The Covid-19 pandemic has spurred the placement of extraordinary limits on liberties and rights globally, from remote-working orders to domestic and international travel bans, from the closure of businesses, schools, and religious institutions, to the cancellation of social gatherings and assemblies. In the United States, the United Kingdom, Brazil, and elsewhere, the confinement conditions of institutionalized and incarcerated persons and refugees have heightened the risk of acquiring the novel coronavirus, in many instances without offering any strategies for mitigation of infection. Other curtailed rights, with regard to public health in particular, have included the mandatory wearing of face masks; isolation and quarantine; the curtailment of personal movement (via social distancing protocols); and the disclosure of individuals’ health information to local and national governments.

The advancement of public health has always required a balancing act between the necessity of surveillance and the exercise of rights and liberties. On prior occasions in the US, the scales tipped in favor of public health and of the rights of the majority. In the 1905 case of *Jacobson v. Massachusetts*, for example, the US Supreme Court upheld a state law that required universal smallpox vaccination and the subsequent conviction of Henning Jacobson, who had refused to be vaccinated. The majority opinion read in part: “The Constitution does not impart an absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint,” and added a nod to a collective right over and against an individual one: “a community has the right to protect itself against an epidemic of disease which threatens the safety of its members.” In the intervening decades, US legal doctrine has sought to limit this broad interpretation of “community” rights.

Against the backdrop of a pandemic, the trade-offs between community rights and individual rights are brought into high relief. In May 2020, Italy passed legislation that permitted undocumented workers to apply for temporary legal residency permits. While this law was framed as a humanitarian gesture (i.e., providing greater access to healthcare resources during the pandemic), after decades of unwillingness to codify the status of migrants, this expansion of rights was also understood to be needed to support the agricultural sector.

Other considerations are specific to the minority and marginalized populations being disproportionately impacted by Covid-19, such as the Black, Asian, and minority ethnic (or BAME)
communities in the UK, and African American, Indigenous, and Latinx communities in the US. The burden of surveillance over rights sits differently with different communities. There are suggestions that distrust of government authorities, following the killing of George Floyd in the US, is impacting contact tracing efforts by increasing reluctance to cooperate with any state entity. Therefore, frameworks for disease mitigation such as contact tracing should be sensitive to the needs of those who have a justifiable mistrust of all forms of state surveillance and over-protective of the rights of vulnerable populations.

**Contact Tracing**
In use since at least the mid-19th century in Europe, and for nearly a century in the US, contact tracing is the public health practice of locating and notifying individuals who have interacted with someone who has tested positive for an infectious disease. In some instances, contact tracers probe deeply into an individual’s life, inquiring about where and how they have traveled, worked, shopped, and eaten. An infected person’s contacts—who are identified by name, address, health status, and other personal details—are then placed in self-isolation or quarantine; should any of these individuals test positive, the tracing and isolation process is iterated, with the aim of breaking the chain of transmission. Done correctly, with expert disease intervention specialists (or DISs), contact tracing is quite effective, but it was traditionally done in person and is therefore a time-intensive and laborious process, thus giving rise to the name “shoe-leather epidemiology.”

Traditional forms of contact tracing have always raised issues of rights and privacy. As American bioethicist Nancy Kass has argued, contact tracing is “[o]bviously a privacy infringement in itself [and] also invades the privacy of individuals whose names are disclosed, who are not able to decide for themselves whether to release their names to officials.” Noting the potential disparate impact of contact tracing, she states that “[j]ustice concerns also arise if contact tracing programs are not implemented fairly.” Moreover, the ability to act on contact tracers’ recommendations to stay isolated vary considerably across different socio-economic and cultural contexts.

Initiatives to train, hire, and employ hundreds of thousands of contact tracers globally are facing hurdles. In the UK, contact tracers have reportedly spent their time reading and watching films because an ineffective system does not provide them with sufficient work, even as the infection rate and death toll rise. In the US, many have expressed hesitancy to share personal information with contact tracers, and the expertise and experience needed to do contact tracing well, especially among vulnerable populations, may have been underestimated in some locales. Although Thomas Frieden, former director of the US Centers for Disease Control and Prevention, is advising a New York City contact tracing effort, he has criticized the
the training and operation of this critical work have been moved out of the agency where they typically sit, thereby losing the benefit of best practices and expertise.\footnote{11}

**Digital or Mobile Contact Tracing**

Conventional contact tracing thrives from the fundamental element of “human touch.” Digital contact tracing uses technology, including Bluetooth and geolocation data, as a means to track and trace an infected individual’s physical interaction with others. While digital contact tracing using smartphone applications may offer the benefit of notifying individuals about interactions with someone who has had Covid-19, it does not include the wraparound social support of traditional contact tracing processes. The innovation minister for the UK Department of Health and Social Care, for example, suggests that its digital “test and trace” pilot on the Isle of Wight did not succeed because “people prefer to be contacted by a human being with bad news, rather than by text message or email.”\footnote{12}

Conventional contact tracing suffers from the unreliability of human memory, which inevitably slows the ability of public health departments to adequately reach all persons who are at risk of infection. Digital contact tracing not only addresses the issue of incomplete memory, it increases capacity to inform all individuals at risk of infection. Moreover, the scale and scope of the Covid-19 pandemic make it apparent that forms of digital contact tracing are necessary complements to conventional practice.\footnote{13} The challenge remains how to balance data collection and the preservation of rights and liberties\footnote{14} in different cultural, political, and governance contexts. A central challenge of digital contact tracing is the global digital divide: some people lack access to a mobile phone or to resources for regular phone usage required for contact tracing and exposure notification. As a result, disadvantaged persons may be excluded from the benefits of public health resources (who are themselves disproportionately subject to hyper-surveillance).

Digital contact tracing at the scale necessary to track widespread infection presents many of the privacy concerns that accompany conventional contact tracing, and it raises new ones as well. A key issue that arises with digital contact tracing is the magnitude of personal data that can be collected, heightening the scope and impact of breaches of privacy and rights. South Korea is instructive for how easily data profiles can be constructed under conditions of pandemic emergency. South Korea’s Infectious Disease Control and Prevention Act, passed in 2015, following the MERS epidemic, allows health authorities to make use of the Epidemic Investigation Support System, a data aggregation and analytics tool that draws together exhaustive profiles of infected individuals using cell phone geolocation data, credit card information, travel-related data, electronic medical records, and other sources of digital information “in under a minute.”\footnote{15} By choosing this path of robust surveillance, South Korea has avoided locking down its citizens or closing its economy.
In other national contexts, initiatives built on mass data surveillance may be cause for concern, due to deliberate or inadvertent data creep by public health institutions, or due to misuses in the criminal justice or immigration systems. There is also the risk of data being procured by or sold to third parties, as in the case of the state of North Dakota’s Care19 contact tracing app. Although users were told their privacy was secured, the app was demonstrated to actively share location and unique identifier data, as well as smartphone users’ personal information, with at least three technology companies.16

Current digital contact tracing applications, such as the Google/Apple API infrastructure, attempt to circumvent privacy concerns through the development of applications that use Bluetooth, a short-range wireless connection method, and a decentralized model where data is solely stored on an individual’s smartphone and is automatically removed after an established time period. While individual nation-states have varying opinions on the matter, the European Commission, for example, has highlighted decentralization as necessary for ensuring trust and adoption of the technology.17

This is in contrast to centralized data storage by a state’s public health department or health ministry. Singapore’s TraceTogether app uses Bluetooth to trace and track users in close proximity. It is considered a crime to refuse to assist the Ministry of Health in mapping one’s movement if one tests positive for Covid-19. Once a person discloses their diagnosis, the Ministry of Health determines who was in proximity to the infected person, based on the data the app collected, and sends an alert to those individuals. Although this method preserves anonymity and privacy between users, Singapore’s government maintains a database linking users to their phone number, leaving open the possibility for privacy violations.

In South Korea, transparency and dissemination of information have been prioritized, with municipalities deciding how much information should be imparted to the public via text messaging. This has, however, led to controversy about the indiscriminate disclosure of sensitive personal information and has enabled the harassment and stigmatization of infected individuals whose identities are uncovered by triangulating information about age, gender, neighborhood, commuting routes, and other variables. In response, the South Korean National Human Rights Commission has called for stronger measures to protect individuals.

By comparison, the Pan-European Privacy-Preserving Proximity Tracing (PEPP-PT) project—run by a European coalition of technology experts and scientists from at least eight countries—aims to anonymize the use of Bluetooth technology without storing data from location tracking, thereby bringing it within the strict requirements of the European Union’s General Data Protection Regulation (GDPR). Although this method reduces high-level privacy concerns, it creates a hurdle for public health epidemiology because the necessary groundwork
of following up with an infected person and their contacts, and general disease surveillance, cannot be carried out. This approach to digital contact tracing was employed by Germany until its recent shift to the Google/Apple platform.

Both Germany and Italy have publicly complained about the privacy-protective tendency of the Google/Apple infrastructure. In the case of Italy’s Immuni app, for instance, Italian authorities are seeking more data from the technology companies than they are currently providing. And the public health community cautions that “exposure notification” without personal details is not contact tracing and therefore impedes the larger public health mission. For their part, the tech companies assert that their technologies are only intended to complement state-designed contact tracing systems.

In France, the desire for independence from Big Tech has resulted in its proprietary StopCovid app that tracks recent contacts via Bluetooth, but it does not track an individual's locations or movements. France sees the use of Silicon Valley tools as a threat to what might be understood as “national rights.” France’s digital minister, Cédric O, has repeatedly lobbied Apple to lift the restrictions it places on the French government’s access to Bluetooth data in iOS, saying recently that the removal of this “technical hurdle” was necessary for France to “develop a sovereign European health solution that will be tied to our health system.”

Ieva Ilves, a Latvian government adviser for information and digital policy, posed this concern more sharply in a recent essay, “Do [sic] Google or Apple get to tell a democratically elected government or its public health institutions what they may or may not have on an app?”

Other Technology Tracing

The use of technology in contact tracing and public health surveillance may exceed the methods described above. Although conventional contact tracing is today contrasted with “digital contact tracing,” technology has long been a part of the process, including the use of landline and mobile telephones, text messaging, and media advisories. In South Korea, digital contact tracing also relies upon surveillance cameras/CCTV, health records, credit card information, and other forms of digital personal information access that were already hotly debated in many countries prior to the pandemic. Epidemiologists in the UK have made use of Facebook’s Data for Good program to access aggregate GPS location data that enables mobility tracking and, therefore, some measure of the success or failure of lockdown efforts. Data brokers and location-tracking firms such as Foursquare and Cuebiq that work regularly with law enforcement, immigration agencies, and political campaigns are now sought after as partners by government entities such as the State of California and the Denver, Colorado Department of Health to monitor adherence to lockdown and social distancing policies.

The University of California at San Francisco uses “smart thermometer” data from the Kinsa company to track fevers that might indicate a Covid-19 infection.
data and Google search data are used to track mobility and information-seeking trends that might anticipate infectious disease outbreaks. China has taken the most authoritarian tack, developing a web of surveillance that also includes facial recognition technology and monitoring and suppressing social media usage.

The trade-offs of engaging in public health surveillance, by volition or compulsion, vary among different populations. Given the forms of inequality that have been exposed and exacerbated by Covid-19, frameworks are required that do not further compound these issues. At present, there seem to be few instances in which public health authorities or technology companies are actively trying to “over-correct” for potential harms that might disproportionately impact vulnerable communities. Given the harms already evident for BAME communities in the UK and Black and brown communities in the US from technology, including hyper-surveillance and carceralization, and the systemic racial inequality that is evident with Covid-19, digital contact tracing may pose distinct and pernicious harms.22

In a recent article in The Global, political scientist Adam Przeworski considers the trade-offs being made among public health surveillance, technology, rights, and liberties after the advent of Covid-19.23 He offers that when “death looms... [democratic] values retract.” But do they return as they were before a state of emergency? Are these retractions “temporary experiments” or will they become permanent fixtures of society? Przeworski concludes that it is likely that “[t]his laboratory of experiments will permanently remain in the arsenal of governments. They may or may not use what they will have learned, but they will have learned.”

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ENDNOTES


11 Ibid; Dr. Tom Frieden (@DrTomFrieden), “Tell it like it is. Disastrous decision by Mayor de Blasio to move program to agency with ZERO experience or mandate, disastrous results of contact tracing. I would feel a lot safer if the experts who understand contact tracing @NYChealthy ran the program.” Twitter post, June 21, 2020.


22 Ruha Benjamin, Captivating Technology: Race, Carceral Technoscience and Liberatory Imagination in Everyday Life (Duke University Press, 2019); Virginia Eubanks, Automating Inequality (St. Martin’s Press, 2018).