#Covid19: The Spectacle of Real-Time Surveillance, writes Dr Lukas Engelmann

One of the most striking factors of the 1918 Flu pandemic is that the pandemic's global scope and devastating impact only became visible after the fact. To determine the flu's global distribution and to reconstruct its case numbers and fatality rates at the end of the First World War was a task eventually left to the pandemic's historians. To those in the trenches and hospitals, a global flu catastrophe had been unthinkable and for flu to have such devastating effects was simply unimaginable. The history of pandemics has many such examples. When twenty years earlier, the city of Porto was hit by an outbreak of bubonic plague, scores of physicians and medical officers traveled to the Portuguese port-town to verify what had been equally unimaginable: that plague could find a strong-hold in the hygienic modernity of Europe. In similar terms, in the 1980s, while AIDS ravaged communities in Western urban centres, it took enormous efforts to convince the global community that the same epidemic was rampant in sub-Saharan Africa, where it had followed different patterns of transmission. In almost every epidemic in history there has been a substantial delay between its emergence and the development of a widely agreed-upon representation of its scale, distribution and overall dynamic. Crucially, the historical reconstruction of epidemics is not merely a task of accurately counting cases and fatality rates, but also often one of overcoming and revising those tired concepts, outdated assumptions and political dogmata, which the epidemic had rendered redundant.

With COVID-19, things seem to run on a different scale. Digital epidemiology holds the promise of offering near-real time surveillance of the epidemic, cum-pandemic, while it

keeps emerging. Circumventing dated and excruciatingly slow reporting chains from front line-physicians to laboratories to national reporting institutes and clearing-centres to the World Health Organization, the disruptive promise of digital epidemiologists is attractive. Any ongoing epidemic could be inferred directly and seamlessly from the global data exhaust, collected from what people do and what traces they leave online. As demonstrated with Google Flu Trends, applying simple models of epidemic dynamics could render the geographical spread of search terms into an indicator of viral distribution. Early on in the COVID-19 crisis, reports circulated of a Canadian company whose system had shown the threat of the new virus earlier than any health reporting institution. The BlueDot algorithm digests news reports from languages other than English, taps into global animal disease reporting and – its true asset – tickets data from airlines to predict possible global distribution patterns following any unusual event. In this case, a week ahead of health bodies, the company had already alerted its customers of an imminent threat. Wired accordingly announcee shortly after the coming reign of the "AI-epidemiologist."

Apart from such debatable sophistication of prediction, the COVID-19 history is written daily, if not hourly on social media. Countless apps offer hourly updates, various services bring animated maps to trace the live-progress of the virus and following the COVID19 hashtag on Twitter combines an endless stream of case and fatality updates, infused with an equally infinite stream of opinion pieces, interpretations and reflections (just like this one). Real-time surveillance brings the global community face to face with the developing epidemic, suggesting a sense of participation as well as control. The epidemic's live feed enables a mode of global observation that allows for contemplative reflection of the theatre of global contagious relations. The show is perhaps best consumed in this Youtube livestream, with its neat slideshow of maps, representing up-to-date numbers complete

with an ‘easy-listening’ auditory pastiche.

In China, meanwhile, the spectacle of real-time surveillance was quickly rendered into a Foucauldian caricature. A new app, designed to assign its users a risk score based on their location data compared with national transport data, existing case records and whatever else the Chinese government has access to, folds surveillance and containment into one. Scrutinizing social networks and spatial proximity of citizens, a higher risk score suggests individual behavior changes at the risk of social stigma. The design exploits social and political vulnerability to encourage social distancing on the basis of obfuscated correlations and deeply flawed assumption of reliability. With false accusations, xenophobia and an “infodemic” of false information rampant, the unknowns about COVID-19 remain overwhelming. Investigating the epidemic’s distribution requires careful modesty and critical reflection on the conditions of data reporting, and interventions need to balance human rights with containment strategies. However, the constant stream of real time updates, animated distribution maps and refined predictions delivers a dangerous sense of oversight and certainty.

Further, the spectacle of real-time surveillance does not offer an agreed-upon, well-established and heavily scrutinized picture of the epidemic. The cacophony of images, representations, interpretations and framings reminds us of what Treichler has called an “epidemic of signification” in the case of HIV/AIDS: thousands of attempts to make sense of the event and to give meaning to a crisis while we are still in the thick of it. However, on the Twitter timeline, constantly updated maps and livestreams appear to promise more than just interpretations. What they deliver is the result of folding the weak and unreliable modeling tools of forecasting and prediction into the illusion of epidemiological “nowcasting.”

Rather than closing the gap between the historic event and its

delayed critical analysis, real-time surveillance is fundamentally simulation. The pictures, maps and inferences emerging in real-time are based in a few routinely used models, which inscribe assumptions and theories when allocating numbers to reduce the complexity and contingency into drastically simplified social mechanics. “The knowledge produced through the simulation of pandemics”, Sven Opitz wrote recently, “is characterized not by correlation but is constitutively infused with approximations, estimations and speculations.” The result is not a more or less accurate representation of what is really going on with COVID-19 in the world, but a series of presentations that constantly invoke yet another world of COVID-19. However, the simulations of possible – or with Deleuze, virtual – epidemics assume nonetheless a status of real representations. As such the “nowcasted” epidemic has palpable effects on social worlds, which as in the case of the app of the Chinese Government, require urgent critical scrutiny.

One of the first, and perhaps one of the most significant, models of epidemic theory was developed in the aftermath of the 1918 Flu pandemic. Confronted with the uncertainty fueled by the shock of the unseen scope of the pandemic, the Reed-Frost model was charged with reproducing the standard dynamics of epidemics. It was supposed to deliver an experimental workbench to the epidemiologists, who had failed to deliver actionable results based on (the lack of) observation. In the digital age, the spectacle of real-time surveillance in epidemic crisis let us take part in experimenting with the fragments of data that this developing crisis offers. However, outside of the lab and nurtured by the global hype around data science and AI, this epidemiological experimentation now involves an unprecedented scale of research subjects on- and offline, while its operation appears largely ungoverned by ethical oversight or researcher’s virtue.

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