10. THE POLITICAL ECOLOGY OF PLAGUE IN THE GLOBAL NETWORK OF CITIES: THE SARS EPIDEMIC OF 2002–2003

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ABSTRACT

In the late autumn of 2002 Severe Acute Respiratory Syndrome (SARS) broke out in Foshan city in the People’s Republic of China, and over the next few months it rapidly spread to every continent and 29 countries. Although plagues may be global events, they are ultimately fought at the local level. In discussing the SARS epidemic, I present two theses. (1) In the wake of a plague, politics tends to shape a community’s response in protecting the system, evaluating performances and allocating blame, punishments, and rewards, and restructuring organizations. (2) Because of their potential for demographic and institutional destruction, systemic responses to plague tend to become entwined in politics at all levels – the local, national, and international.

INTRODUCTION

In the late autumn of 2002 Severe Acute Respiratory Syndrome (SARS), the first new plague of the twenty-first century, broke out in Foshan city of
Guangdong Province in the People’s Republic of China (PRC) (Chiu & Galbraith, 2004). Over the next few months SARS rapidly spread throughout China, leap-frogged to Hong Kong, and from there spread by global air to every continent and 29 countries. Along the way SARS infected more than 8,000 people and took at least 774 lives. One out of every two older persons who contracted the disease died. Additionally, it snarled global air traffic, cost billions of dollars, heightened political tensions, and brought home the message that cities in the global network are continually at risk for a serious microbe invasion riding along with the daily international exchanges of travelers, products, plants, and animals.

Although plagues are global biomedical and epidemiological events, they are fought ultimately at the local community level. It is in the local community that people fall ill and die. It also is in the local community that diagnoses are made, treatment regimes are established and implemented, and contagion is fought. Plagues typically overrun the normal capacity of community healthcare systems to respond, and without help from external expert systems such as the World Health Organization (WHO), local communities can suffer excessive casualties (Schwirian, 2005). The timely arrival of help from external agencies and organizations is not automatically assured because responses to outbreaks of plague often become tangled in the morass of national and international politics (Fidler, 2004). The WHO has taken on the role of being the chief agency that provides worldwide assistance to countries and communities as they battle overwhelming health crises. Nevertheless, WHO’s ability to do its work depends on the willingness of national and local political regimes to request their assistance.

In this chapter, I examine plague from the theoretical perspective of political ecology. My methodological approach is the event/action model. I discuss two theses. My first is that because of their potential for demographic and institutional destruction, systemic responses to plagues tend to become entwined in politics at all levels – local, national, and international. My second thesis is that in the wake of a plague, politics tends to shape a community’s response in: (1) protecting the system, (2) evaluating performances and allocating blame, punishments, and rewards, and (3) restructuring organizations. By politics, I mean the social actions taken by individuals, groups, and organizations aimed to obtain and wield political power in order to achieve their goals, protect their position, and control their domains. Plague outbreaks are epidemiological events that quickly become a political event as well.

I examine these theses in case of the outbreak and spread of SARS in 2002–2003. In the following sections of this chapter, I first present an overview
of the growing threat of plagues in the global network of cities. Next, I discuss the political ecology framework and then provide an overview of the course of the SARS epidemic. Finally, I discuss SARS in terms of the two theses.

PLAGUES AND THE GLOBAL NETWORK OF CITIES

The Persistent Threat of Plagues

The 1950s and 1960s was a time of great optimism among public health researchers, medical experts, and government officials. At that time, it was thought that great scientific advances were being made in the field of war on contagious diseases including bubonic plague, malaria, smallpox, typhoid fever, infantile paralysis, and diphtheria. In 1967, William H. Stewart, the then Surgeon General of the United States, told in a White House meeting of state and territorial health officials that we were at a health transition point – the killer infectious diseases were now well controlled and it was time to shift the focus from them to the chronic diseases (Garrett, 1995).

It was widely believed that the victory over smallpox showed what was possible in the war with diseases when research, medical practice, government resources, and international cooperation joined forces. In fact, the World Health Assembly – the governing body of WHO – declared that the world was finally free from the scourge of smallpox (Thirty-Third World Health Assembly, 1980). Concerns over smallpox, though, have been revived recently as some have seen it as a possible agent of bioterrorism (Bollet, 2004). Nevertheless, in global public health circles it was thought that the victory over smallpox, as well as apparent victories over yellow fever, measles, and poliomyelitis, was a portent of things to come in the war against other serious diseases (Oldstone, 1998). That proved not to be the case.

In the last 30 years, 30 new killer plagues, for which there is no known cure, have been identified. Among these is AIDS, which has proven to be the worst pandemic ever faced by human beings (Klesius, 2002). Another 25 microbes that we thought were eradicated have returned in even more virulent forms (Federation of American Scientists, 2003). For example, tuberculosis (TB) has returned stronger than ever and has become linked with AIDS (Gandy & Zumla, 2003). Per year TB affects 8 million people and kills about one million. TB is now a leading cause of death in many parts of the world (DeAngelis & Flanagin, 2005).

Where did the new wave of plagues originate? Research has shown that a number of the old viruses have mutated and have returned with the force of
outbreaks of epidemics are not easy to predict, and they are often triggered by seemingly minor things. For example, the SARS outbreak in China in November 2002 resulted from a chef coming into contact with an infected exotic animal he was preparing for a restaurant meal. Similarly, the outbreak in Hong Kong resulted from a Chinese physician, who had been exposed to SARS in patients, coming to Hong Kong for a family wedding party, whom he had treated for a common "flu." According to Malcomb Gladwell (2002), three rules seem to govern epidemics.

The first of Gladwell's rules is *The Law of the Few.* By this is meant that only a few people are needed to spread an epidemic if they are well connected to others. This law builds on Stanley Milgram's (1967) small-world research that has come to be popularly referred to as "six degrees of separation." Milgram showed that most people are linked together by only a few steps in their social networks. It is not that each of us is related to everyone else through the six intermediaries, but that in the chains of these relationships we become connected to "funnels" or persons with much higher-than-average connectivity. They link together social networks that otherwise would remain separate from each other. It is through these people that our individual network connectivity is multiplied. In epidemiology terms, these funnels are referred to as "super spreaders."

We saw this funnel or super spreader phenomenon in the SARS-infected Chinese physician who came to Hong Kong. He stayed for one night in the ninth floor of Kowloon's Metropole Hotel. There his virus was contracted by 14 other people staying in the same hotel floor. In turn, by international air travel, the 14 brought SARS with them to several other cities in the global network. One of the 14 who contracted the disease from the physician was an airline flight attendant. She proved to be a super spreader. Over the course of the next few days, she single-handedly infected at least 100 other people and also earned the dubious distinction of being the person who brought SARS to Singapore.

In the spread of a disease throughout a social network and across social networks, the linkages among people need not be permanent. They may only be transitory or very brief; that is, just long enough for the virus or
bacteria to jump from one individual to the other. This form of connection between individuals has been called “weak social ties” by Mark Granovetter (1983), and has been argued to be very powerful in the spread of epidemics (Köhler, 2004). This weak-tie type of contact may take one of several forms, such as coughing or sneezing on another person, touching an infected person, touching a contaminated surface, or ingesting food or water contaminated by another. The variety of possible transmission modes makes contact tracing very difficult for public health researchers, especially with new diseases about which little is known (Kiss, Green, & Kao, 2005).

Gladwell’s second rule is The Stickiness Factor. By this is meant the length of time the disease stays with a person, and is contagious to others. The longer one is contagious, the larger the number of persons one may infect. SARS has a high-stickiness factor. Its incubation factor goes up to ten days. Within that time period, a well-connected person may infect many others. For example, on January 31 a man in Zhongshan, China who had been ill for several days was admitted to hospital in Guangzhou. During his short stay he infected 30 people in that hospital. He was then transferred to another hospital where in a matter of a couple of days he infected another 26 people. In addition, over the course of his illness he spread the disease to 19 family members. So, single-handedly, in a few week’s time, he spread SARS to at least 75 people. When the stickiness factor combines with the contact range of a super spreader, a lethal public health threat is created.

One such person in the early 1900s was “Typhoid Mary” Mallon. She was an Irish immigrant to the United States who worked as a cook in several New York households where as a typhoid carrier she infected dozens of people. Mallon became a major public health threat before she was quarantined for life after refusing to cooperate with health authorities and refrain from employment as a cook. Ironically, her last employment as a free person was at New York’s Sloan Hospital where she infected 25 people of whom two died (Leavitt, 1996). This was after she had already been quarantined for the first time and released. Disease carriers such as Mallon, whether of typhoid, AIDS, SARS, or some other infection, are very dangerous as public health threats because of their potential mobility among various social networks. This mobility multiplies the potential damage that one highly infectious person can do.

Gladwell’s third rule is The Power of Context. This means that epidemics are sensitive to the time and place conditions and circumstances in which they occur. In the SARS outbreak in China, four major context factors were important. The first was the poor capacity of China’s community healthcare systems to deal with the normal day-to-day needs of their population, let
alone with the emergence and spread of a killer plague (Lampton, 2003; Riley, 2004; Wannian & Chan, 2002).

The second major context factor was the cult of secrecy of the Chinese government in which information about the outbreak and spread of SARS was withheld from the world public health community (Loh, 2004), thereby permitting SARS to spread without the intervention of outside experts on epidemics that could have contained the contagion. The third factor was the political transition taking place in China’s top leadership that led them to cover-up the extent and nature of the epidemic out of fear of creating political instability (Loh & Yan, 2004). Fourth was the timing or era of the outbreak. It occurred in the age of daily global air travel in which SARS-infected persons moved across the world in a matter of only hours bringing the disease to others (Schwirian, 2005).

In understanding the course of an epidemic, I add a fourth rule to the three proffered by Gladwell. It is The Principle of Isolation. To break the chain of plague transmission, infected individuals must be isolated or quarantined from the general population. This is particularly important in outbreaks in which there are no sure curative treatments and no inoculations to protect those not yet infected. As long as infected persons are able to move freely, they pose a threat to the general population. Isolation of the infected and quarantine of people exposed to the disease are standard public health activities in the face of plague.

But, surprisingly, quarantines anger some people who see them as excessive measures. For example, when SARS struck Toronto the public health officials quarantined almost 30,000 persons and that was far more than were quarantined in Hong Kong, which was at the epicenter of the outbreak. This was met with a negative response in Canada’s civil rights quarters. Lesley Jacobs, a professor of law and human rights at York University, stated, “Quarantine infringes on civil and political rights recognized in international law and the legal systems of most constitutional democracies. My research indicates that senior public health officials in Toronto did far less than their Chinese counterparts to accommodate the rights and concerns of front-line health workers, quarantined individuals or SARS patients and their families” (Connor, 2005). To limit the use of patient isolation and quarantine of those exposed to the disease, and who are therefore potential additional victims, removes one of the most effective means of truncating the contagion.

It is one thing to quarantine an individual or group of individuals in a community today, but it is quite another thing altogether to attempt to quarantine a whole city. That would mean shutting off the total flow of
people and commodities across a city’s borders. Such an act would in effect temporarily disconnect the city from the global network of cities and shutoff all contact of both the strong as well as weak social ties between city residents and those in other places. The SARS event did result in cities such as Hong Kong and Beijing, having marked declines in flows of tourists and business travelers into the cities, to attend international meetings and gatherings. Millions of dollars were lost to these cities during the period of the active outbreak of the disease. What happened in these cities clearly shows that during a plague a total shutoff of flows would do almost unimaginable damage to a city’s economy.

Even if the isolation of a city from the global network were desirable, the important questions are who would take the decision and who would enforce it. There is no single international body that can do this. Today, the WHO is as close as it comes to such an authority (Fidler, 2004; Schwirian, 2005). But while WHO can coordinate the international science and healthcare assault in an epidemic outbreak, it can do little to isolate a city from the global network of cities. WHO can and does issue travel warnings, alerts, and advisories in an attempt to limit contact with an infected city, but WHO is dependent of the voluntary cooperation of the nations involved to heed WHO’s advice.

Finally, just what is SARS? It is a potentially lethal syndrome that is characterized by fever, lower respiratory symptoms, and radiographic evidence of pneumonia (Centers for Disease Control and Prevention, 2003, 2005). SARS is regarded by WHO (2003a) as a particularly serious health threat. It has no vaccine and no treatment, except the standard treatments of isolation and quarantine. The virus comes from a family of viruses noted for their frequent mutations. The initial symptoms are general and common and are often taken to reflect normal flu. Available diagnostic tests have limitations. Patients can slip through screenings and spread the disease widely. The maximum incubation period for SARS is 10 days, so air travel makes it possible for the disease to spread rapidly from one city to another.

The Global System of Cities: Hierarchy Versus Network

City Hierarchy Model
Two traditions have developed in the literature for discussing the connectedness among the world’s cities. Both of them help us understand the spread of plague. The two traditions differ not so much in kind as they do in emphasis. The first is the urban hierarchy model. It emphasizes the differential concentration of power and control across the system of cities. It states that in
the world’s system of cities, certain places such as New York, London, and Tokyo have become more important than other cities in the flow of people, commodities, power, and influence (Friedman, 1986; Hall, Pfeiffer, & Hall, 2000; Ross, 1987; Sassen, 1994a, b, 1999, 2001).

Drawing on the earlier work of Patrick Geddes (1949 [1915]), Peter Hall (1966, p. 7) wrote of these world cities, “There are certain great cities in which a quite disproportionate part of the world’s most important business is conducted.” Today it is widely recognized that these cities not only are the focal points for business, political, and cultural matters within their society but they also serve as connection points to other societies. Indeed as Mark Abrahamson (2004, p. 2) has noted, “the key nodes in the international system are (global) cities, not nations. … Once the linkages among cities became a global network, nations became dependent upon major cities for connections to the rest of the world.” The hierarchical positions of specific cities in the world system may be modeled on the basis of international flows of investments (Alderson & Beckfield, 2004).

For students of the spread of plague, the hierarchy model offers some important ideas. First, the leading world cities including New York, London, Paris, and Tokyo are so closely connected through their ongoing daily exchanges of people and commodities that a plague outbreak in one place would likely spread rapidly to another. Indeed as Richard Smith (2003) has pointed out, the transatlantic commuting between New York and London has given rise to a lifestyle for many people that brings the two cities together and results in bringing the bicontinental New Yorkers and Londoners closer to each other than they are to people in other parts of their home country.

A second importance of the model for understanding plagues is that the world cities are also centers of research and administration. They concentrate people with the cutting edge talent and skills necessary for responding to new and threatening events. Thus, the application of science and technology in fighting plagues will largely emanate from these cities or flow through them. Third, the prospect of isolating the world cities from each other as a way to contain a plague is poor. There is simply too much riding on the daily exchanges among them. Finally, the concentration of power and decision-making actors and international organizations in these cities make them the natural sites for organizing the overall response and resistance to global plague outbreaks.

City Network Model

The network model is the second tradition in the study of the global system of cities. While the hierarchy model emphasizes the vertical power relations
among cities, the network model emphasizes the horizontal connectivity among all reaches of the system of cities. Indeed, for many years, transportation geographers recognized that the network model offers a very useful way for analyzing the connectedness among cities and the distances among them through direct and indirect relationships and flows of people, products, and information (Matre & Schwirian, 1970; Taaffe & Gauthier, 1973; Garrison & Marble, 1974).

According to the model, the collection of cities (both global and local) is viewed as a set of interconnected socioeconomic subnetworks in which people, goods, power, information, and influence flow from place to place creating linkages among them of various importance. The overall linkage between pairs of subnetworks depends on the extent to which one or two cities dominate the links of its cities to other subnetworks. For example, for years, all connections between Western and Chinese cities had to pass through Beijing. In effect, connections between U.S. and Chinese cities were shaped importantly by the decision makers in Beijing. So, the linkage between the city networks of the two countries was tenuous. This is somewhat less true today as individual cities in the two countries form economic and social ties. As we will see later in the discussion, Beijing’s control of access to its network of cities served to exacerbate the problems created by the SARS outbreak.

The network model differs in an important way from the hierarchy model. The network model’s analytical framework draws on the rigors of mathematical graph theory (Jungnickel, 2004) while the hierarchy model does not. This leads to the horizontal focus of the network model, as opposed to the vertical focus of the hierarchy model. The mathematics of graph theory permits the quantitative analysis of the networks of cities and of flows within the network through application of basic graph-theoretical concepts. These concepts include **nodes** and **ties**. Accordingly, cities are the nodes in the network, and ties are the relationships between them. A city network, then, is a map of all relevant ties (flows and relationships) between the nodes (cities). **Direct** and **indirect links** are concepts that refer to the nature of the ties between cities.

For example, Columbus, Ohio is connected to San Francisco through several direct and indirect links. For air travel, there are several direct flights-a-day between the two cities and numerous indirect links through places such as Chicago, St. Louis, Phoenix, Minneapolis, and Dallas. An outbreak of plague in any of these cities has many avenues of travel to the other cities. Network **connectivity** is the extent to which all nodes in the network are linked together by both direct and indirect links. As flows
increase among the world’s cities, the world’s city system is becoming increasingly connected and interdependent (Friedman, 2005). Plague in city a network of high connectivity could rapidly reach all cities in the system unless immediate actions were taken to isolate those infected individuals from travel to other places in the system. Plague outbreak in a system of low connectivity would have a better initial prospect of being contained.

Centrality is an attribute of a node, or city, in a network. In its simplest form, the centrality of a city is given by the number of ties it has with other places in the network. According to network theory, the greater the number of ties a city has to other cities, the more favorable its overall position is in the network. The ties can be used by city leaders to access resources and information, to exert influence and control, and to play a brokering role in transactions between other places.

For fighting plagues, cities with high network centrality usually make good places for distributing personnel and supplies to cities with plague outbreaks, and for coordinating ameliorative efforts. Centrality and network power are not the same. Philip Bonacich (1972) has argued that it not just the number of ties that confers power on a city, but also with whom those ties are. Being connected to powerful others, confers more power than being connected to the nonpowerful.

Centrality and power can vary by institutional area. Let us take the example of Geneva, Switzerland. Geneva is not normally considered to be among the elite cities of the world’s urban hierarchy. Nor is Geneva a city of high centrality in the world flows of commodities and people. But in world health matters, Geneva is both very powerful and very central. It is the headquarters of WHO. WHO in Geneva is connected to every world capital, and it is from its headquarters that it launches programs for fighting diseases and epidemic outbreaks, alerts the world to viral threats, and engages in the promotion of health and well being.

From the standpoint of public health, the network model sensitizes us to the fact that plague may enter the global system from a city at any point in the network. All it takes is a single contagious individual from an infested hinterland region coming to a city and thereby exposing the city dwellers to the infectious microbe. Indeed, SARS had entered the global system in China’s Foshan city in Guangdong Province. Foshan, located in the Pearl River delta, has a population of half a million, and is only about 140 miles from Hong Kong.

Once plague enters the global system it can move throughout the system through the normal exchanges of people, animals, and products among the cities in the system. In effect, all cities in the global system are important
when it comes to their potential as an entry point for plague. Of course, the most important places are those that are most central in the system. Most worrisome is the tendency for plague to enter the global network by invading cities at the network’s periphery. In those places, the microbes are more likely to become well established than they are in the network’s more central cities because the healthcare organizations of the periphery communities tend to have lesser capacities and capabilities to deal with and contain the outbreak.

Taken together, the hierarchy model and the network model further our understanding of the course of a plague. The network model assists us in understanding the pattern of the disease’s spread while the hierarchy model points us to the control and command centers from which the disease must be fought.

**POLITICAL ECOLOGY**

*Ecology*

Ecology studies the relationships among people, their environment, and their sociocultural system (Schwirian & Mesch, 1993). The three elements are interdependent. A change in any one of the three provokes changes in the other two. The pattern of local response to an epidemic is in terms of the community’s culture and organizational pattern as embodied in the network of local interorganizational linkages and in its traditional ways of doing things (see Molotch, Freudenburg, & Paulsen, 2000).

From the ecological perspective communities may be viewed as problem-solving systems that are organized to maintain and improve the health and well being of their residents (Young & Minai, 2002). In matters of healthcare, success or failure may be measured by things such as infant mortality rate, number of years of premature death in the population, murder rate, and hospitalization rate. For a plague outbreak, healthcare success or failure may be measured by indicators such as prevalence of the disease, changing incidence rate, and the case fatality rate for different demographic categories.

When plagues invade a community, healthcare is the first and most seriously hit system. When infected persons present themselves to hospital emergency rooms, the staff and facilities quickly become overrun. Most hospitals have a very limited allocation of beds and rooms to isolation. Diagnostics and treatment become major problems if there is no advance
warning that patients will be arriving with a communicable disease. This is particularly serious when the disease is new and there are no established diagnostic and treatment protocols. Hospital staff is first hit. They come into contact with the contagion often before it is known that the incoming patients are infected with a new and deadly disease.

When SARS invaded Hong Kong, the hospital system quickly became stressed to the limit. Available beds became full with SARS patients and so many staff members fell ill that some hospitals almost ceased functioning. For example, at the Prince of Wales Hospital, a total of 238 staff members came down with SARS many of whom required intensive care (SARS Expert Committee, 2003). The lack of a healthy staff paralyzed hospital operations. Other hospitals became overrun as well. For example, on April 12, after treating 593 SARS cases, Princess Margaret Hospital had spent itself and had to send all new cases to United Christian Hospital. This pattern was repeated in other cities such as Beijing and Hanoi.

**Politics**

The political ecology approach views major community issues, problems, programs, projects, and events (such as an invasion of plague) as being inherently not only ecological, but also inherently political (Schwirian & Mesch, 1993). Important local matters are influenced and shaped by the community’s political regime. The regime is the relatively stable network of government officials and local political actors that largely shape the city’s public agenda, plans for the futures, and specific actions on important matters (Shannon, Kleniewski, & Cross, 2000).

In addition to members of the regime, additional community actors come forward when their specific concerns, areas of responsibility, and values become enmeshed in public events, issues, and problems (Curry, Schwirian, & Woldoff, 2004). While regimes function in the backstage, it is ultimately the public officials who are on the front stage that are held responsible by the local populace when things go awry; that is, unless the officials can shift blame to other actors and organizations.

The ecology approach, then, views matters in terms of the connections among people, the environment, and their sociocultural system. Political ecology gives special emphasis to the political facets of local matters since the government and the institution of politics both shape and take actions as issues and problems arise, fester, and flare. Plagues, natural disasters, and terrorist attacks because of their rapidity of onset, damage potential, and
mass stressing of the populace, create such swift and serious local disorder that they are among the worst things that the political ecology system of a city confronts.

THE SARS EPIDEMIC

The first known case of SARS appeared in Guangdong Province in mid-November 2002. It had spread throughout the province and into the others nearby, for the next two months. On January 23, 2003 a Guangzhou medical official reported to the provincial health department that there was an outbreak of an unknown respiratory disease. Shortly thereafter, a man was admitted to two hospitals in Guangzhou where he infected at least 56 staff members. On February 8, Guangdong health officials informed the central health office in Beijing that there was a serious outbreak in the area, and they went on to hold a press conference in which they reported that everything was under control. For the previous two months, people had been wearing face masks in public and using traditional herbal remedies in the hope of preventing infection.

Two days later, the WHO office in Beijing received an e-mail from a former employee that 100 deaths had occurred from this “strange contagious disease” and that many people were in panic and emptying pharmaceutical stocks for medicines they hoped would ward off the disease. Over the next few days, the Chinese Ministry of Health informed and updated WHO that there was an outbreak in several cities in Guangdong, that it was an atypical pneumonia and a minor problem, and was under control. For the next two months the central health officials in the People’s Republic continued to underreport the size of the outbreak, prohibited the press from reporting on the serious nature of the outbreak, and refused help from WHO in accessing the extent of the epidemic and in containing its spread. By mid-April, the scale of the outbreak and level of mortality forced Chinese health officials to implement a widespread and aggressive attack on the epidemic. Furthermore, under very strong pressure from WHO and the world community of nations, China became more forthright in reporting the scope and severity of the epidemic. All told, the People’s Republic had at least 5,327 cases and 349 deaths.

SARS came to Hong Kong on February 21, 2003. A physician who had treated SARS patients in Guangzhou stayed one night in Hong Kong’s Metropole Hotel. He came to the city for a family wedding. He felt ill for five days before the trip and was ill on his arrival, but felt well enough to go
shopping and sightseeing with his brother-in-law who lived in Hong Kong. His condition worsened that night and he was hospitalized with respiratory failure the next day. He died on March 4. His brother-in-law died of SARS on March 18. As it turned out, he infected 14 other residents of that floor and they, in turn, took the disease with them as they went on their travels. They took SARS to Vietnam, Canada, Germany, Singapore, Ireland, and other places as well, including the neighborhoods of Hong Kong.

On February 26, one of the Metropole 14 travelers was admitted to the French Hospital in Hanoi. He subsequently died on March 6. While in Hanoi, he infected many hospital staff members including WHO’s Dr. Carlo Urbani who has named the disease, “SARS.” Hanoi’s French hospital had to be shutdown on February 26. Dr. Urbani subsequently traveled to Bangkok for a conference, fell ill while he was traveling, was hospitalized upon deplaning, and died of SARS on March 29.

The spread of SARS through air travel by the Metropole 14 was repeated in several cities. In each, the pattern was similar: (1) the exposed person becomes symptomatic, (2) the infected person exposes others to SARS both in flight and upon arrival, (3) symptoms show progress and the person has to be admitted to hospital, (4) unsuspecting hospital staff as well as other patients and visitors becomes infected, (5) exposed person, in many cases, died, and (6) SARS spreads to family members and residents of the larger community. This is clearly seen in two cases of Metropole 14.

The first was a 26-year-old flight attendant who was in Hong Kong for shopping and stayed in the Metropole’s now infamous ninth floor. Upon returning home to Singapore she felt ill and was contagious. She was admitted to hospital on March 1 where she was visited by her parents, other family members, and members of her church. At the time the hospital staff was unaware of the SARS outbreak, so visitors were freely permitted. The hospital staff learned of SARS too late to stop her from spreading the virus. Single-handedly she infected over 100 cases. Among the dead were her father and mother and her pastor. Several of her family were hospitalized and survived, as did she. Once the SARS outbreak was recognized, she was quarantined in the hospital and prevented from attending her parents’ funeral (Associated Press, 2003). By the end of the outbreak, Singapore had reported a total of 268 cases and 33 deaths.

The second example of the Metropole 14 spreading SARS is a 76-year-old Toronto woman who also stayed in the hotel’s ninth floor. She returned home from Hong Kong on February 23 and was admitted to Toronto’s Scarborough Grace Hospital. She died of SARS on March 5. She infected
several members of her family including her son who died. Toronto recorded 145 cases and 23 deaths.

During March, April, and May, SARS continued to spread within cities and between cities, but public health systems were now aware of the characteristics of the disease and of the necessity for isolation and quarantine, both of which were widely applied. So were a number of public health measures including closing schools, businesses, and residential complexes that were “hot spots” for the spread of the virus, canceling conferences and meetings, limiting international flights, and screening of passengers.

The capacity of communities to deal with the outbreak was supplemented by the assistance of WHO. In the late winter and spring of 2003, WHO had: (1) declared SARS a worldwide threat; (2) had up and running real-time networks of experts scientists and research laboratories aimed at discovering the nature of the disease, controlling its spread, treating the victims, and protecting healthcare workers from infection; (3) identified the SARS corona virus; (4) provided support to countries with SARS outbreaks that included supplies for infection control and experts that helped improve community healthcare capacity in the fight against SARS; (5) pressured China to provide correct information on its outbreak and to permit WHO research teams to investigate China’s outbreak; and (6) held the first global conference on SARS that issued guidelines on fighting the disease. Without the hard work and coordinating efforts of WHO, it is unlikely that the SARS outbreak would have been truncated as it was by mid-summer 2003.

By the end of the SARS outbreak, it had become very clear in international public health circles, that in order to successfully fight a global outbreak of plague today, a coordinating global expert organization, such as WHO, was required to take the lead in the battle. Without that help individual city healthcare systems were left to flounder as their capacity was overrun. It also became clear that international cooperation with WHO was required to stem the tide of a disease outbreak. Cooperation between the national governments and WHO was on a voluntary basis, and there was a great deal of variation among the states in their actual degree of cooperation.

THE POLITICS OF PLAGUE

My first thesis is: that because of their potential for demographic and institutional destruction, systemic responses to plagues tend to become entwined in politics at all levels – the local, national, and international.
The course of SARS in Taiwan shows how tangled plague can become in international politics. SARS brought the issue of Taiwan’s sovereignty to the forefront. SARS came to Taiwan in March when an infected man arrived from Hong Kong to visit his brother in Taipei. The disease spread rapidly in Taipei as it did in other global cities. From there it spread throughout Taiwan. Ultimately, Taiwan was third to only China and Hong Kong in the number of SARS cases. Three-hundred-forty-six people were infected of whom 37 died. Unlike the other cities with outbreaks, Taipei was unable to enlist the aid of WHO experts in fighting the disease. The international political context in which Taiwan operated differed greatly from elsewhere.

When World War II ended in 1945, the Allies agreed that Chiang Kai-shek’s troops would occupy Taiwan (New Taiwan, 2005). In 1949, Chiang Kai-shek lost the revolution in China to Mao’s communist forces. Chiang Kai-shek’s government withdrew to Taiwan and established it as the center of the “recognized” Chinese government. However, China’s civil war split the country into two. Taiwan represented China in the United Nations until in 1972 its UN seat was given to Beijing. Since that time Taiwan has been declared by Beijing to be a rebellious province of greater China. China has continually objected to any UN involvement in Taiwan and that includes the WHO. This is part of Beijing’s policy to isolate Taiwan diplomatically and force it to accept Beijing’s rule. Every year, since 1991, Taiwan has petitioned the UN for membership, and each year Beijing has vetoed the petition.

Since the WHO can only supply help to a country when invited by that country to do so, it simply could not move in as it did elsewhere. In fact, it was not until seven weeks after Taiwan reported its first SARS case that Beijing said that it would permit WHO scientists to enter Taiwan. Taiwan had to refuse the help that Beijing finally offered because acceptance would indicate that Taiwan had recognized Beijing’s authority. Fortunately, the U.S. Center for Disease Control was able to provide some assistance to Taiwan.

The government in Taiwan blamed China for the SARS invasion since Beijing covered up the fact of the epidemic and its extent, thus leaving cities totally unprepared for coping with an outbreak of an unknown virus. Taipei also blamed Beijing for blocking Taiwan’s access to help from WHO. In addition, Taipei blamed WHO for not providing the assistance that it could have supplied in spite of Beijing’s posturing.
National Politics

The PRC’s national politics directly affected the spread of the SARS outbreak, the number of cities infected, and ultimately, the number of deaths from that plague. Because of the lying and covering up of the outbreak by the Chinese government, expert biomedical responses were delayed by several months, global air travel spread the plague to all continents, and excessive and unnecessary deaths among hospital staff took place. There were several political factors operating in that winter and spring of the epidemic. Underlying each was China’s policy that information about population and health conditions was a matter of national security, and hence, secrecy (Loh & Yan, 2004). It was no surprise, then, that Beijing clamped down on the media and on individuals who attempted to make the plague public (Schirian, 2005). Chinese officials felt that they had too much to lose if word of the plague got out.

One reason for the news blackout was that China’s 10th National People’s Congress was to be held in Beijing from March 5 to 17, 2003. The top piece of business was the endorsement of the new top government officials including Wen Jiaibao as prime minister and Hu Jintao as president. Tension surrounded the meeting because of the leadership transition. In the winter and early spring of 2003, Beijing’s attention was mainly focused on the upcoming transfer of power. They wanted everything to go smoothly, and were concerned that any potentially divisive issue could trigger demonstrations and riots. The goal was to project a message of national unity, continuity, and stability.

As Carol Lee Hamrin (2003), Former Senior China Affairs Specialist with the U.S. State Department, put it, at the meetings of the People’s Congress, “There was no ‘distracting’ discussions of sensitive issues … on the eve of the Congress, nor grave international matters such as the impending war on Iraq, nor the world health alert regarding a deadly influenza that likely originated in South China.”

Other things were at stake for China at that time as well. First, the PRC was in the running for designation as the site for the 2008 summer Olympics. If word about the plague got out, then Beijing would become stigmatized as a plague ridden, unhealthy, and hazardous place. That probably would result in Beijing being bypassed by the Olympics selection committee. Second, tourism means money. Upcoming was the annual May Golden Week celebration in Beijing. Well over half a million tourists normally flood Beijing for the event bringing with them a major infusion of money to the city coffers. Here again, word of hazards-to-health had to be minimized so
that visitors would not be driven away. However, once word was out about the SARS epidemic, the government canceled the celebration and that cost the city several billion dollars.

Local Politics

All issues in Hong Kong ultimately become local political issues. Britain handed Hong Kong back to the PRC in 1997 with the agreement that a “One China, Two Systems” policy would permit Hong Kong for many years to maintain its capitalistic economy with protections for the people’s equal rights and freedoms. Since that time a major segment of Hong Kong’s population has perceived a steady erosion of freedom and civil liberties.

During the winter and spring of 2003 while plague was raging, the healthcare system’s capacity to respond was overrun, and people were dying in the city, Hong Kong was embroiled in serious political issues. One was a growing sense among the general population that Hong Kong’s residents were not being served well by government. At that time Tung Chee-Hwa was Hong Kong’s Chief Executive, and he had become the main focus of public displeasure. He had been handpicked for the job by Beijing and the general sentiment was that he always bend to Beijing’s wishes at the expense of freedom and democracy in Hong Kong. His management style has been described as personal and chaotic and that it undercut the government ministers’ confidence and responsiveness to the public (DeGolyer, 2004).

On March 5, 2003, Hong Kong’s Financial Secretary, Anthony Leung, announced a proposal for a sweeping and major increase in the city’s taxes. It hit all areas – profits, income, a new boarder crossing tax, a new tax on employing foreign domestic helpers, and new fees and charges for a variety of things including the first ever registration tax on automobiles. While the debate over the proposed taxes dragged on, a Chinese language news paper reported that only a few weeks before Leung announced the new taxes he had purchased an expensive new car. By purchasing it before the new registration tax, he saved HK$190,000 in taxes. The public was furious. Demands for his resignation came from several quarters. He pled that he forgot about the purchase and was distracted by family events. Ultimately he resigned, became the target of a corruption investigation, and faced possible criminal indictment.

A near-final straw in Honk Kong’s political turmoil at the time was the controversy over Article 23 of the Basic Law. The Law functions as Hong Kong’s political constitution. The original proposal included a number of
security issues that a large number of Hong Kong residents considered to be greatly undermining civil rights. The proposal included such items as secret trials without a jury for those charged with treason, secession, and subversion. The public anger that arose over the proposal was such that 500,000 Hong Kong residents demonstrated against it in the streets on July 1, which was the anniversary of Hong Kong’s handover from Britain to China.

Anger over the SARS crisis became a part of the opposition to government. There was anger at the PRC for hiding the outbreak, anger at Hong Kong’s government-perceived mishandling of SARS early in the outbreak, for its failure to protect hospital workers, and for its general indifference to the well being of the people. As a result of this turmoil several government officials resigned and Tung’s local political capital was all but totally expended. Tung did back off on the proposed security bill and said the he would focus on economic development and improving social conditions. That did little to improve his popularity.

COMMUNITY RESPONSE

My second thesis is: that in the wake of a plague, politics tends to shape a community’s response in: (1) protecting the system, (2) evaluating performances and allocating blame, punishments, and rewards, and (3) restructuring organizations.

Protecting the System

The healthcare system of each city with an outbreak of SARS attempted to protect the city’s population to the limits of its capacity. Beyond physical health, other aspects of local life were also adversely affected. Travel was curtailed, shopping had all but ceased, meetings and conventions were canceled, weddings were postponed, schools and public-gathering places closed, and imports and exports declined. City leaders realized that in addition to a medical disaster they were also facing an economic disaster. The economic and political leadership of many of these cities focused their wrath on the WHO.

Isolation and quarantine are among the most frequently used tools to stop the spread of a contagious disease (Center for Disease Control and Prevention, 2005a, b). In the battle against SARS, WHO issued a series of travel alerts for specific cities when it became clear that the virus was
traveling rapidly by air from one global city to another. On March 12, 2003, WHO issued the first global alert that there was an outbreak of an unknown pneumonia in Guangdong Province, Hong Kong, and Vietnam. Three days later, WHO issued its second global alert and referred to the disease as “SARS.” That alert contained case definitions for probable and suspected cases and issued guidelines for healthcare workers worldwide.

Throughout April and May, WHO kept two expanding lists of cities; one was a list of cities with recent local transmissions of SARS and the other was a list of cities for which travel advisories had been issued. Cities on the lists, in effect, were voluntarily quarantined from the normal exchanges in the global network, and that meant serious loss of revenue for them. By July 5, 2003, WHO announced that SARS was under control and the last place, Taiwan, was removed from the list of SARS-infected places (WHO, 2003b). But the economic damage to the cities had been done.

Protecting the system is illustrated by the case of Toronto. On April 23, WHO extended its travel warning to cover Toronto. At the time, Canada had 330 SARS cases and 16 deaths all of which were in Toronto. In addition, five people were known to have carried SARS from Toronto to other places, including the Philippines, Australia, and the U.S. WHO advised against all unnecessary travel to Toronto for at least the next three weeks. In defense of the city, Toronto politicians, businessmen, health professionals, and biomedical researchers joined forces to oppose WHO’s decision. Mel Lastman, Toronto’s mayor said in a press conference that he was surprised and shocked: “If it’s safe to live in Toronto, it’s safe to come to Toronto . . . I’ve never been so angry in my life” (CBC News, 2003a).

Sheela Basrur, Toronto’s medical officer stated, “The facts of the matter do not warrant this decision at this time” (CBC News, 2003a). She went on to say that the disease outbreak primarily affected staff in a hospital setting and not people in the street. The province of Ontario’s medical officer for health, Colin D’Cunha agreed. He said, “I am frankly disappointed with the WHO’s actions . . . It was made without consulting the province, and we believe it’s an overreaction” (CBC News, 2003b). He further said that he had been in contact with the health officers of Canada’s other provinces and they agreed that no travel advisory was needed. Joe Halstead, Toronto’s commissioner for economic development said that the economy would be severely hurt because it relies heavily on tourism.

The Canadian government also took up Toronto’s cause. Health Canada demanded that WHO immediately lift its Toronto travel advisory. Health Canada sent a formal letter to WHO on April 24 and followed it up with a teleconference meeting between the Canadian and WHO officials. Health
Canada’s Dr. Marc-André Beaulieu said that WHO was acting on outdated information (CBC News, 2003c). Health Canada was supported by the U.S. CDC. Dr. Julie Gerberding, CDC’s head, said that the CDC was not warning the U.S. citizens to avoid traveling to Toronto. She said, “U.S. citizens traveling to Canada are not at risk for SARS if they stay out of hospitals and follow some common sense precautions” (CBC News, 2003d).

In the face of Toronto’s attack on WHO, WHO did not back down. But by April 30, WHO lifted Toronto’s travel advisory and by May 14 removed Toronto from the list of SARS-infected places; all this was much to the relief of city leaders. However, by May 26, WHO relisted Toronto as an infected area, given a further SARS outbreak in the city with 34 probable or suspected cases linked to four Toronto Hospitals. By early July, WHO finally removed Toronto from its list of infected cities. But here again economic damage had been done. Tourism was down, hotel occupancy was down by half, many restaurants were barely hanging-on, Elton John and Billy Joel canceled a major concert set for the city, and some major league baseball teams were considering not coming to Toronto to play the Blue Jays. In the face of all this, Dr. Donald Low, head of microbiology at Toronto’s Mount Sinai Hospital said, “Toronto is the safest city in the world to visit” (CBS News, 2003).

Evaluating Performances

Performance evaluations, second-guessing, and allocation of blame are common in human affairs. In major events such as a breakout of plague, the finger pointing begins early, proceeds for a long time, and may have serious consequences for those ultimately “blamed.” Blame is socially constructed and politicized (Cohen, 1997; Schwirian, Curry, & Woldoff, 2001; Schwirian, 2006). Responsibility for failure may be assigned to a person, group, outside agent, entity, event, or chance. Assigning blame defines the target for negative sanctions. In assigning blame, more powerful actors work to assign it to the least powerful; system insiders tend to assign blame to system outsiders. The ability to assign blame is a powerful tool in political and administrative matters at all levels.

There tends to be three types of response evaluations, the spontaneous, the inside organizational, and the outside organizational. Local politics tends to color all three. The spontaneous evaluation is one in which someone gives an off the top-of-the-head response to something. For example, a number of public critics in Hong Kong demanded the resignation of chief
executive Tung Chee-hwa in the wake of both political scandals and his perceived dithering during the SARS crisis (Brown, 2003).

Another example comes from Canada. In responding to WHO’s issuing the travel advisory for Toronto, microbiologist Dr. Low accused WHO of having a political and not scientific motivation. He asserted, “I think we’re the scapegoat (for the spread of SARS)” (CBC News, 2003d). A third example of spontaneous evaluation is Taiwan’s automatic accusation that Beijing was responsible for the outbreak of SARS in Taipei, and for keeping WHO from providing Taiwan the help it needed to fight the disease.

The organizationally inside review may be of two general types. The first is the inside panel review in which participants in the event meet to self-assess their performance or to form a general group opinion of how the system performed in general. For a plague outbreak this is the typical hospital medical review. This took place in most hospitals that dealt with SARS patients. Usually, the results of these evaluations are kept confidential, and often they attribute no specific blame to individuals. Frequently, they praise members of the staff that performed admirably during the crisis. Often, they suggest organizational improvements that will elevate future performance when faced with a comparable medical emergency.

The organizational sacrifice is the second form of organizationally inside review. People in power in the organization identify someone below them in the power structure to take the fall for the organization’s poor performance in a crisis. In Beijing, when the world criticism of the political regime’s mishandling of SARS, a decision was made that serious damage control was needed and that some in the government hierarchy had to take the fall for the government. Beijing fired both health minister Zhang Dejaing and Beijing city mayor Meng Xuenong for “their” poor handling of the SARS crisis. In addition, Lui Qi who was the party official responsible for Beijing city, issued a public apology for his failure to keep the public adequately informed about the SARS outbreak.

Outside organizational evaluations were conducted in several cities. In Hong Kong, a SARS Experts Committee was established on May 28, 2003, by Hong Kong’s chief administrative official, the unpopular Tung Chee-hwa. It consisted of 11 persons considered to be experts in contagious diseases and responses to them. They came from the UK, Australia, Hong Kong, China, and the U.S. They were to: (1) review the work of the government and the Hospital Authority during the crisis, (2) review the general capabilities of Hong Kong’s Department of Health and the Hospital Authority for dealing with such problems, and (3) identify lessons learned during the epidemic.
A fury of criticism greeted the initial appointment of the committee. Many felt that being government appointment it would whitewash the performances of all local parties during the crisis. The Committee’s final report blamed no individuals for poor performance but did point out what it felt were a number of shortcomings in the fight against SARS by local agencies. For example, it stated that there were poor and ineffective links in the chain command in fighting the outbreak; there was inadequate contingency planning, poor infection control in the hospitals, and ill-trained hospital staff (SARS Expert Committee, 2003). The report contains 46 recommendations such as that the government establishes a center for health protection to insure there is ample capacity to deal with infectious disease outbreaks, and that a coordinated effort be made with health entities in the Pearl River Delta region.

The report was not well received by all. Hong Kong’s Legislature smelled blood and criticized the report for not naming people. Consequently, it created its own select committee to probe the SARS response deeper than what the Expert committee had done. Its report was released on June 5, 2004, and it was a bombshell. It named several senior Hong Kong officials and hospital administrators for dealing poorly with the SARS epidemic. For example, Yeoh-Eng-kiong, Hong Kong’s Health Minister was accused of downplaying the outbreak and withholding information from the public. Margaret Chan Fung Fu-chun, former director of health was accused of not taking the outbreak seriously enough. Leong Che-hung, chairman of the Hospital Authority was accused of not having made a contingency plan to deal with outbreaks of the SARS magnitude. Yeong and Leong quickly resigned their posts. Margaret Chan resigned before the report was issued to work for WHO. William Ho, chief executive of the Hospital Authority, also resigned. Ho had contracted SARS, but that did not save his job.

Restructuring Organizations

The cities that had outbreaks of SARS, engaged in internal evaluations of how they could better deal in the future with an infectious disease outbreak on the scale of SARS, or even larger as it might be the case if bird flu develops as feared. Hong Kong restructured its healthcare response system to a greater extent that did the other places. Following the recommendations from the outside organizational evaluations, it restructured its approach to health. Hong Kong formed from its health resources the Center for Health Protection (CHP). In many ways it is modeled on the U.S.’s CDC (Schlatter, 2004). It consists of several branches that were previously located in Hong Kong’s Department of Health.
Increased funding and manpower gives it an improved potential for action. CHP’s branches are: emergency and response, surveillance and epidemiology, infection control, program management, laboratory, and public health services. The public health services branch runs clinics for sexually transmitted diseases, HIV, and TB. So far CHP has been quite active. Of course, its mettle as well as the mettle of other such renewed organizations will be put to the test when the next major plague breaks out.

Another recommendation from the review committees was that Hong Kong should strengthen its ties with other Pearl River Delta region health organizations. That it did. Hong Kong, Macao, and Guangdong have formed a tripartite health group that has met several times since the SARS event. The purpose is to exchange information and work together to improve health in their region. This cooperation has become part of the broader growing cooperation among these communities in economic development and tourism. As is the case with Hong Kong’s CHP, the test of this cooperative organization will be when the next plague is upon them.

CONCLUDING REMARKS

Plagues have become global events. They may breakout far away but they may travel rapidly throughout the global network of cities. In this chapter, I have examined two theses. One argues that the politics of plague is not just at the international and national levels but also at the level of the local community. The other argues that the seriousness of plague’s impact becomes reflected in local actions including: protecting the system, evaluating plague-fighting performances during the outbreak and allocating blame, punishments, and rewards to local actors and officials, and restructuring local organizations to better meet future outbreaks.

My focus has been on SARS whose epicenter was Hong Kong and southern China; although cities in other parts of the world had to fight SARS as well. The data from these places support both theses for this one event. Subsequent plague outbreaks will provide further tests. These outbreaks could originate in Asia again. They could also originate in Africa, Latin America, or the Middle East. However, one thing is certain. Wherever plague breaks out, once it reaches a city in the global network, we all are at risk.

NOTES

1. The event/action approach seeks to answer the following questions: (1) What event happened or is happening, and how is or did it play out?; (2) What actors and
interests are involved and what are their goals, resources, frames, and strategies?; (3) What actions did they take and what were the anticipated and unanticipated consequences?; (4) How are this event and its actors linked to other events, actions, and/or processes?; (6) What does this event tell us about how society is organized and/or changing?; and (7) how does the analysis of this event contribute to the development of sociological explanation and generalization (see Schwirian, 2005).

2. There are several good and complete chronologies of the SARS outbreak of 2002–2003 available. These include the ones by Chiu and Galbraith (2004), WHO (2003), and Kamps and Hoffman.

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