase 1 is characterized by the understanding that no animal virus circulating in animals has been known to cause human infection (p. 11).

Table 2: Characteristics of the Three Pandemics of the 20th Century

This table provides a summary of some features of the 1918-1919 ‘Spanish Flu’, the 1957-1958 ‘Asian Flu’ and the 1968-1969 ‘Hong Kong Flu’. For each pandemic, the following characteristics are provided:

- Areas of Emergence
- Influenza A Virus Subtype
- Estimated Reproductive Number
- Estimated Case Fatality Rate
- Estimated Attributable Excess Mortality Worldwide
- Age Groups Most Affected (Simulated Attack Rates)
- GDP Loss (Percentage Change) (p. 13)

**Figure 2: Whole of Society Approach to Pandemic Preparedness**

This diagram illustrates that planning and coordination includes the Health Sector, Other Sectors, and Individuals/Families/Communities, and that communication is required between these three components of society. The general role of each sector is provided in bullet-form. The Health Sector is to “•Provide leadership and guidance; •Take actions to reduce health consequences; •Raise awareness about risk and potential health consequences”. Other Sectors are to “•Develop guidance and implement actions needed to minimize the adverse affects of a pandemic on non-health sectors” and Individuals/Families/Communities are to “•Take actions need to minimize the adverse effects of a pandemic on families and individuals” (p. 16)

**Figure 3: Pandemic Influenza Phases (2009)**

This figure illustrates the pandemic phases as they evolve over time, where the phases progress over time. These are grouped into Phases 1-3, Phase 4, Phases 5-6/Pandemic, Post Peak, and Post Pandemic periods (p. 24). The WHO pandemic phases have been changed slightly since the 2005 plan. These modifications include grouping phases 1-3 and 5-6 so that they include shared action points. Phases 1-3 action points aim to strengthen preparedness and response capacities. Phase 4 is geared towards containment objectives and Phases 5-6 measures move toward reducing the impact of the pandemic. A final change is the distinction between the Post-Peak and Post-Pandemic periods, where the Post-Peak period was not included in the 2005 pandemic phases.

**Figure 4: WHO Regions**

This figure is a map of the world, colour-coded according to the six WHO regions. These are the: WHO Africa Region; WHO Region for Americas; WHO East Mediterranean Region; WHO European Region; WHO South-East Region; and WHO Western Pacific Region (p. 25).

**Table 3: WHO Pandemic Phase Descriptions and Main Actions by Phase**

This table lists the pandemic phases 1-6, post-peak period, possible new wave, and post-pandemic period. For each of these phases, the chart provides information on the estimated
probability of pandemic (ranging from uncertain-medium-high-certain-pandemic in progress), a
description of the phase, main action in affected countries and main actions in not-yet-affected
countries (p. 27).

Table 4: Summary Table of Recommended Actions
This table provides brief summaries of recommended actions, outlined by phase, that address the
five preparedness components:
- Planning and Coordination
- Situation Monitoring and Assessment
- Communications
- Reducing the Spread of Disease
- Continuity of Health Care Provision (p. 30)

Table 5: Actions for WHO and National Authorities, By Phase
This table provides a breakdown of the WHO and National Actions according to pandemic
phases 1-3, phase 4, phases 5-6/Pandemic, post peak, and post pandemic periods. Each period is
preceded by the general aim of the actions and the actions are divided according to the five
preparedness components (see above Table 4) (p. 31-48).

Other texts (sources, bodies, figures) referred to in this text
There are numerous references to other texts and websites throughout the document, including
WHO materials and other external sources. Reference to specific IHR (2005) articles and WHA
resolutions are also used to support certain statements/directives. The FAO and OIE are also
referred to in this organization.

Examples of references throughout the document
“Global pandemic influenza action plan to increase vaccine supply” World Health Organization
2006

“WHO Interim Protocol: Rapid operations to contain the initial emergence of pandemic
influenza” World Health Organization 2007

“Avian influenza: assessing the pandemic threat” WHO, 2005

“Pandemics of the 20th century” European Centre for Disease Prevention and Control

“Global Macroeconomic Consequences of Pandemic Influenza” Lowy Institute for International
Policy, Analysis paper 2006, McKibbin et al.

“Questions and Answers on Health and Human Rights” Health and Human Rights Publication Series Issue No. 1 July 2002 WHO

“Ethical considerations in developing a public health response to pandemic influenza” WHO 2007

“Whole of Society Pandemic Readiness” WHO 2009

“International Health Regulations (2005)” WHO

“Infectious disease surveillance and the International Health Regulations” Chapter 2 in Infectious Disease Surveillance 2007, Plotkin et al.

“WHO Collaborating Centres and Reference Laboratories involved in annual influenza vaccine composition recommendations” WHO 2009

“Recommendations for Influenza vaccines” WHO 2008

“WHO Global Surveillance for Pandemic Influenza” WHO 2009

“WHO – its people and offices” WHO 2009


Audience as identified in text

According to the document, the intended audience is the “Whole-of-Society”, beyond the health care sector. This is a multisectoral document aimed at sectors and services within national boundaries, and seems to be geared towards urging central governments to plan for a comprehensive approach to planning that takes place across all governmental levels, and in all sectors of society. The aim of the text is to “support integrated planning and preparations for pandemic influenza across all sectors of society, including public and private sector organizations and essential services.” (p. 5)

Stated purpose or application of this text

This document complements WHO’s April 2009 document (WHO 2009a) and is produced by
the non-health sector preparedness taskforce. The guidance in the document is not evidence-based but “[t]he recommendations were developed through consideration and discussion of expert opinion.” (3) Each of the taskforce members and consultation participants responsible for producing the document signed a declaration of interest, and while some acknowledged a conflict of interest, it was determined that these were not significant enough to exclude influence decision-making and recommendations. As well, the document clarifies that the guidance was developed before the pandemic (H1N1) outbreak 2009 and thus “[s]ome information and recommendations mentioned in the guidance may not be relevant to the current situation or to the actual needs and priorities of countries.” (3) The general aim of the document is to help member states include all sectors of society in national preparedness plans.

**Table of Contents**

- Aim
- Rationale
- The Readiness Framework
- Business Continuity Management
- Critical Interdependencies
- Government Leadership Role
- The Roles Of Other Agencies and Organizations
- Ethical and Legal Aspects
- Annex A: Whole-of-Society Pandemic Readiness Checklist for Central Governments
- Annex B: Pandemic Influenza Business Continuity Management Checklist for Businesses and Government Organizations

**Description of Structure and Content**

This document is the shortest of the four documents and is probably the most ‘accessible’ (in terms of density of material, etc) in terms of content. A main feature of the document is the presentation of the Readiness Framework, which stresses the interdependence of all sectors of society and incorporates the following principles/components: a whole-of-society approach; preparedness at all levels; attention to critical interdependencies; a scenario-based response; and respect for legal and ethical norms. The other key feature is the focus on Business Continuity Management.
Tools (e.g., tables, graphs, figures) presented in this text

The diagram of The Readiness Framework (p. 6) emphasizes the three sectors of Civil Society, Business and Government at different levels (sub-national, local government and community) which all aim for Readiness, Response and Recovery (disaster management continuum). Within this diagram, there are nine key essential services identified: Health; Defense; Law & Order; Finance; Transport; Telecom; Energy; Food; and Water. Annex A and Annex B provide checklists for central governments and business and government organizations.

Other texts (sources, bodies, figures) referred to in this text

Guidance document – “Ethical considerations in developing a public health response to pandemic influenza”
**Appendix B**

*Table 1: WHO 1999 Pandemic Phases*

<table>
<thead>
<tr>
<th>PHASE</th>
<th>PERIOD</th>
<th>CHARACTERIZED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 0</td>
<td>Inter-pandemic</td>
<td>No indications of any new virus type have been reported</td>
</tr>
<tr>
<td>Phase 0, Preparedness 1</td>
<td>Inter-pandemic</td>
<td>Appearance of a new influenza strain in a human case</td>
</tr>
<tr>
<td>Phase 0, Preparedness 2</td>
<td>Inter-pandemic</td>
<td>Human infection confirmed</td>
</tr>
<tr>
<td>Phase 0, Preparedness 3</td>
<td>Inter-pandemic</td>
<td>Human transmission confirmed</td>
</tr>
<tr>
<td>Phase 1</td>
<td>Pandemic</td>
<td>Confirmation of onset of pandemic</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Pandemic</td>
<td>Regional and multi-regional epidemics</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Pandemic</td>
<td>End of first wave pandemic</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Pandemic</td>
<td>Second or later waves of the pandemic</td>
</tr>
<tr>
<td>Phase 5</td>
<td>Post-pandemic</td>
<td>End of the pandemic (back to phase 0)</td>
</tr>
</tbody>
</table>
### Table 2: WHO 2005 Pandemic Phases

<table>
<thead>
<tr>
<th>PHASE</th>
<th>PERIOD</th>
<th>CHARACTERIZED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Inter-pandemic</td>
<td>No new influenza subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Inter-pandemic</td>
<td>No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Pandemic alert period</td>
<td>Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Pandemic alert period</td>
<td>Small cluster(s) with limited transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.</td>
</tr>
<tr>
<td>Phase 5</td>
<td>Pandemic alert period</td>
<td>Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is not well adapted to humans.</td>
</tr>
<tr>
<td>Phase 6</td>
<td>Pandemic</td>
<td>Pandemic phase: increased and sustained transmission in general population.</td>
</tr>
<tr>
<td>Postpandemic</td>
<td>Postpandemic period</td>
<td>Return to interpandemic period</td>
</tr>
</tbody>
</table>
**Table 3: WHO 2009 Pandemic Phases**

<table>
<thead>
<tr>
<th>PHASE</th>
<th>Estimated Probability of Pandemic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Uncertain</td>
<td>No animal influenza virus circulating among animals has been reported to cause infection in humans.</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Uncertain</td>
<td>An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat.</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Uncertain</td>
<td>An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Medium to High</td>
<td>Human-to-human transmission of an animal or human-animal influenza reassortant virus able to sustain community-level outbreaks has been verified.</td>
</tr>
<tr>
<td>Phase 5</td>
<td>High to Certain</td>
<td>The same identified virus has caused sustained community level outbreaks in at least two countries in one WHO region.</td>
</tr>
<tr>
<td>Phase 6</td>
<td>Pandemic in Progress</td>
<td>In addition to the criteria defined in Phase 5, the same virus has caused sustained community level outbreaks in at least one other country in another WHO region.</td>
</tr>
<tr>
<td>Post-Peak Period</td>
<td></td>
<td>Levels of pandemic influenza in most countries with adequate surveillance have dropped below peak levels.</td>
</tr>
<tr>
<td>Possible New Wave</td>
<td></td>
<td>Level of pandemic influenza activity in most countries with adequate surveillance is rising again.</td>
</tr>
<tr>
<td>Postpandemic</td>
<td></td>
<td>Levels of influenza have returned to the levels seen for seasonal influenza in most countries with adequate surveillance.</td>
</tr>
</tbody>
</table>
### Table 4: Distinction between the descriptors ‘Interpandemic’ and ‘Non-pandemic’

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpandemic Period(s)</td>
<td>The use of the term ‘interpandemic’ to describe pandemic periods varies throughout the documents. In WHO 1999, the interpandemic period includes four distinct phases (Phase 0, Preparedness levels 0-3) preceding the pandemic phases. In contrast, the interpandemic period in WHO 2005 is comprise of two pandemic phases (Phase 1-2) which precede the ‘pandemic alert’ periods. The WHO 2009a document abandons the characterization of phases by ‘period’ (e.g., interpandemic) and instead provides a probability of pandemic category to indicate the risk attributed to the phase. As such, the term ‘interpandemic’ does not appear in the WHO 2009a,b documents.</td>
</tr>
<tr>
<td>Non-pandemic Period</td>
<td>While the terms interpandemic and non-pandemic are at times used interchangeably in my analysis, it should be noted that the term ‘non-pandemic’ is rarely, if at all, used within the documents (the rare times that it does appear is in the description of ‘nonpandemic strains’). Furthermore, the term does not describe any of the formal periods outlined in the pandemic phase descriptions provided in Tables 1-3. As such, ‘non-pandemic’ takes on a more conceptual role in my analysis, as I use it to describe all of those phases that do not constitute the actual pandemic phase(s). For example, the non-pandemic period in WHO 1999 includes four interpandemic periods during Phase 0 and the post-pandemic Phase 5 (see Table 1). The WHO 2009 non-pandemic period consists of Phases 1-4 and the Post-peak and Postpandemic periods.</td>
</tr>
</tbody>
</table>

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1 An exception to this is the ‘one-time’ description of the non-pandemic period in WHO 1999.