Pandemics and Emerging Infectious Diseases

The Sociological Agenda

Edited by
Robert Dingwall
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Table of Contents

Series page

Title page

Copyright page

Notes on contributors

1: Introduction: why a *sociology* of pandemics?

- Acknowledgements

2: Public health intelligence and the detection of potential pandemics

- Introduction
- The sociology of public health (SPH)
- Conceptualisation and actualisation of pandemics
- PHI: sites for future research
- Conclusion
- Acknowledgements

3: West Nile virus: The production of a public health pandemic

- Foucauldian theories of power
- Methodology
- PHAC's production of the WNV

Conclusion
Acknowledgements

4: Who's worried about turkeys? How ‘organisational silos’ impede zoonotic disease surveillance

Introduction
Methods
Institutional interaction and organisational culture
Priorities, jurisdictions and silos
Forging systemic connections
Conclusion
Acknowledgements

5: How did international agencies perceive the avian influenza problem? The adoption and manufacture of the ‘One World, One Health’ framework

The emergence of ‘One World One Health’
Theoretical backgrounds and methods
Competition between the fragmented frames: 2003–2008
The convergence on the OWOH policy framework: 2008 to the present
Functional consensus despite diverse interpretations
A double-edged policy framework
Acknowledgements

6: Global health risks and cosmopolitisation: from emergence to interference

- Introduction
- Materials and method
- Global risks and cosmopolitisation
- Avian flu: a classic and a modern risk
- Asia, Vietnam and cosmopolitan modernities
- Relations of definitions, relations of domination: the framing of avian flu
- Global risk instrumentalisation: from local to international issues
- A transformative cooperation for Vietnam?
- Conclusion
- Acknowledgements

7: The politics of securing borders and the identities of disease

- The cases
- The problematic
- The European Union
- Protecting borders
- Explaining variations in screening across diseases
- Disease identities
- Disease identities and the making of policy
- Europe and the collective imaginary
- Conclusion
- Acknowledgements

8: The return of the city-state: Urban governance and the New York City H1N1 pandemic

- Introduction
- The organisational and ideological context for pandemic planning
- The event: H1N1 in NYC – spring and fall 2009
- All-hazards emergency preparedness and pandemic response
- Implications for health governance
- Acknowledgements

9: The making of public health emergencies: West Nile virus in New York City

- Introduction
- Methods
- Conclusion
- Acknowledgements

10: Using model-based evidence in the governance of pandemics

- Introduction
- Modelling pandemics: How do models tell their stories?
- Accommodating uncertainties in modelled narratives of pandemics
- Towards narratives of governance

Acknowledgements

11: Exploring the ambiguous consensus on public–private partnerships in collective risk preparation

Introduction
Companies: from ‘risk-generator’ to ‘partner’ in dealing with risks
Pessimistic literature on the potential of a public–private partnership (PPP)
Methods and data
French preparation for the pandemic
Discussion and conclusion
Acknowledgements

12: ‘If you have a soul, you will volunteer at once’: gendered expectations of duty to care during pandemics

Acknowledgements

13: Flu frames

Introduction
A brief history of a contested term
Framing the flu
Flu frames
Audiences and flu frames
Conclusion: Frames, moral panics, and epidemic psychologies
Acknowledgements

14: Attention to the media and worry over becoming infected: the case of the Swine Flu (H1N1) Epidemic of 2009
- Introduction
- Theory, hypothesis and methods
- Findings
- Concluding remarks

15: Why the French did not choose to panic: a dynamic analysis of the public response to the influenza pandemic
- Introduction
- Sequence analysis of health behaviour during the influenza pandemic
- Effects of perceptions on health behaviour during the pandemic: state or change?
- The 1918 Spanish flu: an anchor for the future influenza pandemic?
- Conclusion

Index

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Robert Dingwall, Lily M. Hoffman
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1

Introduction: why a *sociology* of pandemics?

Robert Dingwall, Lily M. Hoffman and Karen Staniland

This collection explores what sociology has to say about pandemics and emerging infectious diseases at a time when some would claim this topic to be the increasingly exclusive terrain of microbiologists, virologists and practitioners in public health.

Such assertions, we argue, betray a basic lack of understanding of how medicine and biomedical science relate to the world in which they exist. Both are social institutions. This means that they are carried out in social organisations by people who are socially recognised as competent practitioners within a division of labour; that they are delivered through other organisations and through social interactions with innumerable partners. Furthermore, problems come to medicine and biomedical science along socially constructed pathways and are delivered into the world by other pathways: knowledge or technology transfer is a social process. *A focus of attention and resources on medicine and biomedical science, then, tells less than half the story of how societies identify new diseases, how they respond, and what the consequences might be*. In bringing together current work on different aspects of emerging diseases, this monograph also alerts sociological readers to the rich scholarly potential of this area. Emerging diseases are sources of instability, uncertainty and even crises that

can make visible features of the social order ordinarily opaque to investigation. As societies respond to these challenges, features that we have taken for granted suddenly become transparent. For a moment, our own world can become anthropologically strange. This is at the core of the contribution made by the sociological imagination to policy and practice, of understanding how social arrangements can, and must, change when biological environments change.

The sociological relevance of new diseases was identified for readers of *Sociology of Health and Illness* by P.M. Strong's (1990) paper on ‘Epidemic Psychology’. This title is rather ironic since the paper concerns neither epidemics nor psychology. With the brio for which he was justly celebrated, Strong explored the parallels between what would now be defined as pandemics caused by two emerging infectious diseases: HIV in the 1980s and the Black Death of fourteenth century Europe. Although subsequent research has established that HIV originated in transmission from simian to human populations in West Africa during the early twentieth century (Sharp and Hahn 2011), its emergence and rapid spread across the developing world during the 1980s generated a profound sense of public alarm, particularly in the absence of any effective therapy. This response, Strong argued, resembled that of European populations to the virulent form of bubonic plague that raged across their continent around 1350 (Haensch *et al*. 2010). As institutional memory of an earlier outbreak, Justinian's Plague (541–542 CE), had long been lost, this disease also appeared as a new affliction, with no history, no explanation and no remedy. Both pandemics seemed to threaten the very survival of the societies in which they emerged.

How did these societies react? Although Strong refers to ‘social’ or ‘collective’ psychology, his intended audience is

sociological: psychology here is used in the sense of Tarde (1901), Park (Elsner, Jr. 1972) or Blumer (1971, McPhail 1989) in their studies of collective behaviour. Strong proposes a sociological study of societal responses to an existential threat. In his own words:

> This essay is a first attempt at a general sociological statement on the striking problems that large, fatal epidemics seem to present to social order; on the waves of fear, panic, stigma, moralising and calls to action that seem to characterise the immediate reaction … Societies are caught up in an extraordinary emotional maelstrom which seems, at least for a time, to be beyond anyone's immediate control. Moreover, since this strange state presents such an immediate threat, actual or potential, to public order, it can also powerfully influence the size, timing and shape of the social and political response in many other areas affected by the epidemic
>
> (Strong 1990: 249).

Unlike atavistic psychologies which assume that disorder results from primitive emotions unleashed by such threats, Strong argues that apparently bizarre behaviour may be entirely intelligible once it is understood how the world is routinely stabilised by language and social institutions. Emerging diseases disturb our assumptions of a known universe of risk. A new hazard disrupts our established strategies for managing our everyday lives. What appears as irrational may be a locally rational response to uncertainty, or at least an attempt to use locally available resources to re-establish sufficient certainty for practical action.

Underlying Strong's approach is his use of interactionist traditions in US and European sociology – he explicitly pairs Mead and Schutz as his sources of inspiration. These stress the inherent formlessness of the world: it acquires order as the outcome of human actions that assign meaning to

events through the socially shared medium of language and the institutions that have evolved to manage and stabilise sources of uncertainty. New diseases are not self-evident and do not direct the societal response. They must be defined by those agents and institutions that are socially licensed to distinguish disease from other kinds of deviance. This definition, in turn, provides a basis for societal mobilisation. Strong focusses on two particularly dramatic cases. At the time he was writing, HIV had only just become stabilised as a result of rapid scientific work that had produced agreement on the identification and nature of the virus in 1986. In the absence of closure by those institutions licensed to declare a matter settled under the impersonal authority of science, rival narratives had competed for authority in much the same way as occurred in the fourteenth century. Was HIV some kind of divine punishment for sin or possibly an evolutionary response to the abuse of human bodies by the consumption of unnatural chemicals or the intensification of non-reproductive sexual practices? The Black Death seemed similarly incomprehensible, particularly as the religious authorities, who were then the main source of closure, were even less well placed than twentieth century scientists to establish a definitive naming and control strategy. In the end, it simply burned out, although outbreaks recurred until the 1750s, and, as Strong remarked in seminar presentations, were accepted as periodic inconveniences that would kill a lot of people but had proved unlikely to bring about the end of humanity.

Thirty years later, however, it has become clear that the shadow cast by HIV, along with subsequent outbreaks of infectious diseases, threats of biological terrorism, and the new vulnerabilities invoked by intense globalisation, prompted a concerted effort to constrain the possibilities for future disorder by what we might call ‘stabilisation in advance’. By this we mean the creation of actor-networks

that are primed for rapid mobilisation to manage ‘known unknowns’. Considerable investments have been made in surveillance, at supra-national, national and subnational levels, to give ‘early warnings’ of new diseases, to plan for the consequences, and to enhance the resilience of institutions faced with an outbreak. The threat of disorder is never far from the thoughts of those involved – but it is seen as potentially manageable with the resources of a modern society. ‘Waves of fear, panic, stigma, moralising and calls to action’ are thought to be containable with the application of science, although they may still be invoked in arguments between interested parties.

The collection opens with a group of chapters focussing on the social production of new diseases. By this we mean the processes that turn a disruption of the social ordering of relations between humans and their biological environment into a phenomenon that has been named, classified and assigned a causal account from microbiology or virology. French and Mykhalovskiy discuss the attempts by public health agencies to identify such events as they occur, if not beforehand. Their approach is strongly influenced by Actor-Network Theory (ANT), which also draws inspiration from Tarde's collective psychology (Latour 2002). They characterise public health as an actor-network that creates disease events as the outcome of a joint enterprise that mobilises both human and non-human actants. Emerging diseases are co-constituted by the social and the medical. An emerging infectious disease must marshal and enrol a complex assemblage of scientists, doctors, planners, laws, patients, vectors and the like in order to be recognised: influenza could not fully accomplish this until the 1930s when viruses succeeded in getting themselves distinguished from bacteria, which explains many of the problems encountered in managing both the 1889–90 and 1918–19 influenza pandemics.[1] Gislason approaches the same issues

within a Foucauldian framework, which has been widely adopted by the sociology of public health. ANT and Foucauldian analyses take very different positions on the nature of power in society: Latour (1987: 223) declared, ‘We need to get rid of all categories like those of power, knowledge, profit or capital, because they divide up a cloth that we want seamless in order to study it as we choose’. In contrast, Gislason sees the constitution of West Nile Virus as an exercise of power by the Public Health Agency of Canada, which articulated a particular reading of the disease, selected a preferred authoritative determination of its nature, and of appropriate interventions, and ultimately normalised it as a routine event in the Canadian biosphere. West Nile Virus is also the focus of Jerolmack's contribution, which examines the problems of establishing ownership of a disease. One characteristic of recent emerging diseases has been their movement from animal to human populations. Animals, or in this case birds, have, however, traditionally been the focus of surveillance systems that work quite independently from those directed at humans, and which tend to concentrate on a limited range of species determined by reference to their economic value. Jerolmack also draws on ANT, to describe the difficult process by which West Nile Virus came to be distinguished within the animal disease reference system and then passed into the human public health system, as a hybrid struggling to reconstitute well-established but segregated organisational networks.

A second group of chapters examine these organisational networks. Chien pursues issues identified by Jerolmack to discuss how international agencies concerned with human health (World Health Organization), agriculture (Food and Agriculture Organization) and animals (World Organization for Animal Health) tried to establish a shared framing of the potential threats from viruses in poultry. These were seen as a likely source for a new influenza pandemic but

represented an immediate threat to economically valuable birds. The result was the ‘One World, One Health’ framework, which was able to serve as a ‘boundary object’ (Gieryn 1983) that could, at some level, unify the different agencies' efforts, at the cost of a high degree of abstraction and uncertainty in what would constitute implementation. Implementation issues are central to Figuie's case study of Vietnam. The country was seen as a potential epicentre for the emergence of a form of H5N1 influenza capable of easy transmission between humans and, hence, a global pandemic threat. Indeed, virtually the entire international surveillance effort prior to 2009 focussed on South East Asia and South China, assuming that the interactions between human and bird populations in that region were the most likely source of the next pandemic influenza strain. Figuie shows how actions on the ground within Vietnam became entangled with internal political tensions between localism and centralism in government and with an external agenda to complete the country's international rehabilitation following the defeat of the USA in 1975.

Interactions between global and local politics in the management of infectious diseases are further explored by Taylor in comparing responses to HIV by different European states. She notes how Germany, France and the UK manage health threats associated with international migration. All three have a legacy of nineteenth century legislation that empowers them to screen migrants for tuberculosis and to use the results as grounds for quarantine or refusal of entry. However, all three declined to adapt these powers to regulate the movement of people with HIV/AIDS. This, she suggests, reflects the emergence of HIV/AIDS within a context where transnational human rights was a potent discourse, particularly when allied to the project of creating a common European citizenship. This created a collective imaginary within which HIV acquired a different kind of

identity from tuberculosis. Such ‘disease identities’ characterise sufferers in particular ways that endure over time and inform public policies. Hoffman pursues the national/local interplay in a study of New York City's response to H1N1 influenza. Referencing debates within urban sociology about the relative importance of supra-national organisations, nation-states, and global cities, and drawing upon Weber's classic definition of the city as unit of defence, she looks at NYC's response to the 2009 H1N1 outbreak. After 9/11 the reframing of infectious disease as a national security threat under a standardised ‘all-hazards’ emergency preparedness strategy, contributed to the renewed importance of the city as key actor. When the ‘one-size-fits-all’ model based on a worst-case scenario failed to provide guidance, the New York Department of Health and Mental Health seized the initiative and imposed its own response strategy. While there may have been important local factors that contributed to the Department's success, Hoffman nevertheless demonstrates that the enactment of public health interventions cannot be simply read off from a national disaster management template: the return of epidemics and the need for defence requires a degree of local autonomy. Also looking at New York City but through the earlier case of West Nile Virus, Whitney and McCormick echo issues identified by French and Mykhalovskiy and by Gislason. Their approach, however, is organisational and institutional, emphasising the impact of emergency powers and the conflict generated by their use, in this case to impose a pesticide spraying regime intended to control the virus's insect vectors. The resulting controversy challenged the legitimacy of the governance regime, with its incentives to adopt this aggressive strategy in preference to more targeted interventions. They note how this questioning led the federal government to respond with intensive investments in attempts to generate legitimacy.

Three chapters look at more detailed aspects of policy implementation. Mansnerus draws on the growing body of sociological work on the rise of quantification as a feature of the contemporary world. She focuses on modelling as a technology for legitimating particular versions of the future as the foundation of current policies and investments. For all their apparent precision, models are essentially a way to black-box a range of issues and uncertainties and produce an authoritative narrative that temporarily stabilises the future. They are a latter-day version of oracles, divination or clairvoyance, deriving their societal licence from science rather than from religion. Steyer and Gilbert investigate the implications of the contemporary movement to frame governance as a collaboration between public authorities and private interests. Their chapter explores the implications of the well-recognised institutional and cultural problems in achieving effective partnerships. Companies struggle with legal and reputational issues, while governments find that they cannot fully delegate responsibilities for public protection. The result is a weak form of co-production that is likely to fail in the crisis it is intended to manage. Godderis and Rossiter take a historical turn to highlight the role of gender in societal responses to pandemic disease. In their short note, they document appeals to women to volunteer as nurses during the 1918 influenza pandemic: their gender placed them under a moral duty to care, regardless of the personal risks or the implications for their families. The nature and limits of the duty to care were particularly exposed during the SARS outbreak in 2002–03, much as they had been during the early years of HIV/AIDS, and became a concern for pandemic response planning (Ruderman *et al*. 2006). Although not fully tested by the relatively mild nature of the 2009 H1N1 influenza pandemic, there was considerable uncertainty about whether social and organisational change might have weakened the force of appeals to this supposed

moral duty. How would the conflicting claims of family and profession be resolved by healthcare workers asked to care simultaneously for both and to manage the risks of transmitting infection in either direction?

Finally, three chapters examine public reactions to the 2009 H1N1 pandemic. Staniland and Smith review an international range of studies of media reporting on this pandemic. Although their findings are consistent with Strong's arguments about the initial inflammation of societal anxieties, they show that the difficulty in identifying an unequivocal ‘folk devil’ quickly diffused these fears. Unlike HIV/AIDS' early identification as a ‘gay plague’, H1N1 was not easily associated with a consistent cast of villains: it was introduced to the UK via people who had been on expensive package holidays in Mexico. They were not an already stigmatised group who could be further accused of propagating disease. The speed of the issue cycle in news media also meant that representatives of order – scientists, doctors, policymakers – could address and dampen anxieties before panic could set in. Of course, it should be acknowledged that H1N1 proved to be a relatively mild infection and that it was represented as the return of something that science knew about rather than something wholly unfamiliar like HIV. Authority won this framing contest but a similar result may not be guaranteed in the future. This analysis is extended in the short note by Mesch *et al.*, which examines US survey evidence on public responses to media reports. While methodological limitations circumscribe their conclusions, the analysis shows a positive relationship between media consumption and worry, which is accentuated by social status: women, older people and those with larger families became increasingly concerned between May and August 2009. The rise among older people seems particularly worthy of further investigation, given that it emerged over the same

period that they were less at risk than children, probably because of some residual cross-immunity from previous influenza pandemics. Sherlaw and Raude show the value of asking counterfactual questions in social science with their inquiry into the absence of panic among the French population. They argue that this was, at least in part, the result of media and policy framing that had anchored future influenza pandemics in the context of the 1918 pandemic. Since 2009 fell so far short of this dramatic possibility, its potential for engendering panic was correspondingly limited. In the absence of popular mobilisation, however, French people showed themselves unwilling to take up vaccination or engage in behavioural measures intended to interrupt the transmission of the virus. There is, Sherlaw and Raude conclude, a fine line between preparedness and alarmism, of generating enough public concern to engage in self-protection and provoking panic. Could the legacy of the perceived exaggeration in invoking the 1918 experience as a template for the 2009 pandemic be a loss of trust in future calls for action by public health agencies? Do they risk the fate of the boy who cried ‘wolf’ too often?

The chapters in this collection cover a diverse range of countries and diseases. From a sociological perspective, what is striking is the extent to which different emerging diseases provoke common reactions, which are only slightly modified by national environments. Figuie's discussion of central/local tensions in Vietnam is replicated by the studies of New York. Jerolmack's account of the difficulties between the surveillance systems targeted at human and animal diseases is replicated in an as yet unpublished study of Ghana and Malawi.[2] These are not, however, the panicked reactions discussed by Strong or still expected by so many policymakers. Several contributors suggest explanations: the news cycle has accelerated so much that this initial phase of societal reaction flashes past. Public health

systems have established better systems of surveillance, early warning and crisis management so that the orderliness of society can be more rapidly re-established. Moreover, the diseases themselves have proved to be containable, susceptible to conventional bioscientific means of analysis and control.

This collection moves beyond the classic sociological focus on societal reactions and the social construction of disease. The reappearance of infectious disease in an intensely globalised arena, marked by supra-national as well as national and local actors, has raised many other issues, including the impact of scientific modalities on uncertainty and risk, the interplay of public health and national security, the dynamics of health governance, and the gendered division of caring labour. It goes without saying that each of these, in turn, raises provocative questions for policy and implementation. In the 21st century, a focus on pandemics and emerging infectious disease gives new insight into evolving social structures and processes. This collection challenges sociologists to contribute further to the public and policy agenda – and questions the narrow thinking that would seek to 'leave it all to biomedical science'.

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Notes

1 This approach was suggested by Gearóid Ó'Cuinn.
2 This draws on discussions with Evanson Sambala.

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2

Public health intelligence and the detection of potential pandemics

Martin French and Eric Mykhalovskiy

Introduction

In what is by far the most commented-upon post on the *Public Health Matters Blog*, Ali S. Khan, Director of the Office of Public Health Preparedness and Response at the United States Centers for Disease Control and Prevention (CDC), instructs readers on how to prepare for a zombie apocalypse – 'That's right, I said z-o-m-b-i-e a-p-o-c-a-l-y-p-s-e' (Kahn 2011). This fanciful piece of health communication hooks readers in with a light-hearted take on the living dead before delivering a more serious message about how to prepare for all kinds of emergencies, ranging from natural disasters to disease pandemics, and even for the zombie apocalypse. If the comparatively huge number of comments on this post are any indication, Kahn's message has resonated with a net-savvy audience.

Beyond disseminating the ideas and discourse of emergency preparedness, Kahn's blog post reflects an emergent effort to cultivate electronic communication about health events. As such, it illustrates a key and novel dimension of contemporary public health intelligence (PHI). A central aim of contemporary PHI is the detection of health