Introduction

The Time of Epidemics

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The introduction to this special section of the journal argues that while it is widely accepted today that infectious disease epidemics are the result of long-term and complex social, ecological, economic and political processes, outbreaks are, more often than not, experienced on the ground as unexpected eruptions. This introduction defends the position that the dialectics between the evental and processual aspects of epidemics are good to think with anthropologically, and points to the consequences of this for an analysis of epidemic temporality in the context of emergent infectious disease discourse and intensifying biopolitical surveillance aimed at averting the 'next pandemic'.

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Instead of delivering the climactic moment of the Last Judgement, pestilence lingers on, generating a limbo of common suffering in which a tenuous and moribund but all-embracing body politic springs into being.
(Gomel 2000: 406)

In the last fifteen years, anthropologists have been producing a growing body of work on infectious disease epidemics, which, with the notable exceptions of malaria and HIV/AIDS, had hitherto scarcely preoccupied the discipline. Avian influenza, severe acute respiratory syndrome (SARS), Ebola and AIDS now all have monographs or edited volumes dedicated to them (e.g., Kleinman and Watson 2006; Hewlett and Hewlett 2007; Hyde 2007; Keck 2010), contributing to a nuanced anthropological discussion of recent outbreaks across the globe, as well as to an anthropological critique of biosecurity discourses and practices around emerging infectious diseases and projected or imagined pandemics.

This special section of the journal hosts five anthropological articles on epidemics and epidemiology and a response by a world-leading epidemiologist. Rather than simply providing more case studies of infectious disease outbreaks or prevention and containment measures, however, these articles respond to an analytical question that has remained neglected in medical anthropology and the medical humanities as a whole: what is the relation between the epidemiological reality of outbreaks as

conditioned by long-term social, political, economic, demographic and ecological factors, and the empirical reality of outbreaks as ruptures of the social, political and economic continuum?

It is perhaps a commonplace remark today that anthropology has privileged the everyday, the continuous and the seamless. When it comes to public health, this processual and contextual approach has been epitomized by Merrill Singer's syndemic theory: a 'critical systems approach to public health' which has come to be one of anthropology's most comprehensive and influential methodological engagements with infectious disease. 'A syndemic', Singer writes, 'involves a set of enmeshed and mutually enhancing health problems that, working together in a context of noxious social and physical conditions, can significantly affect the overall disease burden and health status of a population' (2009: xiv). Building on older problematizations of public health crises as the result of interdependent medical factors, Singer renders this systems approach sociologically relevant, by proposing that epidemiology should shift its focus from a unicausal rationality towards the interlinking of social, political and economic processes that lead to outbreaks. Discussing issues closely studied by anthropology, Singer notes: 'From the syndemics perspective, contemporary threats to the health of the poor, including violence, substance abuse, malnutrition, and HIV/AIDS, are not *concurrent* epidemics in that they are not completely separable phenomena. Rather they emerge among the poor as closely intertwined threads in an often tattered fabric of their daily lives' (ibid.: xiv).

Seen as syndemics, epidemic outbreaks can be approached from an anthropologically nuanced perspective, which takes into account multiple levels of agency and responsibility concerning the control and prevention of a given epidemic. Singer's approach effectively de-medicalizes epidemics and opens the field for an anthropological approach to infectious disease outbreaks which, to use Vigh's terms, is capable of treating them as both 'crises in context' and 'crises as context' (2008). Yet this breakthrough in understanding infectious disease has a blind spot, which has so far remained unacknowledged and unexamined by anthropology. What syndemic theory and other, less overarching, processual approaches to epidemics seem to neglect is a crucial phenomenological dimension of outbreaks: that these are, more often than not, experienced by their victims as ruptures in social, political and economic life; that they are experienced not as long-term processes but as short-term catastrophic events, which are often attributed not to a multiplicity of causes, but to a single or unilateral cause.

It is worthwhile, as a starting point, to consider whether this double nature of infectious disease outbreaks can be tackled in the way that David Arnold problematized famine. 'On the one hand,' Arnold claimed, famine 'is clearly an "event"', in the sense that it 'occupied a finite span of historical time and human experience' but also in the sense of its exceptionality, hence representing 'a negation of all that is normal and familiar' (1988: 6). From this perspective, although economic, sociological or anthropological elements composing a famine always already exist to some extent in a given society (or in a section of it), it is their working together within a specific time and space framework that leads to a phenomenon which is exceptional in both scale and intensity: 'famine signifies an exceptional (if periodically recurring) event, a

collective catastrophe of such magnitude as to cause social and economic dislocation' (ibid.: 6). A famine is, from this point of view, an event in so far as it leads to a rupture in 'customary patterns of work and subsistence' and to a major disruption of moral norms and social interaction and behaviour (ibid.: 6–7). However, Arnold argues, if famine is to hunger what an epidemic is to disease, it also has a significant structural aspect, since it can never be said to be a totally unexpected phenomenon, or one that can be conceived or analysed detached from long-term socioeconomic and demographic factors and processes: 'although famine has meaning and context as an "event" in itself, distinguishable from what proceeds and follows it, it is seldom an entirely isolated episode or a purely chance misfortune' (ibid.: 7). Following Nicole Ball (1976: 520), who saw the interaction between these factors and processes as creating 'the conditions for disaster', which rendered 'a breakdown at some point inevitable', Arnold challenges notions that famine is caused by a single factor such as drought, claiming that the latter is simply an event: a catalyst that 'brings these deep-seated and structural problems to a head' (1988: 33). What is needed then, in approaching famine, Arnold argues, is to study the 'meeting and intermingling of event and structure', so as to ask what constitutes it as a social phenomenon (ibid.: 8).

What is problematic in the application of this dialectical approach to epidemics is that unlike famine, the eruption of an infectious disease outbreak is in many cases an experience which does not simply differ from everyday life in 'scale and intensity', but involves a radically different ontological order – introducing a hitherto non-existent mode of being, a being which is at one and the same time *pathological* and *infectious*, as the central transformative factor of social life. During an outbreak of plague, cholera, typhus or SARS, social and economic life comes to a standstill for a period of time that may vary from a few weeks to several long months. Depending on the mortality rate and the basic reproduction number (R_0) of the infection, entire communities may be wiped out; populations rendered so thin and frail that they can no longer maintain production and social reproduction. Yet unlike famine this does not remain a place-specific phenomenon, but may spread to nearby areas, as vectors spread or as people try to escape their blighted homelands. One may conceivably run away from famine, yet when one runs away from plague, he or she is more likely to carry the disease and contaminate whatever community offers shelter to the stricken. Contagion severs social bonds, renders human-to-human contact lethal and solidarity as fatal as trade. No doubt, in order for an outbreak to occur and to assume such devastating proportions, all the 'conditions for disaster' must be in place. Yet after the proverbial tipping point is reached, what matters to those experiencing the outbreak is not the past but the brutal present and how to survive it.

It is at this point then that, in spite of its often unbearable ideological load, Alain Badiou's work (2007) may be useful to anthropology, at least as a point of departure. For in his theory of the event, Badiou asserts not simply the singular force of such transformative occurrences, but that it is the truth-for-all imagined to derive from this rupture that inter-constitutes the event and its subject; a subject that arises out of making the rupture thinkable and intelligible in terms of its proclaimed truth. Anthropologists stand to benefit less from examining epidemics as events per se than from approaching the subjective relation to a given outbreak *as an event*. What is interesting from this

perspective is how given subjects experience an outbreak as a rupture and how this affects the way they act in the context of an epidemic, and at the same time how these subjects are constituted in relation to the event.

From an anthropologically nuanced perspective, Fabienne Martin (2011: 91) has argued that the event of a disease ‘invites us to examine, more than the event in itself, a relation to the event’. When examined on an individual level, this approach has the benefit of challenging the perception of the event as necessarily linked to the occurrence of the first symptoms of a disease. In examining the temporalities of rupture in the context of the Gandhi Kushth Ashram of Jodhpur in contemporary Rajasthan, Martin argues that to see the appearance of leprosy in an individual as the defining event would be to ignore the process that leads from that traumatic moment to the status of total detachment or separation. Rather than consisting in one’s shock and displacement before the appearance of the first signs of leprosy, what is exceptional in this case is that in spite of the passage of time no familiarization of the patient with his or her symptoms or with the change in the senses and the surface of the body occurs. ‘A failure of understanding and inability to grasp the event’ (ibid.: 92), it is this experience, which is all the more an *inexperience*, this non-coincidence in the temporality of the disease’s synchronic rupture and its diachronic phenomenology, that constitutes the patient as a singular subject vis-à-vis the event of leprosy.

What is then crucial for an anthropological enquiry of the evental and processual aspect of epidemics is the examination of their temporality, as both experienced and performed by implicated or constituted subjects. Going beyond the – otherwise useful – problematization of crisis, a notion increasingly employed in the discussion of public health problems (Parkin et al. 2013), we need to begin by acknowledging that infectious disease outbreaks operate on two defining and distinct temporal registers: first, the biological temporality of the pathogen and its relation to hosts and vectors, consisting in factors such as disease incubation period, time-dependence of infectivity, infected cell lifespan and viral growth rate; and second, the sociological temporality of the disease, consisting in ways in which the starting point, progress and termination of the outbreak are understood, experienced and made sense of. This is clearly not a dichotomy between medical time and lay time, as biomedicine is always already positioned in the second register, as a meaning-producing discipline. And yet this admission does not need to lead us to an analytically facile argument that the biological temporality of infectious disease is nothing but a cultural construction. Such a statement, made from the privileged point of the non-infected (or the not-yet infected), can do nothing to advance our understanding of the social ecology of disease, whilst at the same time it renders the critique of regimes of epidemiological knowledge ineffective, reducing them to yet another footnote to the wider, nihilistic enterprise of cultural relativization.

The question of the evental and processual nature of epidemics is good to think with, from an anthropological perspective, not only because it provides new opportunities for the examination of such classic epistemological problems, but primarily because it conceptually grounds the latter in a temporal-subjective register which resonates with, and potentially challenges, hegemonic notions such as the ‘emergence’ of new pathogens or ‘the coming plague’, made popular through medical journalism and films like *Outbreak*, *Contagion* and *World War Z*.

In the articles that follow in this special section, the question of epidemic temporality is first explored by Carlo Caduff who examines how technological mediation in the digital era, such as data-mining, extensively used by epidemiologists today, renders epidemic events shared objects of knowledge. Examining new methods of monitoring disease, such as syndromic surveillance and 'real-time' infection tracking, he launches an epistemological enquiry into what constitutes a significant, investigable event within the political and technical environment of epidemiological intelligence. Caduff points out, too, that this regime of knowledge is structured around a promise of immediacy; 'a promise of instant information about the unexpected eruption of epidemic events', which is, however, itself the product of hyper-mediated human-technological workforce practices. Discussing 'early warning systems', such as the World Health Organization's Global Public Health Intelligence Network, which scans the internet harvesting potentially actionable information about outbreaks-to-be, Caduff examines the generation of false signals as 'false positivities': health emergency signals generating internet searches about symptoms which then feed back into the surveillance system, hence generating the impression of a real outbreak in hand.

This process whereby 'communication itself becomes contagious' has a range of affinities with processes discussed by Frédéric Keck in his article on epidemiological sentinels and practices of 'early detection' in Hong Kong since the 1997 Avian Flu crisis. Asking what leads a zoonosis to be considered and acted upon as an event, Keck explores notions of social causality implicated in the outbreak narrative, to use Priscilla Wald's term (2008), of animal-to-human infections like avian flu. He argues that, within current biosecurity regimes of knowledge, nature has come to be seen as a vast laboratory of mutations, against which humanity needs to set sentinels that will be able to detect early the emergence of new pathogens and species-jumps. The discourse of pathogen 'emergence', already studied by Wald (2008), not only trains us to observe and anticipate new types of threat, but from Keck's perspective constitutes new structural positions at the threshold of inter-species event occurrence. Microbiologists, dendritic cells, wild waterfowl, and Hong Kong itself are all interpolated into this system of watchfulness and surveillance, where good information is early or – if possible – pre-vental information. The constitution of Hong Kong (and its human, avian and cellular inhabitants) as a hyper-sentinel at the threshold of epidemiological time was itself conditioned through a series of what Keck calls 'missed events': zoonotic incidents that did not (or some would say failed to) lead to the anticipated global pandemic. These, he claims, led to the formation of the sentinel as the form/event defining epidemiological intelligence today. The work of this figure consists not simply in the collection of information but in the transformation of 'the scarcity of available living material into an abundance of information' and, at the same time, the transformation of the very communicative ontology of disease. Assuming, or imagined to assume, the language of the virus, the sentinel's task is not simply to take up the point of view of the enemy, but to get into the skin of a non-being, a non-organism: assuming the point of view of pure information whose only function and goal is its self-communication. The challenge here for the sentinel as, in Keck's words, 'a form that captures events, because it is situated at the border of existing forms' is imagined to be not only inter-positional but also inter-temporal. As viruses (parcels of pure information) are supposed to be able

to mutate and 'adapt' with a speed that no (bio)technological development can match, the need emerges to catch this information before it has even arisen, to grasp the signal before it has been transmitted.

At the heart of the temporal regimes of these intelligence technologies and practices we hence find an expanded notion of the present time: an episteme and ontology of the 'now' based on the imaginary presence of the future in the past. So, if following Gomel (2000: 409), epidemics are imagined as forms of 'protracted dying', what happens to them when they are subjected to the epistemological/ ontological regime of 'real time'? Unlike, for example, the Manchurian pneumonic plague outbreaks examined in my own article in this issue, in the case of modern epidemics or pandemic threats the harvest and accumulation of information does not generate a sense of knowledge or completion, but rather an incompleteness that, Caduff argues, is generative in so far as it stimulates 'a chronic desire for more information'. In 1926 Wu Liande, the most celebrated figure of Chinese epidemiology, could be proud of having compiled an all-inclusive treatise on pneumonic plague, published by the League of Nations, but in 2013 the main information communicated by vastly larger databases on avian influenza is that our knowledge of this projected pandemic event is always already incomplete. If Wu's aim and success was to coherently represent a sequence of epidemic events related to *Yersinia pestis* across the globe, today's information retrieval and processing systems' aim and effect are, Caduff suggests, to eventalize the coming pandemic – to render it unrepresentable.

It is here crucial to compare this 'spectacle of eventfulness', as engineered and played out on the highest level of epidemiological apparatuses of capture, with ground-work epidemiology, as described by Lotte Meinert and Susan Reynolds Whyte in their contribution to this collection. In discussing responses to AIDS in Uganda, Meinert and Whyte argue that for Ivan, a 35-year-old man from the east part of the country, the news that he was infected with HIV did not function as a shocking event, but as the end result of a long process of calculation and suspicion. Providing an ethnographically detailed account of Ivan's life story, the two authors weave an evocative portrait of human-institutional inter-temporality and its fatal consequences. Meinert and Whyte analyse Ivan's situation as a result of 'the intertwining of an epidemic disease and the projects that responded to it' and their corresponding temporalities: a multitude of short-term, limited projects for a long-term enduring infectious disease epidemic. Exploring the origins and consequences of this 'projectification' phenomenon, the authors compare the syndemic spread of the disease to the spread of AIDS-related projects and their synergy with wider social, political and economic factors and processes. Hence as an 'epidemic' of projects comes to respond to the epidemic of an infectious disease, what is generated on the ground is less a temporality of expectancy and deferment – as in the case of epidemiological intelligence – than a constellation of subjectivities embodying a temporality of projectified response. This is a response that follows not so much the time of the disease as the time of institutionalization, mainstreaming and crisis management, which, as Meinert and Whyte illustrate, transforms patients into clients.

Comparing this with the Directly Observed Treatment – Short-course (DOTS) programme against tuberculosis in India – which is examined by Jens Seeberg in his contribution to this collection – allows us to see how, in a different ethnographic context,

subject-formation is dependent upon yet another temporality of response on the part of patients vis-à-vis a surveillance and treatment project. Defined as people ‘who fail to adhere to the treatment regime and who face a high risk of developing multi-drug-resistant tuberculosis’, so-called ‘defaulters’ are constituted as subjects in the cracks of epidemiological time. Seeberg provides a nuanced analysis of the subjectivation of defaulters, giving us a fascinating life-story of Shankar, an inhabitant of a Bhubaneswar slum, who was rendered a ‘defaulter’ due to institutional-paternalistic barriers, dying from tuberculosis at the age of twenty-eight. The event in this case is not the appearance of the disease, but the non-appearance of the patient before the DOTS programme; not making one’s medical appointments with the DOTS-provider for a period of two weeks renders one a ‘by-product of this elaborate monitoring process’, a subject of non-compliance who is all the more a failed subject. Non-adherence to a medicalized regime of normativity in this case is perhaps less violent than the active resistance to anti-plague measures recorded during the second Manchurian pneumonic plague outbreak of 1920–21, yet these two instances share a common aspect. Both individuals in contemporary India who, for one reason or another, do not manage to keep up with their DOTS schedule, and soldiers in 1920s North-East China who sabotaged anti-plague containment measures, are turned by hegemonic epidemiological discourse into backward unsanitary elements: a separate human kind, a human waste, in Seeberg’s Baumanian terms, that keeps humanity as such from marching onwards to a bright diseaseless future.

It is important, therefore, to consider the dialectics of event and process in the case of infectious disease outbreaks within the wider context of the ‘time of epidemics’, which, at least since the rise of the ‘emergent infectious disease’ discourse of the early 1990s, is no longer simply a time of disease conquest and eradication, embodying a heroic linear narrative of human supremacy, but always already a time of imagined regression to mass public health collapse. It is a time informed by the fear of a grand return of pestilence to the historical stage on the back of imagined unhygienic social, behavioural and cultural ‘remnants’: various insalubrious forms of otherness, whose common denominator, in epidemiological imagination, is their impure connectedness to animals and, at the same time, to the wider world through cosmopolitan networks of exchange.

It is our hope that this special section of *Cambridge Anthropology* will contribute to an illumination of the dialectics of event and process as regards infectious disease outbreaks, and to an understanding of the social and political implications of the ‘time of epidemics’ and of ways in which anthropology might engage with epidemiology in a manner both critical of the outbreak narrative and constructive for public health.

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