Afterword: relevance and realities of anthropological critique of epidemiology

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It was with great delight that I accepted the invitation by the University of Cambridge's Centre for Research in the Social Sciences, Arts and Humanities (CRASSH) to participate and contribute in a thematic analysis of events and epidemic crises, and exploring the dialectics of events and process. This engagement organized by Christos Lynteris brought together anthropologists and historians examining the relationship between event and process, with applied public health and social scientists in an interdisciplinary discussion on the role of subjects in such crises, and the importance of social perceptions of epidemic outbreaks in the process of preventing and containing them.

In this paper, I will attempt to describe the relevance and the realities of anthropological critique of epidemiology using three of the papers presented at the "Dialectics of Events and Crisis " conference, Lynteris' 'Epidemics as Events and as Crises'; Caduff's 'Data-mining, Crowd-sourcing, and White Noise', and Meinert and Whyte's examination of the 'Projectification of the AIDS Epidemic in Uganda'. I will draw from my own experiences in Haiti, first arriving in Haiti in April 2010 to coordinate the CDC's public health response to the devastating January 12, 2010 earthquake, then months later at the heels of an outbreak of cholera to lead a team supporting establishment of cholera surveillance and coordinating the outbreak response.

The destruction from the magnitude-7.0 earthquake was massive; Haitian government officials estimated that 230,000 persons died, 300,000 were injured and more than 2 million were internally displaced. Precariously weak even prior to 2010, Haiti's public health infrastructure was all but decimated. Not ten months later, the inadvertent introduction of toxigenic *V. cholerae* into Haiti in October 2010 resulted in the world's largest national cholera epidemic in recent memory (Ryan 2011), at a time when Haiti had no system capable of providing timely surveillance on a wide range of health conditions. (CDC 2010). One upside was that these events brought resources, and the opportunity was seized. As Dowell describes in a Perspective that he wrote at the one-year anniversary of the earthquake while the cholera outbreak was ongoing, *"meeting initially in a cramped set of rooms above a generator retailer, a small group of surviving Haitian public health leaders has worked to build public health systems that are better than before. Their efforts have been buoyed by generous support from around the world."* (Dowell 2011).

In his paper 'Epidemics as Events and as Crises', Lynteris not only draws out several important notions about the distinction of epidemics as events and epidemics as crises, but also offers a historical framework for the evolution of the notion of public health as a responsibility of a state, and how the plague epidemics in Manchuria (examined first as *event*, and then as *crisis*) test and conceptually define emergency preparedness and a state's capacity to respond.

A modern term corollary to Lynteris' observations is that public health – inextricably tied to emergency preparedness and to a state's capacity to respond to event and resiliency to recover from crisis – is the responsibility, and therefore a test, of the state. Was that the case in post-earthquake, post-cholera Haiti?

Vis-à-vis its citizens that were displaced by the earthquake or affected by the cholera epidemic, the relevant parameters by which the government of Haiti is tested are the return of people to housing and restoration of installation of infrastructure for the former, and adequate control of cholera for the latter. To the global community, the relevant measure of success was the ability to receive and administer support in the face of crisis. Did the nascent government of Haiti – installed during the peak of the cholera epidemic – satisfactorily pass the test?

While it may be too soon to tell, the government of Haiti achieved some critical successes in its response to both situations, including the establishment of a national surveillance system that required the collaboration of governmental and nongovernmental institutions operating at the commune, regional, and national levels; the relocation of over 90% of the displaced populations, and the reduction of the case fatality rate for cholera in line with internationally accepted standards[1] of outbreak management within 3 months after the onset of the epidemic.

Lynteris reflects on the biopolitical and geopolitical character of the Manchurian epidemic, *"since what was at stake was both the definition of the disease at hand and the decision as regards which imperial power was scientific and modern enough to both explain and control the epidemic[.]"*. Examined from different angles, scholars converge on the fact that the 1910–11 Manchurian plague epidemic markedly influenced the formation of the Chinese state and public health's responsibility to respond to and control the epidemic, effectively bringing into focus "the nature of quarantine enforcement during the outbreak" (Cheng 2010) and as a "defining moment in the ushering in of modern medicine and public health in China." (Summers 2012).

Are then epidemics to be considered advantageous or detrimental to [public health] progress? In other words, are outbreaks simply a necessary milestone in a guided evolutionary process? The first Manchurian plague epidemic was an event, in so far as it generated a radical rupture, ushering China into the global age of biopolitics" posits Lynteris. Is it then an "event" such as an epidemic, that validates or invalidates the state's

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[1]Per World Health Organization guidelines, effective response to cholera epidemics should result in fatality rates of < 1% of hospitalized persons.

preparedness capacity and ability to respond by putting the state's responsibility for public health to the test?

In invoking Foucault's analysis of Hippocratic medicine to underline the homonymy between *crisis* and *krisis* (anc. Greek for 'judgement') as an intrinsic feature of the disease process, Lynteris focuses on the temporality of the revelation of a disease/crisis as inherently and fundamentally tied to the susceptibility and vulnerability of a population or environment to the disease in question. The probability of the exact conditions being satisfied for an infectious vector underlying a potential outbreak to evolve into a crisis, embodies both the *krisis* of putting the preparedness conditions to test and the *kairos* (anc. Greek for 'critical moment') of the susceptibility and vulnerability both being present.

The 2010 Haiti cholera outbreak was undeniably a "crisis" in the conventional sense of the term, accounting for 57% of all cholera cases and 45% of all deaths from cholera reported to the WHO in 2010 and 2011 (Barzilay 2013). Considered from the perspective of Foucault's analysis of the interrelation between *kairos* and *krisis*, the introduction of the cholera-inducing pathogen was compounded by the challenges created by Haiti's health care, water, and sanitation infrastructures. Even before the earthquake, in 2008, only an estimated 63% of the 9.8 million persons then in Haiti had access to an improved drinking water source (as defined by the World Health Organization), with only 12% receiving piped, treated water and only 17% had access to adequate sanitation. These structures were further decimated by the quake. To further complicate what was an already precarious situation, cholera had not been seen in Haiti for more than a century, as the Caribbean region was untouched by the cholera pandemic that began in Peru in 1991 (Tauxe 1994, Jenson 2011), making its prevention and treatment entirely unfamiliar to both the community and health care professionals at the time.

Yet the relevance of anthropological critique of epidemiology does not stop here; Caduff's work on 'Data-mining, Crowd-sourcing, and White Noise', and Meinert and Whyte's examination of the 'Projectification of the AIDS Epidemic in Uganda', draw further parallels to the events that took place in Haiti since the 2010 earthquake.

Caduff argues that we are at the dawn of a major transformation in public health, a revolution ushering the age of digital globalization. International networks of digital information exchange such as PRO-MED[2], vast collaboration frameworks such as Global Disaster Alert and Coordination[3], or the United Nations' Office for the Coordination of Humanitarian Assistance[4] enable us to track the emergence and transmission dynamics of infectious disease outbreaks but also to monitor the development of disasters and their response, in real time. Caduff's concern that the ever-expanding technological infrastructure enables people not involved with a crisis in a primary role to "*contribute to the expansion of 'epidemic intelligence' as both a concrete practice and a compelling fantasy*" resonated with me: what, *does in fact*, happen to epidemic events in a milieu obsessed with the fantasy of "immediacy," with the fantasy of "real-time" surveillance?

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[2]ProMED mail, http://www.promedmail.org
[3]Global Disaster Alert and Coordination, http://www.gdacs.org
[4]OCHA, http://www.unocha.org

Immediately after the earthquake – and for several weeks thereafter – cell phone communication in Port-au-Prince was severely disrupted, both by physical damage to the cell phone transmitters due to the earthquake, and due to the overwhelming demand on whatever voice- and data lines remained active. Rapid transmission of information (outside of a few proprietary channels belonging to military, UN relief forces or other large foreign government presence in Haiti having access to dedicated telecommunication technology) was haphazard, arduous, and unreliable, given the dependence on overused Internet channels.

Caduff's disquiet with the prominence of what he aptly describes as *techno-fetishism* is justified. Technological mediations, often in the form of crowd sourcing and data mining, have had a pronounced effect on the information around epidemic events, which, as he explains, is prone to becoming a shared object of knowledge and therefore less accurate or reliable. Public health crises most often call for rapid interventions; against a backdrop of temporary information scarcity typical of post-disaster situations, we often gravitate towards more readily available information instead of more robust but "slower" information. Did the Haiti response fall victim to some degree of *techo-fetishism*? While certainly possible, we should consider situationally-appropriate exceptions where a degree of *techno-fetishism* is not only permissible, but desired: crowd-sourced, unstructured information streams played a critical role in both the immediate response phase to the Haiti earthquake and later in the reconstruction phase.

One of the more prominent examples in the post-earthquake response in Haiti was *Ushahidi*[5], a non-profit technology start-up company that specializes in open source software development for information collection and visualisation/interactive mapping, and who had no prior humanitarian aid agenda or aspirations. Their platform, which launched only hours after the Haitian earthquake, aimed to provide information sharing and crisis mapping for anyone who had a use for it, and to fill a critical gap in the immediate phase of the post-earthquake response. *Ushahidi* was thereby well-positioned as an entity coordinating inter-governmental organizations, non-governmental organizations, multilateral and UN agencies, foreign militaries, and technology giants such as Google, leveraging the participation of volunteers in the tens of thousands while formally employing in the tens.

The quality, validity, and value of the crowd-sourced information (which in the beginning consisted of a mostly un-curated twitter feed) – particularly as it applied to crisis mapping – should raise concerns that resonate with Caduff's questions above and later observation, "*what exactly constitutes a true signal, and that is to say, a significant event which requires […] investigation on the ground remains unclear.*"

As the post-earthquake (and later post-cholera) response evolved, so did the nature, complexity, and acuity of the information being transmitted, making it significantly more difficult to discern signal from noise and shifting the ratio further towards the "noise" pan of the scale. At the outset of the reconstruction phase, where the more ephemeral information systems had outlived their purpose and were being retired, an epidemiologic milieu

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[5]*Ushahidi*, http://ushahidi.com/about-us

"obsessed with the fantasy of "immediacy," and "real-time" surveillance" threatened to supersede the nascent governmental surveillance and reporting channels. As the more experienced public health professionals, first responders, or humanitarian aid coordinators responding to a crisis, does our responsibility to support promising innovations that may provide invaluable data in near "real time" and have lifesaving impact outweigh our risk aversion of piloting an untested – and by design unreliable – surveillance platform, to fall back to the time-honoured but far from "real time", conventional platforms? Even before taking into account the inversely proportional relationship that "real-time" has vis-à-vis accuracy and precision, Caduff's inquiry *"[w]hat, then, might "real-time" mean here?"* is rather *apropos*.

It is important to keep in mind that the language of uncertainty surrounding biosurveillance has as much to do with the concept of the individual as a self-motivated actor as it does with the information gaps themselves. An epidemic, by nature, happens at the population-level; any actions taken in response to an epidemic, any conclusions or recommendations must also be made at the population-level. When individuals or organizations tasked with the responsibility to formulate these population-level conclusions, recommendations and responses, receive informal information about potential epidemics, it is precisely the uncertainty surrounding this information that may force a conservative response.

The digital globalization that Caduff observes exists as a spectrum that ranges from the *bona fide* desire to access actionable information more rapidly; to the impulses that lead to technological innovation in public health, information systems, and surveillance. Caution must be exercised however, to not succumb to what Caduff calls *"techno-fetishism that is characteristic for both the celebration and the critique of today's 'epidemic intelligence'";* in a crisis setting such as Haiti post-earthquake or Haiti post-cholera, the collection of "near-real time" public health surveillance data can and should be used to provide the quantitative information needed for setting immediate priorities, prepositioning resources in the medium term, and establishing rational health policy in the long term. As we improve our appreciation of the variety of uses for public health surveillance data, we need to understand more fully the determinants of the decision-making process. Effective dissemination of information and effective communication are as important as data collection and analysis. No longer do we have–or should we have–the luxury of collecting information for its own sake. (Wetterhall, 1992)

In their paper about AIDS responses in Uganda as event and process, Meinert & Whyte's paper address the notion of "Epidemic Projectification". If we were to consider Lynteris' paper it is interesting to contrast the complete absence of "projects" in the Manchuria – all state actors acting rationally. Is then projectification a modern phenomenon, in a world more often defined by multilateral engagement than by bilateral relationships? If so, what events might have led to its inception? Was it the advent of the AIDS epidemic, the events preceding it, such as globalization, or a series of other interrelated events solidified through crises?

Meinert & Whyte argue that projectification is "epidemic" in Uganda. Epidemiologists define 'epidemic' as an increase from what is expected, for the baseline. Given the relatively

fewer examples of this type of structured, projectified emergency response in the years preceding the AIDS epidemic, the authors' view that *"the epidemic gave rise to a counter epidemic of projects"* is justified. But if projectification in Uganda became so well-established, at which point would it no longer be considered an epidemic but instead an "endemic"? The answer is inevitably complex as are the often messy political and financial tendencies that underlie the projectification construct, but one might argue that it already has, as captured by the words of *Mzee Emjong*, opening their paper, who advises his children *"[t]hese days, the world is run by projects. If you want to survive, get into a project."*

The dramaturgical metaphor the authors employ is a very useful framework within which to further explore the phenomenon of projectification. The event horizon is at the present, and the authors are unable to predict what will happen next. According to Aristotle's work on dramatic theory, *Poetics*, the final act of the tragedy brings resolution or *katharsis* (anc .Greek for catharsis). Will then projectification dissipate when the HIV/AIDS epidemic does or will it simply remain in an equilibrated endemic state? This does not have to be a zero-sum game – there's a third option, although, as the authors remark, one admittedly more difficult to accomplish successfully: that the targeted vertical programming will result in strengthening health systems sustainable beyond time frames of 'projects – as has been the mission of PEPFAR since it inception – and resulting in the gradual replacement of projects by more traditional structures such as the integrated health system.

Similar to our consideration of Haiti falling victim to *techno*-fetishism, I would argue that a degree of projectification – as long as it remains constrained to the duration of the response and recovery phases of the post-disaster response – is not only permissible, but also desirable as it may pave the way for long-term reconstruction and evolution toward *bona fide* health systems strengthening. Given the urgency and relative lack of preparedness during the initial phase of the cholera response, the government of Haiti actively reached out to the global health community, multilateral partners, NGOs, and academic institutions to participate in the response; in response, those partners experienced with working in Haiti, sought to use existing "projectified" resources. In rapidly setting up a cholera surveillance system nationwide, it was significantly faster, more efficient and more quickly impactful to rely on the infrastructure and capacity developed by the established HIV surveillance programs and to use those surveillance "tracks" instead of starting anew.

Admittedly, if there was a way to suspend the urgency of the crisis and provide the required technical support to a government and financing through its channels we would avoid projectifying the disaster response and likely improve its capacity to respond to the next crisis. The reality, however, is that in situations where potentially-preventable morbidity and mortality are a function of the timeliness and effectiveness of the response, we don't risk engaging channels that may be untested, untrustworthy or whose absorptive capacity may be overwhelmed. If on the other hand the actors responsible for projectification were truer to the element of the response in supporting the republic, then maybe *Mzee Emjong*'s advice to his children would have instead been *"[t]hese days, the world is run by [government] projects. If you want to survive, [work for the government]."*

Diseases are ever-evolving; starting with the plague pandemic in Manchuria at the turn of the last century to the AIDS in Uganda decades later to the cholera epidemic in Haiti, and as long as they are causing "events" (and not just "crises") our social responses to them should be ever evolving as well – projectification and biosurveillance and maybe even a certain degree of techno-fetishism are some of the more modern externalities of those disease events.

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