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COVID-19 and studying disasters in Singapore

Wee Kiat LIM
Singapore Management University, wklim@smu.edu.sg

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Lim Wee Kiat *holds a PhD in Sociology, specialising in sociology of disaster, from University of Colorado Boulder, where he was a graduate research assistant at the Natural Hazards Center. His research interests lie at the intersection of risk, disaster, and organisation, investigating how organisations make sense of, prepare for, and respond to sociotechnical disruptions. Here he explores different social science approaches toward understanding disasters, and argues that we would benefit from research that expands beyond the social behaviour of the public to explore the roles of government, firms, nonprofits, and other organised actors.*

Dealing practically with the web of complexities that constitutes the COVID-19 pandemic requires going beyond public health and economic repercussions. Social science research on disasters can contribute to this. In this article, I will sketch three approaches drawn from sociology, psychology, geography, and political science.

"Concentrated in time and space": Functionalist view

The "classic" definition of a disaster is:

> *An event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses …that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented (Fritz 1961). (emphases mine)*

In this view, disasters are discrete events with clear, observable beginnings and ends. They punctuate the societal order and weaken social institutions, such as those concerned with maintaining close social ties (family), allocating and producing resources (economy), as well as socialisation and preparing members for economic labour (education). This has happened with the ongoing COVID-19 pandemic and the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic.

This functionalist (some call it realist) view remains dominant in disaster social research. It is easy to understand, bracketing activities neatly according to time and space, and highlighting

harm and loss of lives and property. It also implies an interventionist approach: authorities become the disaster manager to make a community or society whole again.

Closely related is the temporal or **"life cycle"** view of disaster, with four hazard phases connected by the disaster event (see Figure 1). The pre-disaster phases cover mitigation and preparedness. The post-disaster one covers response and recovery. The disaster itself becomes a "focusing event" (Birkland 1998), providing a window of opportunity to study change in society.

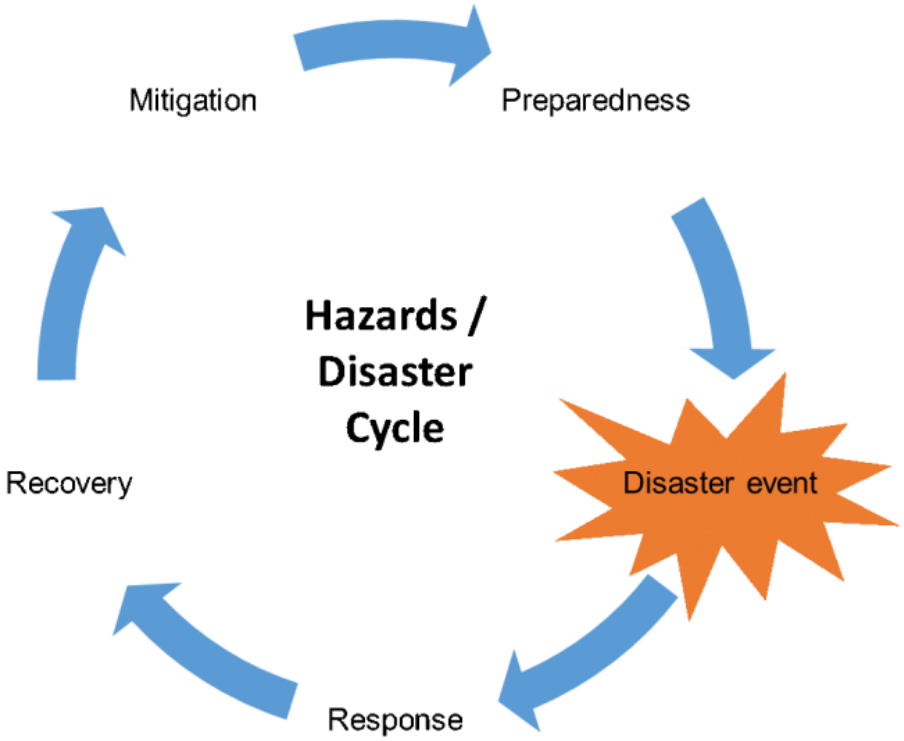

Figure 1

Mitigation refers to activities undertaken well in advance of disasters that may reduce their impact or even prevent their occurrence. Mitigation measures for infectious public health crises like COVID-19 would be public vaccination and regulations that pre-identify such diseases, to give public agencies the legal mandate to act decisively and swiftly (e.g. Singapore's Infectious Disease Act).

Preparedness refers to activities taken to ensure individuals and social collectivities, such as communities, schools, hospitals, firms, and public agencies, can respond effectively during disasters. They include contingency plans, drills, and exercises. In Singapore, examples of preparedness include the National Centre for Infectious Disease (NCID) that houses beds and facilities for outbreaks, the national response framework Disease Outbreak Response System Condition (DORSCON), and exercises such as Exercise Sparrowhawk II (a two-day nationwide

pandemic exercise in 2006, involving hospitals, polyclinics, GP clinics, schools, and border checkpoints like Changi Airport).

Response activities are performed to cope with the disaster as it unfolds, like administering first aid and conducting evacuation in accordance with contingency plans. Current examples are closing our borders, establishing safe distancing, and isolating cases in specialised wards in hospitals and the NCID. Response activities tend to be adaptive and improvisational, given how dynamic crises often are. For example, our Circuit Breaker (CB, or "lockdown with Singaporean characteristics") and Stay-Home Notices (SHNs) are new tools added to the COVID-19 response arsenal, beyond the Quarantine Orders issued during the 2003 SARS crisis.

The circuit breaker restrictions are among the response activities undertaken in Singapore in relation to the current pandemic. (Photo: Teo You Yenn)

Recovery actions take place in the aftermath of the disaster event, to heal from the trauma and restore some semblance of pre-disaster normalcy. They cover not only reconstructing the built and economic environment, such as relief packages to support hard-hit industries, but also repairing the social and psychological landscape, such as counselling. Completing the "cycle", or perhaps a "spiral", recovery then feeds into mitigation and preparedness when society readies itself for the next disaster. Similar activities may be undertaken across the cycle: for example, an individual could start seeking psychosocial counselling during response, and continue into recovery.

Most research focuses on the preparedness and response components, which are typically the preoccupation of formal organisations like governments and businesses, so there is more access and funding available. Recovery is less examined, mainly because, unlike preparedness and response, it usually lacks a definitive end point. Recovery may take months, even years. Some argue Japanese prefectures (e.g. Iwate and Miyagi) still remain in recovery after the 2011 Great Tohuku Earthquake. This may be instructive for Singapore as we look to exit a stretched CB period, following an already protracted response, and anticipating an even longer recovery.

One concept relating to response and recovery is **resilience**, which describes the ability to go beyond surviving the disaster, to thrive afterwards. Resilience is a *cheem* way of saying "building back better". "Building back" presupposes the pre-disaster "normal" state of affairs is not just familiar, but desirable. The "natural" state of society is stable and largely harmonious. But COVID-19 shows that pre-disaster society had serious problems. The outbreak merely threw longstanding socioeconomic and cultural fractures into sharp relief. In both practical and ethical terms, can and should we revert to "how things were"? What do we mean by "better", and who gets to decide? The pandemic affects different societies and their constituents in myriad ways, and how they perceive and experience it also varies.

Disasters as social constructions: An interpretivist approach

Social science disaster research has moved away from a purely functionalist conception of disasters as obdurate, physical events that are "out there" wreaking havoc on society. A more interpretive view holds that extreme events are not disasters in and of themselves, but become so only when refracted through social interpretation and social action. For example, tsunamis are not disasters when the waves smash against empty coasts and beaches, absent human settlement and built structures.

The social constructionist approach can help us understand how individuals and social collectivities are implicated in producing disasters (Tierney 2007). For example, heat waves are usually not considered disasters, though in some years they kill more people in the US than floods and hurricanes combined. The blistering Chicago heat wave of 1995 killed more than 700 in five days, mostly the ignored elderly poor who could not afford to own, switch on, or repair air conditioning (Klinenberg 2002). Events that harm or kill vulnerable or invisible communities often fly under the radar, especially when the afflictions are of a "slow burn" nature, such as chronic diseases.

The ongoing spike in dengue cases has been eclipsed in the public imagination by COVID-19, illustrating how the status of an event as a "disaster" has much to do with social perceptions and public reactions. (Photo: ProjectManhattan)

Singapore is experiencing a significant spike in dengue cases caused by a viral strain absent for nearly three decades, but its severity has been eclipsed by COVID-19. Whether an event constitutes a disaster has a lot to do with social perceptions of and public reaction to its occurrence (Abbott, Wallace and Beck 2006), and on risk perceptions of the activity (such as the risk of smoking versus nuclear power plant in Slovic 1992). Other contextual factors include the sense of "dread", or how people understand the negative consequences. Though dengue fever is deadly, it is also far more familiar, thus evoking a different "dread" profile from that of COVID-19.

The social constructionist approach never claims that disasters are imaginary. Rather, it emphasises the "social etiology of disasters" (Turner 1979) and attempts to reveal the social contexts under which events and activities are considered risky and dangerous, thus treated as disasters (Clarke and Short 1993, Douglas and Wildavsky 1982). This approach underscores that how a phenomenon is framed as a problem to be solved—and by *whom*—is equally important. This is not independent of the specialised knowledge that organised actors, particularly experts, bring to bear on it (Eden 2004, Knowles 2011, Stallings 1995).

Applying this lens to COVID-19 in Singapore suggests several productive lines of inquiry. For example, segregating cases according to arbitrary categories such as "community" and "work permit holders" may be bureaucratically expedient, but hardly random. They entangle other histories and social processes, stemming from deep-seated notions of who constitutes "us" and "them". Categories such as "expatriates" and "foreign talent" are folded into the "community" label in this instance, but these we/they lines will be drawn differently in other contexts.

An institutional approach to studying disasters

The institutional approach takes a more macro view. It is concerned with the production of disasters by a network of organised and established actors, independent of intent. With their permanence and power in influencing the network, "established" actors are often the bodies that select and define what counts as disaster risk (Clarke 1988, Stallings 1995). Their networked arrangements decide for the public what should be framed as problems (Strang and Meyer 1993), deserve to be addressed and, indirectly, which parties should bear any consequences.

Satellite image of damage at the Fukushima Daiichi power plant in Japan, where three reactors overheated and went into meltdown. (Photo: Digital Globe)

The partial meltdown at the Fukushima Daiichi nuclear power plant brought by the tsunami during the Great Tohuku Earthquake was an unintended consequence of the established network of relationships in Japan's nuclear industry. The post-disaster report by the Diet (Japan's legislative body) highlighted "a multitude of errors and wilful negligence" and "serious deficiencies in the response to the accident by TEPCO [owner of the Fukushima power plant], regulators and the government" (The National Diet of Japan 2012:9). For example, the seawall failed to protect the emergency power generator because the company and the regulator had negotiated to lower its elevation by more than half; the plant was designed and located close to the coast to facilitate shipping logistics, while downplaying tsunami risks; and TEPCO withheld critical information during the early stage of meltdown.

News reports identified the *amakudari* ("descent from heaven") system, Japan's variant of revolving door practices, as a major cause of weak enforcement of governmental oversight. Senior officials from the Ministry of Trade, Economy and Industry (METI) retired early to jobs in energy firms (e.g. TEPCO), where they were regulated by former ministry colleagues, who were also often ex-classmates or fellow alumni of nuclear engineering programs. A tight network of professional and personal ties between regulator and the regulated undermined whistle-blowing (Onishi and Belson 2011). The regulator, Nuclear and Industrial Safety Agency (NISA), was organised under METI, whose mandate was to promote nuclear power. Given these institutional arrangements, the failure of the Fukushima Daiichi plant could be read as a "disaster by design" (Mileti 1999)—a matter of *when*, not *if*.

Disasters with similar sociotechnical properties are amenable to institutional analyses. Such "social autopsies" (Klinenberg 2002) reveal that disruptions such as "one-in-a-hundred-years" floods, transboundary air pollution, island-wide blackouts, and massive train breakdowns, whether stemming from natural triggers (e.g. torrential rain, El Niño effect), human-made ones such as mistakes or misconduct (Vaughan 1996, Vaughan 1999), or a mix of both, are seldom random affairs or one-off accidents. Instead, they are by-products of how social practices, processes, and organisational structures interweave with complex technological systems, such as smart grids, financial IT systems, and flood drainage infrastructures. The term "normal accidents" characterises how such events are becoming more inevitable, given the increasingly complex and tightly coupled nature of our sociotechnical systems (Perrow 1984, Perrow 2011).

Singapore's port. The complex nature of today's global supply chains are a key factor in how the COVID-19 pandemic has played out, which supports a characterisation of it as a sociotechnical disaster. (Photo: William Cho)

The COVID-19 pandemic can be read as a sociotechnical disaster, given how much of it rests on the infrastructure of advanced systems—genome sequencing, cyber-surveillance, digital case tracking, global supply chains—as well as the expert advice of scientists and judgement of policy elites. But the contests around mask wearing, locking down communities, and vaccines clearly demonstrate that risk distribution in society are trans-scientific (Slovic 1992, Weinberg 1972), and cannot be answered by science alone. The focus on public risks, while a scientific endeavor, is also a political effort to harness public opinion, with growing awareness that the "republic of science" (Polanyi 1962) is not only populated by experts, but "lay" persons as well.

While the trigger for the pandemic is biological, employing an institutional lens requires identifying the actors involved in this complex phenomenon, which is at once, economic, social, cultural, and political. The Singapore case of foreign worker infections involves not just scientists and medical/public healthcare professionals, but other actors too: the regulator (Ministry of Manpower), non-profits, dormitory operators, labor brokers and agents, property developers, construction companies, and other employers. How they interact (or fail to) with one another contributes to infection rates among migrant workers. From an institutional perspective, an audit of the organised actors involved in this problem of "the city of two outbreaks" already quickly reveals how behavior and world views conspire, willingly or unwittingly, to "design" this façade of the disaster.

Conclusion

The unfolding COVID-19 disaster is a social as well as scientific phenomenon, requiring social researchers—sociologists, psychologists, geographers, political scientists, and others—to employ a multidisciplinary lens to analyse the problem and devise effective responses. Functionalist, social constructionist, and institutional perspectives offer three such lenses, with which we can study the differential impacts on various social groups in our communities, whether along racial/ethnic lines or socioeconomic divisions, or collectivities that have been "constructed away" (as in the "tale of two outbreaks"). Researchers should expand beyond the social behavior of the public to explore the roles of government, firms, nonprofits, and other organised actors. Collectively we can build a more complete and complex picture of how the pandemic came to be in Singapore, how it unfolded, the repercussions on our society, and what we could do the next time a similar event occurs.