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Where Has SARS Gone? The Strange Case of the Disappearing Coronavirus

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The emergence of Severe Acute Respiratory Syndrome (SARS) in China's Guangdong Province in the winter of 2002 was an exemplary spillover event: it marked the passage of a lethal pathogen from nonhuman to human animals and was widely heralded as the first "[plague](#)" of the twenty-first century. The SARS coronavirus seemed to burst out of nowhere and demonstrated pandemic potential from February 2003 when it diffused globally via Hong Kong. After SARS was officially declared contained by the World Health Organization (WHO) on [5 July 2003](#), there were a few isolated cases but none since 2004.

SARS in the SAR

Hong Kong was at the [epicenter](#) of the 2003 SARS outbreak and the identity of the newly recognized pathogen became fortuitously linked to Hong Kong's evolving status as a postcolonial Chinese city under Deng Xiaoping's "One Country, Two Systems" policy. Since its "handover" from Britain in 1997, the territory had been a "Special Administrative Region" (or SAR) of the People's Republic of China (PRC) – a quasi-autonomous region within the sovereignty of China.

In a WHO press release on [15 March 2003](#), the new "syndrome," which had made its first appearance in Hong Kong in February of that year, was named "SARS." The acronym was easily confused with the abbreviation SAR by which Hong Kong was known. SARS and SAR acquired a disturbing indexicality. Referred to sardonically by some commentators as the "Special Administrative Region Syndrome," Hong Kong officials were wary of using the term SARS to describe the new disease. Instead, they continued calling it "[atypical pneumonia](#)."

Colonial Hong Kong had from its beginning lived under the shadow of its looming end. The New Territories, which make up the majority of Hong Kong's territory, were acquired by the British from the Qing on a 99 year lease in 1898. In 1997, the year that the lease expired and Hong Kong was handed back to China, H5N1 broke out. Discourses of ends and beginnings converged. The end of a colonial regime and the beginning of Hong Kong's new chapter as a SAR coincided with a novel emergent

threat.

When SARS broke out it did so within the context of another projected end, since questions remain about what Hong Kong's status will be 50 years from 1997 when the agreement with China recognizing Hong Kong's "basic law" will expire. In Hong Kong, then, the "end" of disease became enmeshed in a state politics of ends and beginnings.

Disappeared but not Gone

Since 2004, SARS research has fallen-off dramatically, as evidenced by a search on PubMed. However, the question that is periodically asked is: [Where has SARS gone?](#) The short answer is that public health measures were effective. Although SARS caused a reported [774](#) deaths worldwide between November 2002 and July 2003, case detection, isolation, quarantine, along with contact tracing, broke the chain of transmission.

From another perspective, of course, SARS hasn't gone since specimens still exist in research facilities. Potential security lapses keep alive the specter of the pathogen's reemergence. After the WHO's announcement that SARS had been contained, a number of outbreaks were linked to biosecurity breaches at research institutions in Asia. In September 2003, a researcher at the [National University of Singapore](#) contracted SARS through contaminated specimens. In December 2003, a researcher in [Taiwan](#) got infected through contaminated waste material. Poor security at the [National Institute of Virology in Beijing](#) led to a cluster of SARS infections in China in 2004. In a much publicized breach in 2014, the Institut Pasteur in Paris announced the [disappearance of more than 2,000 vials](#) containing fragments of the SARS virus.

SARS also exists as a potentiality in the wild. SARS-like viruses have been reported in a colony of bats in China's Yunnan Province. From analyses of whole-genome sequences of these novel bat coronaviruses, it has been suggested that they are closely related to the SARS coronavirus. A 2013 paper in [Nature](#) reported "the strongest evidence to date that Chinese horseshoe bats are natural reservoirs of SARS coronaviruses, and that intermediate hosts may not be necessary for direct human infection." The study also suggested a potential for future spillovers and stressed "the importance of pathogen-discovery programs targeting high-risk wildlife groups in emerging disease hotspots as a strategy for pandemic preparedness." In other words, the complex events that triggered the disease outbreak in 2003 could reoccur. In this sense, SARS may have receded from view, but it hasn't gone.

Double Take: The False Ending

This equivocal ending – the anticlimactic finale that turns out to be no more than a provisional closure – raises broader issues about how we demarcate epidemics as events. Relatedly, it underscores the way we conceptualize a virus's *de*-emergence; that is, the disappearance of a recognized highly pathogenic virus like SARS that nonetheless continues to exist in a relative virus with the potential to spillover. While the emphasis in the scientific and popular literature tends to be on the process of “emergence” – on a virus's sudden visibility – much less attention is paid to the reverse process of *de*-emergence (or “disappearance”). In one sense there an obvious reason for this. Novelty ensures visibility. A disease ends as soon as another newly recognized illness arrives to eclipse it.

In a study of [fictive endings](#), the literary scholar Frank Kermode noted how human beings impose a coherent pattern on the world to explain the apparent arbitrariness of life. We make sense of an experience by parenthesizing it in a story. In Kermode's words, we fabricate “an intelligible end” that is consonant with a beginning and a middle. Endings are both *imminent* (impending, about to happen) and *immanent* – in other words, they are contained within the story and given meaning in relation to the beginning and middle that precede them.

There may be excitement, panic, and urgency in descriptions of the spillover that precipitates the epidemic crisis, but there is much less accentuation on the end. Despite the relief of containment, epidemic dramas often peter out with an ellipsis. We are left wondering whether the story is not, in fact, about to begin again. As [David Quammen](#) concludes in his account of the SARS outbreak in his 2012 book [Spillover](#): “Apart from the aftershock of cases in early 2004, SARS hasn't recurred ... so far.” Here, we are given the classic *faux* ending of the epidemic. The qualified ending that may in fact intimate the prospect of recurrence.

False endings are a particularly striking feature of the popular outbreak narrative, of course. Take Steven Soderbergh's movie [Contagion](#) (2011). After the fictional MEV-1 pandemic is finally over, an epilogue to the main narrative shows diggers tearing up a subtropical forest. Fruit-bats flit ominously through the trees and roost in a piggery. In effect, the movie ends where it begins with the prospect of a new and potentially endless contagious cycle.

Multiple endings were filmed for [Wolfgang Petersen's](#) 1995 movie [Outbreak](#) – with the final ‘happy ending’ version winning out as a result of approval ratings in test screenings. In the movie, a lethal, Ebola-like virus is introduced to the United States from Africa, when an imported monkey breaks out of its cage and infects the Californian town of Cedar Creek. Just in time, the protagonists find an antiserum and save the town from

bombing. In the ending that was preferred by Petersen, the movie cuts back to Africa, where trees are being felled to the sound of screaming monkeys.

The final sequences in these plot lines recuperates their beginnings. The virus's hosts live on the very edge of visibility, somewhere between an incomplete ending and an incipient beginning. This indeterminacy invariably gives the narrative a spectral quality: the end is haunted by the prospect of another outbreak with the pathogen perhaps more efficiently transmissible the next time around. The animal host lurks on the perimeter of the clearing, waiting for what [Richard M. Krause](#) has called "[undercurrents of opportunity](#)."

We are dealing, in other words, with a false-ending – with an end that turns out not to be an end at all, but rather a spurious foreclosure and at best a pause for breath. Such narratives invite us to rethink what an "end" means. Rather than asking "where has the SARS virus gone?" we might reformulate the question to enquire: What was the virus before it was SARS? What will it become when it is no longer SARS? In questioning the end, we call into question the beginning. We enter into the realm of incalculable risk and perpetual anticipation.

Temporal Convolutions: Preventing the Beginning Before the End

The question "where has SARS gone" turns out, in effect, to be another way of asking where the virus has come from. The title of this blog series, "[After the End of Disease](#)," could be plausibly recast as "Before the Beginning of Disease." The problem of the future turns out to be rooted in the past. One strand of preparedness lies precisely in *going back*; in tracking the virus to its natural host reservoir – to the place of its pre-emergence. Pandemics may be anticipated by monitoring viral activity in animal populations where the potential exists for spillover. Samples of blood from bush meat and markets may be analyzed in the laboratory to reveal "viral chatter." As [Nathan Wolfe](#) has remarked: "We have found brand new retroviruses, the class HIV belongs to, and new pox viruses, cousins of smallpox. A number of things we have identified haven't spread, or have spread but not substantially. The potential is there, though..."

While the interface between human and animal populations requires perpetual surveillance, the border-territory must also be crossed in order to detect emergences in the wild before they have become visible as epidemic diseases in humans. Here, the beginning becomes as equivocal as the ending.

Endings in the Borderless World

Defining a disease in terms of its beginning and ending involves the imposition of borders. We might think of an “end” (or, for that matter, a beginning) as a line drawn around an object. For something to become an “event” it requires epidemiological demarcation – it needs to be fixed in time and mapped across space.

Disease emergence presumes a bordered world. We could push this notion of the border across domains: from the structured viewpoint of the microscope in biology to epidemiology, public health, and the politics of targeted drone vision. Globalization, too, may be thought of as a process of intensifying global connectivity that erodes borders to produce a “borderless” world. This breakdown of borders, barriers, and boundaries – and a concomitant drive to reinstate new frontlines – has certainly been a central concern in the literature on disease emergence from the late 1980s and early 1990s.

Conceptualizing disease in terms of a beginning and an end implies an angular view of the world – a “[framing](#).” Disease emerges as a discrete object within a spatial and temporal perimeter that’s defined by the beginning and end. Yet this frame cuts off continuities and interrelationships, inevitably foreclosing complexity – the complexity of genetic constellations, for example, that make identification of a beginning problematic.

Over the last 6 years in Hong Kong, I have taught a cross-faculty course on [global histories of infectious disease](#). With each intake it is clear that the memory of SARS is fading. And yet in Hong Kong, SARS remains a powerful presence. The traces of SARS are evident, not only in memorials to those who perished during the epidemic, but in the ubiquitous hand sanitizers, in the face masks and notices informing the public that elevator buttons, door handles, and escalator rails are regularly disinfected – and in responses to other emergent fears. Above all, SARS remains embedded in the SAR as the marker of a new beginning and of a particular state of exemption.

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