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## An Australian Conundrum: Genomic Technology, Data, and the COVIDSafe App

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# AN AUSTRALIAN CONUNDRUM: GENOMIC TECHNOLOGY, DATA, AND THE COVIDSAFE APP

**David Morrison\* and Patrick T. Quirk\*\***

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## I. INTRODUCTION

In seeking to limit the spread of the COVID-19 pandemic, health authorities worldwide are reflecting on their ability to trace and track those who might have contracted the virus, and in turn, to know and protect those humans likely to be exposed. We suggest that the issue around technological innovations, including so-called contact tracing apps, is not whether they have a role to play in containing the pandemic, but rather, how those apps are used and what protections and rights might be given and guaranteed to concerned citizens using those apps.

This paper examines the difficulties that have arisen in Australia in the use of its contact-tracing app. We examine the privacy implications around the use of the app, the wider economic imperative, and the balancing of those concerns against the health threat of the COVID-19 pandemic. We posit that default options are superior in times of emergency and rather than begging for the adoption of lifesaving technology, we suggest that the evidence gathered by behavioral economists provides an apposite and powerful alternative worthy of consideration.

## II. BACKGROUND

The key with a pandemic, such as COVID-19, is to limit the rate of spread as quickly and efficiently as possible. One method used by health authorities is utilizing existing technology that can be easily co-opted or adapted.<sup>1</sup> For example, apps have been developed to provide breaking news and reports, information and updates, and geofencing of hot spots.<sup>2</sup> In Australia and

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<sup>1</sup> Such methods were proposed by elite academics at the beginning of the COVID-19 pandemic. See *Digital contact tracing can slow or even stop coronavirus transmission and ease us out of lockdown*, UNIV. OF OXFORD: CORONAVIRUS RESEARCH (Apr. 16, 2020), <https://www.research.ox.ac.uk/Article/2020-04-16-digital-contact-tracing-can-slow-or-even-stop-coronavirus-transmission-and-ease-us-out-of-lockdown>.

<sup>2</sup> See Patrick Anthony Drury et al., *Ethical considerations to guide the use of digital proximity tracking technologies for COVID-19 contact tracing*, at 1, WORLD HEALTH ORG. [WHO] (2020), [https://www.who.int/publications/i/item/WHO-2019-nCoV-Ethics\\_Contact\\_tracing\\_apps-2020.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-Ethics_Contact_tracing_apps-2020.1), for a discussion by the World Health Organization regarding the use of digital proximity tracking technologies as a

other countries, a form of contact tracing, which includes feedback, has also been incorporated in the apps to notify those who are vulnerable or close to otherwise unknown dangers in a timely way.<sup>3</sup> The ability to use technological innovation, including so-called contact tracing apps, is useful; however, these technologies pose implications for governments and those they seek to protect with regard to how individual citizens' information and data collected by the app will be used and protected.<sup>4</sup>

The World Health Organization (WHO) reports daily on the status of the COVID-19 pandemic world-wide.<sup>5</sup> As of October 9, 2020, there were over 50,000,000 confirmed cases of COVID-19 and over 1,200,000 reported COVID-19 related deaths globally.<sup>6</sup> While comparisons with the Bubonic Plague in the fourteenth century—which killed around 200 million people<sup>7</sup>—have inevitably surfaced, we posit that comparisons to historic events are somewhat crude, because of significant differences in economies, living standards, and health care between the points of comparison. Gavi, the global vaccine alliance,<sup>8</sup> asserts that

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potential tool to support contact tracing for COVID-19.

<sup>3</sup> Luca Ferretti et al., *Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing*, AM. ASS'N FOR ADVANCEMENT SCIENCE, May 8, 2020, at 4.

<sup>4</sup> Todd Ehret, *Data privacy laws collide with contact tracing efforts; privacy is prevailing*, REUTERS (July 21, 2020, 2:36 PM), <https://www.reuters.com/article/bc-finreg-data-privacy-contact-tracing/data-privacy-laws-collide-with-contact-tracing-efforts-privacy-is-prevailing-idUSKCN24M1NL>. Concerns around the information collected from apps continue even after testing and are often complex considerations, balancing health issues against privacy protection. See Genetic Alliance, *Advocates are Leaders in BioBanking*, YOUTUBE (June 4, 2010), <https://www.youtube.com/watch?v=U0ES0yDWryM>.

<sup>5</sup> *Coronavirus disease (COVID-19) Weekly Epidemiological Update and Weekly Operational Update*, WHO, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (last visited Nov. 12, 2020).

<sup>6</sup> *WHO Coronavirus Disease (COVID-19) Dashboard*, WHO (Nov. 9, 2020, 2:46 PM), <https://covid19.who.int>.

<sup>7</sup> Pat Lee Shipman, *The Bright Side of the Black Death*, AM. SCIENTIST, Nov.–Dec. 2014, at 410.

<sup>8</sup> See GAVI: THE VACCINE ALL., <http://www.gavi.org> (last visited Nov. 12, 2020). Gavi's partners include, *inter alia*, UNICEF, Bill & Melinda Gates Foundation, The World Health Organization, and The World Bank. *Id.*

recent pandemics, such as the Asian flu of 1957–1958—which killed around 1.1 million people—and the Hong Kong flu of 1968–1970—which killed around one million people—provides a more useful comparison.<sup>9</sup> Nonetheless, as the worldwide fatalities from COVID-19 reached close to 800,000 in August 2020,<sup>10</sup> and with so-called second wave effects being experienced, longer-run comparisons are inevitable, even if somewhat flawed.<sup>11</sup>

While disease and death—together with the community concerns around protecting the vulnerable—are motivating factors for governments to take action, economic considerations appear to be equally compelling. *The International Monetary Fund (IMF) Blog* predicts that the economic downturn caused by the COVID-19 pandemic is the worst since the Great Depression and that world economic growth will fall to negative three percent.<sup>12</sup> The IMF provides a comprehensive summary of discretionary actions taken by 197 economies worldwide.<sup>13</sup> These measures include public spending adjustments, taxation measures, and other policy support, summarized by country.<sup>14</sup>

The variation and degree of border closures are concerning since a key commonality with COVID-19 and previous global

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<sup>9</sup> *How does COVID-19 compare to past pandemics?*, GAVI: THE VACCINE ALL. (June 1, 2020), <https://www.gavi.org/vaccineswork/how-does-covid-19-compare-past-pandemics>.

<sup>10</sup> Lisa Shumaker, *Global Coronavirus Deaths Exceed 800,000*, REUTERS (Aug. 22, 2020, 4:48 PM), [reuters.com/article/us-health-coronavirus-casualties/global-coronavirus-deaths-exceed-800000-idUSKBN25IOQS](https://reuters.com/article/us-health-coronavirus-casualties/global-coronavirus-deaths-exceed-800000-idUSKBN25IOQS).

<sup>11</sup> See *How does COVID-19 compare to past pandemics?*, *supra* note 9.

<sup>12</sup> Gita Gopinath, *The Great Lockdown: Worst Economic Downturn Since the Great Depression*, IMFBLOG (Apr. 14, 2020), <https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/>.

<sup>13</sup> *Policy Responses to COVID-19: Policy Tracker*, INT'L MONETARY FUND [IMF], <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> (last visited Nov. 12, 2020).

<sup>14</sup> *Id.*; see also Lora Jones, Daniele Palumbo & David Brown, *Coronavirus: A visual guide to the economic impact*, BBC NEWS (June 29, 2020), <https://www.bbc.com/news/business-51706225> (examining COVID-19's negative impact worldwide on stock markets, unemployment rates, travel, oil prices, and shopping).

pandemics is the use of masks<sup>15</sup> and isolation,<sup>16</sup> with the latter factor being the primary predictor of containment,<sup>17</sup> although evidence for this claim is primarily anecdotal because of the absence of verifiable data.<sup>18</sup>

The variability of measures taken in different regions and the medical uncertainties associated with COVID-19 show that the desire to keep economies operating as being both firm and unrelenting.<sup>19</sup> In the absence of data, we posit that economic objectives are playing a key role in government decisions around physical isolation and that government measures taken across

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<sup>15</sup> Bruno J. Strasser & Thomas Schlich, *The Art of Medicine: A History of the Medical Mask and the Rise of Throwaway Culture*, 396 LANCET 19, 19–20 (2020); see generally C. Raina MacIntyre et al., *Face Mask Use and Control of Respiratory Virus Transmission in Households*, 15 EMERGING INFECTIOUS DISEASES J. 233 (2009), [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2662657/pdf/08-1167\\_finalRCME.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2662657/pdf/08-1167_finalRCME.pdf), for a post-survey analysis regarding the effectiveness of different types of masks for preventing the spread of viruses.

<sup>16</sup> Phillip Connor, *More than nine-in-ten people worldwide live in countries with travel restrictions amid COVID-19*, PEW RSCH. CTR. (Apr. 1, 2020), <https://www.pewresearch.org/?p=361112>.

<sup>17</sup> Laura Spinney, *Closed borders and ‘black weddings’: what the 1918 flu teaches us about coronavirus*, GUARDIAN (Mar. 11, 2020, 2:00 PM), <https://www.theguardian.com/world/2020/mar/11/closed-borders-and-black-weddings-what-the-1918-flu-teaches-us-about-coronavirus>. The U.S. Centers for Disease Control and Prevention (CDC) has stated that both physical and social distancing is helpful because COVID-19 “spreads mainly among people who are in close contact . . . [via] droplets from their mouth or nose [which] are launched into the air and land in the mouths or noses of people nearby” and that inhalation via the lungs is also possible. See *Social Distancing: Keep a Safe Distance to Slow the Spread*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html> (last updated Nov. 17, 2020). Further, because “people who are infected but do not have symptoms likely also play a role in the spread of COVID-19[.]” the virus may be unwittingly spread. *Id.* It is also the case that social isolation reduces the contact with surfaces and environments where the individual has less control over its cleanliness. *Id.*

<sup>18</sup> David Adam, *The Effects of Physical Isolation on the Pandemic Quantified*, THE SCIENTIST (Apr. 10, 2020), <https://www.the-scientist.com/news-opinion/the-effects-of-physical-isolation-on-the-pandemic-quantified-67407>.

<sup>19</sup> Emeline Han et al., *Lessons Learnt From Easing COVID-19 Restrictions: An Analysis of Countries and Regions in Asia Pacific and Europe*, 396 LANCET 1524, 1524–25 (2020); see *Policy Responses to COVID-19*, *supra* note 13.

the world thus far show that the varying degrees of physical isolation, viewed as “necessary,” are informed by the relative weight given to each of the above motivating factors. This results in significant variability among countries when comparing their interests and relative actions with respect to border closures.<sup>20</sup> Technology now plays a role in assisting governments in the local management of the pandemic, with the aim of improving both the health and economic position as quickly as possible.<sup>21</sup>

### III. BIOBANK DATA

Data retrieval through the use of digital technology is essential to governments and others to assist with providing timely responses in urgent circumstances, such as a pandemic.<sup>22</sup> In 2013, the European Commission published a report setting out, based on empirical evidence, its view on the best means of governing biobanks and biomolecular resource collections.<sup>23</sup> The Report notes that biobanks are a more recent phenomenon and mostly have developed from the rise of cancer research.<sup>24</sup>

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<sup>20</sup> Connor, *supra* note 16.

<sup>21</sup> U.N. Dep't of Econ. & Soc. Affairs, UN/DESA Policy Brief #61: COVID-19: Embracing Digital Government during the Pandemic and Beyond (Apr. 14, 2020), <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-61-covid-19-embracing-digital-government-during-the-pandemic-and-beyond/>.

<sup>22</sup> *Id.*

<sup>23</sup> See BIOBANKING AND BIOMOLECULAR RES. RSCH. INFRASTRUCTURE & EUR. RSCH. INFRASTRUCTURE CONSORTIUM (BBMRI-ERIC), BIOBANKS AND THE PUBLIC: GOVERNING BIOMEDICAL RESEARCH RESOURCES IN EUROPE 11 (2013), <https://www.bbmri-eric.eu/wp-content/uploads/BBMRI-Biobanks-and-the-Public.pdf> [hereinafter BBMRI Report], for a summary of research undertaken by the Working Group of Ethical, Legal, and Social Issues (ELSI) of the BioBanking and Biomolecular Resources Research Infrastructure (BBMRI) project. The Report makes several points regarding biological sampling, including that it occurs across a variety of sites and for a variety of purposes, that it comes in the advent of great interest by governments in public health in the eighteenth and nineteenth centuries, and that tissue samples have been stored “at least since the beginning of the 19th century.” *Id.*

<sup>24</sup> *Id.* at 13. Because researchers require large data samples, some biobanks are “created by compiling collections of samples and data from multiple research projects . . . .” See Maureen E. Smith & Sharon Aufox, *Biobanking: The Melding of Research with Clinical Care*, 1 CURRENT GENETIC MED. REP. 122, 123 (2013); see also Catherine A. McCarty et al., *The eMERGE Network: A consortium of biorepositories linked to electronic medical records*

Helpfully, the Report attempts to explain the word “biobank” as “an ambiguous term with more than one meaning, usually referring to a hybrid infrastructure that links collections of biological materials obtained from healthy or diseased individuals to diverse collections of medical or biomedical data, and including patient records.”<sup>25</sup> Because biobanks hold the medical samples and biological information around those samples, they are holders of valuable and confidential medical data.<sup>26</sup> The Report clarifies that the term “biobank” is not a strictly technical term, it “rather refers to a set of practices for collecting and storing biological materials, as well as medical and biomedical data.”<sup>27</sup> For the purposes of this paper, we adopt the broader practical definition of “biobank” to include biological, medical, and biomedical data.

The practice of medicine and related biological endeavors today are neither confined to professional practice, nor government laboratories, or hospitals. The growth of biobanking coincides with the commercial development of related research and private enterprises, which seek to exploit the collected information and samples for commercial gain.<sup>28</sup> An example of a for-profit enterprise is Amgen, a private shareholder-based multinational U.S.-based company.<sup>29</sup> Amgen is one of the world’s largest biotechnological companies, turning over approximately 25 billion USD per year.<sup>30</sup> Amgen and other private companies hold data that is private.<sup>31</sup>

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*data for conducting genomic studies*, BMC MED. GENOMICS, Jan. 26, 2011, at 2 (discussing various biobanks who cooperate with one another to further research by network, often between countries).

<sup>25</sup> BBMRI Report, *supra* note 23, at 13.

<sup>26</sup> *See id.* at 10.

<sup>27</sup> *Id.* at 14.

<sup>28</sup> Carlo Petrini, *Ethical and Legal Considerations Regarding the Ownership and Commercial Use of Human Biological Materials and Their Derivatives*, 3 J. BLOOD MED. 87, 88 (2012).

<sup>29</sup> AMGEN, <https://www.amgen.com/> (last visited Nov. 13, 2020).

<sup>30</sup> *Amgen Reports Second Quarter 2020 Financial Results*, AMGEN (July 28, 2020), <https://investors.amgen.com/news-releases/news-release-details/amgen-reports-second-quarter-2020-financial-results>.

<sup>31</sup> *Privacy Statement*, AMGEN, <https://www.amgen.com.au/privacy-statement/> (last visited Nov. 13, 2020). Amgen asserts that it is “careful to only collect and/or use personal identifiable information for the purposes stated in

It is not just the endeavor or enterprise of biobanking that is of concern, but it is also the variety of ways in which data is held, and the opportunity for cross-collaboration of biobank data between for-profit and non-profit institutions.<sup>32</sup> Cross-collaboration may present opportunities across manifold software platforms, which allows unrelated third-party interests to mine or acquire the data for their own unknown, and possibly commercial, purposes.<sup>33</sup>

The vast number of technological networks and collaborations that hold medical and biomedical information for a variety of uses, including, for example, the development of precision medicines to treat rare diseases,<sup>34</sup> means that it is possible for such data to assist in determining the likely spread of disease which is evident in countries where the data is shared, such as the United States, much of Europe, and parts of Asia-Pacific.<sup>35</sup> Where data sharing already exists—including the sale of data between private biobanks—it is possible that even further sharing may be used by governments who better

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our Privacy Authorization for our Patient Support Programs and as *necessary* to provide the services and/or programs the patient or customer chooses to enroll into.” *Amgen’s Privacy Pledge to U.S. Patients Enrolling in Patient Support Programs for Our Marketed Products*, AMGEN, <https://www.amgen.com/about/how-we-operate/policies-practices-and-disclosures/privacy-pledge-to-patients/> (last visited Nov. 13, 2020). “Amgen practices are consistent with *federal and state privacy laws*.” *Id.* “Amgen program enrollment is *voluntary* and *always* provides patients with *an easy option to cancel participation*.” *Id.*

<sup>32</sup> See Smith & Aufox, *supra* note 24, at 123.

<sup>33</sup> See *id.* at 125–26, for a discussion concerning the informational power surrounding the aggregation and sharing of data for research and clinical implementation. This includes unwitting stakeholders. See also Byron Tau, *U.S. Government Contractor Embedded Software in Apps to Track Phones*, WALL ST. J. (Aug. 7, 2020, 10:00 AM), <https://www.wsj.com/articles/u-s-government-contractor-embedded-software-in-apps-to-track-phones-11596808801> (reporting that Anomaly Six LLC, a U.S. Virginia-based company, maintains ties to the U.S. defense and intelligence communities who are contact-tracing hundreds of millions of mobile phones worldwide).

<sup>34</sup> See, for example, *Mission and Goals*, NAT’L INST. HEALTH, <https://www.nih.gov/about-nih/what-we-do/mission-goals> (last updated July, 27, 2017), which is one agency that “develop[s], maintain[s], and renew[s] scientific human and physical resources that will ensure the Nation’s capability to prevent disease . . .”

<sup>35</sup> Han, *supra* note 19, at 1526–27.

understand exposure to diseases in order to determine where a pandemic, such as COVID-19, exists.<sup>36</sup> The difficulty of identifying when it is necessary to make such determinations remains. There is little doubt, however, that this is a whole-of-society problem, rather than one confined to a geographic region or particular government purview.<sup>37</sup> It is also complex because the vast store of private and public biomedical and medical information allows for analysis in unexpected purposes, such as utilization for widespread public analysis.<sup>38</sup> This, in turn, allows for the development of a coalition of interests in using the information in the circumstances of the COVID-19 pandemic.<sup>39</sup>

Furthermore, existing databases that can be shared may be enhanced by the addition of information gathered from apps installed by individuals. Generally, and of more concern in

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<sup>36</sup> For example, at the outbreak of COVID-19, “China established a nationwide telecom data analysis platform under the leadership of the Ministry of Information Industry Technology” allowing telecom carriers to provide a tracking record of cell phone users’ locations for up to thirty days. *Contact tracing apps: A new world for data privacy*, NORTON ROSE FULBRIGHT (Oct. 2020), <https://www.nortonrosefulbright.com/en-us/knowledge/publications/d7a9a296/contact-tracing-apps-a-new-world-for-data-privac> [hereinafter Norton Rose Fulbright Study].

<sup>37</sup> See *Open access to facilitate research and information on COVID-19*, UNESCO, <https://en.unesco.org/covid19/communicationinformationresponse/opensolutions> (last visited Nov. 13, 2020).

<sup>38</sup> See Sherrie Xie et al., *Enhancing Electronic Health Record Data with Geospatial Information*, 2017 AMIA JOINT SUMMITS ON TRANSNAT’L SCI. PROC. 123, 123–32, for an example of a coalition that is already engaged in other contexts, such as geospatial analysis combined with electronic health records to improve diagnosis and assist asthma patients. Specifically, these proceedings note that “[s]ignificant geospatial variability of asthma exacerbations w[ere] found using generalized additive models, even after adjusting for demographic factors” and that the “work shows that geospatial data can be used to cost-effectively enhance EHR [electronic health record] data.” *Id.* at 123.

<sup>39</sup> This warrants further thought and development. See generally FLORIAN RABITZ, *THE GLOBAL GOVERNANCE OF GENETIC RESOURCES: INSTITUTIONAL CHANGE AND STRUCTURAL CONSTRAINTS* (2017); and CHRISTINA SAMPOGNA, *CREATION AND GOVERNANCE OF HUMAN GENETIC RESEARCH DATABASES* (2006), for discussions regarding the commonality governance architecture in world politics with genetic resources to attempt to remove asymmetries and garner widespread access and benefit-sharing.

recent times, are government directives that claim that the use of personal data gathering is justifiable to safeguard individuals and others in their particular geographic location. Governments or private providers, as such, who hold valuable data can no longer guarantee that the data will be used solely for one purpose, or, at best, for purposes consistent with the intended reason stated for the collection of the data. This is because the transfer and sharing of biomedical and medical data will inevitably become caught up in the collision of data and analytics.<sup>40</sup> This, in turn, means that soon, private providers will not be the keepers of the data who control the users of such data.<sup>41</sup> Based on trends observed in 2020, we predict that the traditional data and analytics roles in information technology (IT) will remain in diminishing prominence and that other stakeholders, such as those representing consumer use, research applications, planning, and other exploratory purposes, will become more apparent.<sup>42</sup> This means that biobanking, along with cross-sharing of data, will not only just continue to occur, but from a variety of sources. What is more troublingly is that the data will be mined and used by any interested party able to obtain legal (or illegal) access.<sup>43</sup> Much has been written around the potential privacy issues that arise from these increasingly complex possibilities.<sup>44</sup>

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<sup>40</sup> See Laurence Goasduff, *Gartner Top 10 Trends in Data and Analytics for 2020*, GARTNER (Oct. 19, 2020), <https://www.gartner.com/smarterwithgartner/gartner-top-10-trends-in-data-and-analytics-for-2020/>.

<sup>41</sup> See *id.*

<sup>42</sup> This is an entirely reasonable prediction given the pace at which data is being collected and the variety of uses to which it is being put to use. See *also id.* (noting the rapid effect graph technologies are expected to have on the ability to collect and analyze data retrieved from organizations, people, and transactions by 2023).

<sup>43</sup> The question of *illegal* access is important but lies beyond the scope of this paper. See Wencheng Yang & Song Wang, *Fingerprint and face scanners aren't as secure as we think they are*, CONVERSATION (Mar. 5, 2019, 11:00 PM), <https://theconversation.com/fingerprint-and-face-scanners-arent-as-secure-as-we-think-they-are-112414>, for a list of ways in which biometric data security might be breached.

<sup>44</sup> Matthew B. Kugler, *From Identification to Identity Theft: Public Perceptions of Biometric Privacy Harms*, 10 U.C. IRVINE L. REV. 107, 108 (2019); see also JP Raynal, Note, *With Great Technology Comes Great Responsibility: Why Smartphone Users' Biometric Data Needs to Be Protected*, 48 HOFSTRA L.

## IV. CONTACT TRACING

Mobile computer applications are important because they enable contact-tracing, the ability to trace and monitor the contacts of infected people, and the follow-on implications associated with a disease.<sup>45</sup> Such contact tracing is critical to containing the disease and subsequent economic recovery.<sup>46</sup> Contact-tracing apps, therefore, assist governments in determining likely infection and specific areas requiring isolation, which is consistent with the leading historical indicator of curbing pandemics via the physical isolation of populations.<sup>47</sup> Contact tracing is additionally useful because it

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REV. 179, 179–80 (2019) (discussing cell phones); Lauren Stewart, *Big Data Discrimination: Maintaining Protection of Individual Privacy Without Disincentivizing Businesses' Use of Biometric Data to Enhance Security*, 60 B.C. L. REV. 349, 349–50 (2019) (discussing data discrimination); Jordan T. Shewmaker, Note, *New Frontiers in Medical Privacy: Protecting the Biometric Data of Patients in the Healthcare Industry*, 106 KY. L. J. 813, 815 (2018) (discussing medical collection in hospitals); Grayson Colt Holmes, Note, *The New Employment Verification Act: The Functionality and Constitutionality of Biometrics in the Hiring Process*, 43 CONN. L. REV. 673, 678 (2010) (discussing employment); Margaret Hu, *Biometric Cyberintelligence and the Posse Comitatus Act*, 66 EMORY L. J. 697, 699 (2017) (discussing military surveillance); David Uberti, *Police Requests for Google Users' Location Histories Face New Scrutiny*, WALL ST. J. (July 27, 2020, 5:30 AM), <https://www.wsj.com/articles/police-requests-for-google-users-location-histories-face-new-scrutiny-11595842201> (discussing law enforcement); *Google Helps Police With Geofence Warrants But Warns of Potential Privacy Problems*, WALL ST. J. PRO: CYBERSECURITY (July 27, 2020, 8:45 AM), <https://www.wsj.com/articles/cyber-daily-google-helps-police-with-geofence-warrants-but-warns-of-potential-privacy-problems-blackbaud-hack-buggy-email-at-election-offices-11595853947?st=s2nk1yc826toap5> (discussing law enforcement). Note that this problem is not germane to the health industry and in banking and finance, similar issues arise. See Meredith E. Bock, *Biometrics and Banking: Assessing the Adequacy of the Gramm-Leach-Bliley Act*, 24 N.C. BANKING INST. 309, 309–10 (2020), for an argument that the Gramm-Leach-Bliley Act's (GLBA) privacy provisions should be updated to cope with biometric privacy issues.

<sup>45</sup> See *Contact Tracing: Get and Keep America Open: Supporting states, tribes, localities, and territories*, CTR. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/coronavirus/2019-ncov/php/open-america/contact-tracing/index.html> (last updated Nov. 10, 2020).

<sup>46</sup> See Aaron Hutchins, *Coronavirus: The bearers of bad news: Contact tracers are the new front line in our pandemic battle and economic recovery depends on them. No pressure, there*, MACLEAN'S, Aug. 2020 at 48, 51–52.

<sup>47</sup> See Robert Hinch et. al., *Effective Configurations of a Digital Contact*

helps avoid the total shutdown of a country or a region's economy as a large-scale response to a pandemic.<sup>48</sup>

Contact-tracing apps were developed to help tackle the SARS-CoV-2 pandemic and are based on two components.<sup>49</sup> First, the technological component requires that there is precision in determining the location of an event as well as the protection of data about a person being kept secure.<sup>50</sup> Second, the epidemiological component must be sound and sensitivity analysis tested in simulation so that the app can be audited and optimized as data becomes available.<sup>51</sup>

The success of a contact-tracing app is measured by its ability to reduce onward transmission of a virus and, according to the NHSX Report, its simultaneous impact on “minimising the number of people in quarantine.”<sup>52</sup> It seems that the latter impact might usually be followed by control of transmission of the virus. Nonetheless, whether a reduction of those who might have otherwise been quarantined is a difficult matter of estimation since it posits a known quantity—the number of people in fact quarantined, against the more difficult-to-determine unknown number that *might* have been in quarantine—but for the operation of the contact-tracing app. The success of such an app, at least for the NHSX Report, will be enhanced where self-reporting of symptoms is prevalent, along with rapid follow up of cases.<sup>53</sup> In some countries, because people over the age of 70 are unlikely to utilize cell phones and have an increased vulnerability to COVID-19, the NHSX Report

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*Tracing App: A report to NHSX* 1–2 (Apr. 16, 2020, [https://cdn.theconversation.com/static\\_files/files/1009/Report\\_-\\_Effective\\_App\\_Configurations.pdf?1587531217](https://cdn.theconversation.com/static_files/files/1009/Report_-_Effective_App_Configurations.pdf?1587531217) [hereinafter NHSX Report]). See also *Contact tracing apps: Which countries are doing what*, ETHEALTHWORLD (Apr. 29, 2020), <https://health.economictimes.indiatimes.com/news/diagnostics/contact-tracing-apps-which-countries-are-doing-what/75440095>, for an outline of the movement toward contact tracing apps.

<sup>48</sup> NHSX Report, *supra* note 47 at 2.

<sup>49</sup> *Id.* at 1.

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

<sup>52</sup> *Id.* at 2.

<sup>53</sup> *Id.*

recommends that they fully or partially self-isolate.<sup>54</sup> The NHSX Report also finds that under those circumstances “the epidemic can be suppressed with 80% of all smartphone users using the app . . . .”<sup>55</sup> Additional information on how the NHSX Report models information and makes assumptions is contained therein.<sup>56</sup>

One issue arising from the above is the use of smartphones which is required, as well as the self-reporting required to ensure the integrity of gathered data. It is not clear whether any country has succeeded in achieving those twin goals, or more generally, that any has been able to report that contact-tracing apps have been successful in containing COVID-19.<sup>57</sup>

Various reasons are posited for both the success and lack thereof of contact-tracing apps. One reason is the reluctance of some countries to use the Apple-Google “decentralized” frameworks for contact tracing apps, which are not based on GPS tracking, but rather Bluetooth<sup>®</sup> technology in order to protect user data and to extend the range of the app while traveling.<sup>58</sup> The key point is whether a Bluetooth<sup>®</sup> contact-tracing app has the ability to be designed with a guarantee that user privacy and security are embedded features.<sup>59</sup>

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<sup>54</sup> NHSX Report, *supra* note 47 at 2.

<sup>55</sup> *Id.* at 3.

<sup>56</sup> *See id.* at 8–11, 13–15, 22–29 (utilizing graphs and models to support assumptions based on self-diagnoses, contact-tracing, and utilization of an app).

<sup>57</sup> Ryan Browne, *Why coronavirus contact-tracing apps aren't yet the 'game changer' authorities hoped they'd be*, CNBC (July 3, 2020, 9:07 AM), <https://www.cnbc.com/2020/07/03/why-coronavirus-contact-tracing-apps-havent-been-a-game-changer.html>.

<sup>58</sup> *Id.*; see also *Privacy-Preserving Contact Tracing*, APPLE: COVID-19 <https://www.apple.com/covid19/contacttracing> (last visited Nov. 14, 2020), for the discussion of the joint initiative between Google and Apple to assist governments with “reduc[ing] the spread of the virus with user privacy and security central to the design” by using Bluetooth technology.

<sup>59</sup> Apple and Google do not *guarantee* the user privacy of those downloading their contact-tracing app, but rather say their Bluetooth technology will “*help* governments and health agencies reduce the spread of the virus . . . .” *See Privacy-Preserving Contract Tracing, supra* note 58 (emphasis added).

It seems that user privacy and security cannot be guaranteed, which is a vexing issue. If it is then of sufficient concern that individuals will not download a contact-tracing app on their phone at all. Of those who do load such an app, there might be variability around whether the app is correctly installed, whether it is installed but then uninstalled, and, where the function exists, whether the installed app is activated at all, some of the time, or all of the time. All of these activation options affect the ability of the app to gather and report data.<sup>60</sup> This, in turn, makes it difficult to ascertain the ideal number of users as per the NHSX Report's model.<sup>61</sup> How governments have determined the correct amount of social isolation definitively put in place in the absence of contact-tracing apps operating at desired functional levels, appears to be a matter of "guesstimating." Australia—whose constitutional makeup is that of a Federation—is a prime example of one of the various State governments that have simply closed borders between states due to a rise in reported instances of COVID-19.<sup>62</sup> Those border closures have, for the most part, been against the recommendations of the Australian Commonwealth (federal) government and, in two cases, have caused constitutional challenges to be raised by citizens.<sup>63</sup>

## V. THE COVIDSAFE APP

On March 18, 2020, Governor-General of Australia David Hurley, pursuant to section 475 of the Australian Biosecurity

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<sup>60</sup> See David Nield, *How to restrict the amount of data apps collect about you*, NEWS ATLAS (Mar. 26, 2018), <https://newatlas.com/data-collection-and-privacy/53959/>.

<sup>61</sup> See NHSX Report, *supra* note 47, at 3.

<sup>62</sup> Jason Scott & Edward Johnson, *Australia's Most Populous States Close Their Border After Coronavirus Cases Spike*, TIME (July 6, 2020, 4:36 AM), <https://time.com/5863138/australia-victoria-new-south-wales-coronavirus-spike-border/>.

<sup>63</sup> One challenge was raised by a politician and the other raised by a businessperson. See Kyle Bridge, *State border closures and the Australian Constitution – are they legal?*, KELLS (June 15, 2020), <https://www.kells.com.au/insights/local-government/state-border-closures-and-the-australian-constitution-are-they-legal/>; Thomas Allen, *Open The Borders - A High Court Australia Constitutional Challenge*, ARMSTRONG LEGAL, <https://www.armstronglegal.com.au/open-the-borders-a-high-court-australia-constitutional-challenge/> (last visited Nov. 14, 2020).

Act 2015 (the Biosecurity Act),<sup>64</sup> made a declaration to particularly address COVID-19.<sup>65</sup> The First COVID-19 Declaration,<sup>66</sup> asserted that COVID-19 had entered Australia and had pandemic potential.<sup>67</sup> The declaration has since been extended pursuant to the powers contained in section 476 of the Biosecurity Act.<sup>68</sup> These are wide powers accompanied by fines

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<sup>64</sup> “The Governor-General may declare that a human biosecurity emergency exists if the Health Minister is satisfied that: (a) a listed human disease is posing a severe and immediate threat, or is causing harm, to human health on a nationally significant scale; and (b) the declaration is necessary to prevent or control: (i) the entry of the listed human disease into Australian territory or a part of Australian territory; or (ii) the emergence, establishment or spread of the listed human disease in Australian territory or a part of Australian territory.” *Biosecurity Act 2015* (Cth) ch 8 pt 2 div 2 s 475 (Austl.) [hereinafter *Biosecurity Act of 2015*].

<sup>65</sup> The Governor-General of Australia, being the representative of Queen Elizabeth II, is Australia’s Head of State and the Commander-in-Chief of the Australian Defence Force. *About the Governor-General: The role of the Governor-General*, GOVERNOR-GEN. COMMONWEALTH AUSTR., <https://www.gg.gov.au/about-governor-general/role-governor-general> (last visited Nov. 14, 2020). His Excellency General, the Honorable David Hurey AC DSC (Ret.) took the advice of the Health Minister to declare a human biosecurity emergency with respect to COVID-19 pursuant to section 475 of the Biosecurity Act. *Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Declaration 2020* (Cth) (Austl.) [hereinafter First COVID-19 Declaration]. Section 6 of the Declaration states: “[h]uman coronavirus with pandemic potential is an infectious disease: (a) that has entered Australian territory; and (b) that is fatal in some cases; and (c) that there was no vaccine against, or antiviral treatment for, immediately before the commencement of this instrument; and (d) that is posing a severe and immediate threat to human health on a nationally significant scale.” *Id.* s 6.

<sup>66</sup> Section 7 of the First COVID-19 Declaration states that the declaration ends on the last day of three months from the date of registration of the instrument. First COVID-19 Declaration, *supra* note 65, s 7. Accordingly, a second declaration was issued, effective May 15, 2020, with a sunset provision effective September 17, 2020. *Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Variation (Extension) Instrument 2020* (Cth) ss 2, 4 (Austl.) [hereinafter Second COVID-19 Declaration].

<sup>67</sup> First COVID-19 Declaration, *supra* note 65, s 6.

<sup>68</sup> *Biosecurity Act of 2015*, *supra* note 64, ch 8 pt 2 div 2 s 476. Section 476 of the Biosecurity Act allows the biosecurity emergency period to vary over a period of up to three months, in this case, an extension, where the Health Minister is satisfied that the disease continues to pose a severe and immediate threat, or is causing harm on a national scale, and, that the extension is necessary to prevent or control the entry of the disease into Australia or the

or imprisonment where directions are not followed.<sup>69</sup> It is apparent then, that the Australian government had the power, once the declaration was made, for its Health Minister to make emergency requirements and directions in respect of contact-tracing.<sup>70</sup> While traditional measures such as border closure and self-isolation have been introduced, no compulsory contact-tracing arrangements have been made; although it is suggested that section 477 of the Act allows a decision of this nature,<sup>71</sup> thus allowing for an overriding of the usual privacy protections offered to citizens in non-crisis times.

One of the interesting international aspects of COVID-19 is the different measures taken by governments worldwide,<sup>72</sup> as well as commentary on the effectiveness of implemented measures.<sup>73</sup> While contact-tracing is mentioned in the literature, it is not distinguished from other containment measures, including physical distancing. Moreover, it remains unclear whether containment measures in general are universally effective.<sup>74</sup> As a caveat to this observation, it is clear

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establishment or spread of the disease. *Id.*

<sup>69</sup> *Id.* ch 8 pt 2 div 6 s 479. Section 479 of the Biosecurity Act states that a person who fails to comply with directions will commit an offense, carrying a penalty of five years imprisonment. *Id.*

<sup>70</sup> *See id.* s 477.

<sup>71</sup> *See id.* s 477(1). Section 477(1) of the Biosecurity Act authorized the Health Minister to make any determination deemed necessary. *Id.*

<sup>72</sup> *See* Hannah Ritchie et al., *Coronavirus Pandemic (COVID-19)*, OUR WORLD DATA, <https://ourworldindata.org/coronavirus> (last updated Nov. 14, 2020). The measures taken by governments and the relation of the number of cases of COVID-19 compared with measures taken may be “tracked” on numerous websites. *See, e.g., id.*; *Track government measures on COVID-19 with the Oxford Government Response Tracker*, EUR. DATA PORTAL (Sept. 4, 2020), <https://www.europeandataportal.eu/it/impact-studies/covid-19/track-government-measures-covid-19-oxford-government-response-tracker> [hereinafter *Oxford Gov't Response Tracker*].

<sup>73</sup> *See, for example, Rabail Chaudhry et al., A country level analysis measuring the impact of government actions, country preparedness and socioeconomic factors on COVID-19 mortality and related health outcomes, LANCET: ECLINICALMEDICINE, July 2020, at 1, 1, for an unsurprising suggestion that “low levels of national preparedness, scale of testing and population characteristics were associated with increased national caseload and overall mortality.”*

<sup>74</sup> *See id.* at 2. The authors note that “[m]easures such as the detection and isolation of infected individuals, contact-tracing, quarantine measures,

that the means of implementation, such as the restrictiveness of interventions and the strictness of their enforcement, all have an important role to play in their effectiveness; hence, the interest in and importance of research that includes shared and updated data for comparison.

Various countries have touted or developed contact tracing apps, including the UK's National Health Service (NHS),<sup>75</sup> Germany,<sup>76</sup> Singapore,<sup>77</sup> Japan,<sup>78</sup> and others.<sup>79</sup> MIT has even created a website to track the various reiterations of contact

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physical distancing, and closure of non-essential businesses have become major components of public health guidance, aiming to reduce the spread of further infection, and prevent health system strain[,]” and furthermore, “[a]lthough containment measures implemented in countries such as China, South Korea, and Taiwan have reduced new cases by more than 90%, this has not been the case in many other countries such as Italy, Spain and the United States.” *Id.*

<sup>75</sup> Gareth Iacobucci, *Sixty seconds on . . . the contact tracing app*, 369 *BMJ* 169, 171 (2020), [https://www.bmj.com/bmj/section-pdf/1026718?path=/bmj/369/8244/This\\_Week.full.pdf](https://www.bmj.com/bmj/section-pdf/1026718?path=/bmj/369/8244/This_Week.full.pdf). This announced a trial on the Isle of Wight, *id.*, which was later dropped in favor of an app based on the Google and Apple model. See Jacqui Wise, *UK drops its own contact tracing app to switch to Apple and Google model*, 369 *BMJ* 463, 466–67 (2020), [https://www.bmj.com/bmj/section-pdf/1029956?path=/bmj/369/8251/This\\_Week.full.pdf](https://www.bmj.com/bmj/section-pdf/1029956?path=/bmj/369/8251/This_Week.full.pdf).

<sup>76</sup> Dominik Rehse, *Contact-Tracing-App: Mit Anreizen und Tempo zur App [Contact-Tracing: With incentives and speed for App]*, 100 *WIRTSCHAFTSDIENST* 310, 311 (2020), <https://www.econstor.eu/bitstream/10419/221988/1/10-1007-s10273-020-2642-2.pdf>. Germany eventually adopted the Google/Apple model after the announcement of a joint effort by Deutsche Telekom and SAP. *Id.*

<sup>77</sup> *Trace Together, Safer Together*, TRACE TOGETHER, <https://www.tracetoegether.gov.sg/55/> (last visited Oct. 15, 2020). The Government Technology Agency of Singapore advertised an incentive for their app users with the opportunity to “win \$55 Vouchers when you use Trace Together and Safe Entry.” *Id.* Singapore is credited with creating the world’s first major Bluetooth contact tracing app. See Charlotte Jee, *Is a successful contact tracing app possible? These countries think so*, *MIT TECH REV.* (Aug. 10, 2020), <https://www.technologyreview.com/2020/08/10/1006174/covid-contract-tracing-app-germany-ireland-success>.

<sup>78</sup> The June 2020 launch of the Japanese app, “Cocoa” (contact-confirming application), has been difficult. See Satoshi Sugiyama, *Japan’s contact-tracing app suspended again to fix input glitch preventing alerts*, *JAPAN TIMES* (July 11, 2020), <https://www.japantimes.co.jp/news/2020/07/11/national/japans-contact-tracing-app-glitch/>.

<sup>79</sup> Jee, *supra* note 77.

tracing apps throughout the world.<sup>80</sup>

On April 26, 2020, the Australian federal government launched the COVIDSafe Software Application (the app).<sup>81</sup> The Australian Prime Minister suggested that the more people who download the app,<sup>82</sup> the safer the app users, their family, and their community would be, and ultimately, by downloading this app, the sooner safety restrictions would be lifted, allowing businesses to recover.<sup>83</sup> From the moment the app launched, the physical distancing measures—that are the hallmark of population health measures for pandemics—were connected to the country’s economic prosperity.<sup>84</sup> Furthermore, the media

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<sup>80</sup> Patrick Howell O’Neill, Tate Ryan-Mosley & Bobbie Johnson, *A flood of coronavirus apps are tracking us. Now it’s time to keep track of them*, MITTECH. REV. (May 7, 2020), <https://www.technologyreview.com/2020/05/07/1000961/launching-mittr-covid-tracing-tracker/>. The authors note that “[t]here’s a deluge of apps that detect your covid-19 exposure, often with little transparency” and that the “Covid Tracing Tracker project will document them.” *Id.* By August 2020, the database had documented 25 individual contact tracing efforts around the world. *Id.*

<sup>81</sup> Media Release, Prime Minister of Australia, et al., *COVIDSafe: New App to Slow the Spread of Coronavirus* (Apr. 26, 2020, 3:13 PM), <https://www.pm.gov.au/media/covidsafe-new-app-slow-spread-coronavirus> [hereinafter Media Release].

<sup>82</sup> According to the Australian Government, the app functions as follows: “[w]hen 2 or more app users come close to each other their phones exchange Bluetooth® signals and make a series of digital handshakes.” *Background to COVIDSafe, Close Contact Information: How COVIDSafe identifies close contact*, AUSTL. GOV’T, <https://covidsafe.gov.au/background.html> (last visited Nov. 15, 2020). Then, “COVIDSafe notes the encrypted information held on your phone through the strength of Bluetooth® signals. Once the information is uploaded to the National COVIDSafe Data Store, it is then filtered so that state and territory health officials can access close contacts.” *Id.* “The proximity for a close contact is approximately 1.5 meters, for a period of 15 minutes or more.” *Id.*

<sup>83</sup> Media Release, *supra* note 81. As part of the media release, the Minister for Health, Greg Hunt, stated: “[w]e are now calling on all Australians to download the COVIDSafe app to help protect you, your family and your community from further spread of COVID-19[which] will be necessary if we are to start easing some of the difficult social distancing restrictions we have had to put in place” and he noted that the app “will be one of the critical tools . . . use[d] to help protect the health of the community by quickly alerting people who may be at risk of having contact with COVID-19.” *Id.*

<sup>84</sup> *See id.* The release indicated that “[t]he app . . . received strong support

release clearly asserted that the data collected will be used for the health and safety of the country, that the data cannot be accessed by anyone outside the government tracing scheme, and that a misuse of the data will result in criminal prosecution.<sup>85</sup> Moreover, all of the data will be destroyed once the pandemic is over.<sup>86</sup>

The voluntariness of the app is the key difficulty because it requires an individual to download the app on their phone and, if they are using an Apple iOS platform, to activate the app's operation.<sup>87</sup> The app has failed to be adopted in sufficient quantity and, therefore, it is difficult for the app to collect the posited "sufficiency"<sup>88</sup> of data that is needed to be useful in containing the pandemic.<sup>89</sup> That, in turn, may diminish the public appetite to voluntarily adopt the app. It also reduces the clarity around desired isolation parameters, where privacy and economic considerations make that a complex decision.

We submit that the primary reason for the lack of adoption

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from states and territories and the health sector, which recognise it is a valuable tool that will enhance the ability to respond rapidly to local outbreaks, and the confidence to know the virus is not silently spreading throughout communities." *Id.*

<sup>85</sup> *Id.* Pursuant to the Biosecurity Act, whose broad charter is the management of biosecurity threats, including human health within Australia and its external territories, it is to be amended to cater to the effective introduction of the app. *Id.*

<sup>86</sup> See *COVIDSafe app, After the pandemic*, AUSTRALIAN DEPARTMENT OF HEALTH, <https://www.health.gov.au/resources/apps-and-tools/covidsafe-app#after-the-pandemic> (last updated Oct. 28, 2020) ("When the Minister for Health declares the COVID-19 pandemic over, users will be prompted to delete the app from their phone. This will delete all app information on a person's phone. The information contained in the National COVIDSafe Data Store will also be destroyed at the end of the pandemic.").

<sup>87</sup> See Austl. Dep't of Health, *Coronavirus: Information on how to download the COVIDSafe app*, YOUTUBE (June 4, 2020), <https://www.youtube.com/watch?v=V4lTSRhyqaU>.

<sup>88</sup> See Patrick Howell O'Neill, *No, coronavirus apps don't need 60% adoption to be effective*, MIT TECH. REV. (June 5, 2020), <https://www.technologyreview.com/2020/06/05/1002775/covid-apps-effective-at-least-60-percent-download/>.

<sup>89</sup> See Chiara Farronato et al., *How to Get People to Actually Use Contact-Tracing Apps*, HARV. BUS. REV. (July 15, 2020), <https://hbr.org/2020/07/how-to-get-people-to-actually-use-contact-tracing-apps>.

is not one of the widely cited reasons, such as concerns around data privacy or “function creep” (the use of contact-tracing information gathered being utilized for purposes other than originally intended, such as by law enforcement bodies),<sup>90</sup> but rather because the Australian government failed to mandate its adoption, notwithstanding the government’s full power to do so.<sup>91</sup> Before examining a mandated app in detail, it is first necessary to consider the “noise” around the use, or lack of use, of the Australian app to date.

Despite the Australian government’s assurances that data gathered by the app is secure and that any breach of security would be followed by criminal prosecution,<sup>92</sup> Australians have not embraced the app, notwithstanding the Department of Health commissioning a Private Impact Assessment to address and mitigate any identified privacy risks for the app.<sup>93</sup> The Norton Rose Fulbright comparative study suggests that some of the possible reasons explaining why the app has not been widely adopted are due generally to user privacy concerns.<sup>94</sup>

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<sup>90</sup> Norton Rose Fulbright Study, *supra* note 36; see also Rae Thomas et al., *More than privacy: Australians’ concerns and misconceptions about the COVIDSafe App: a short report*, MEDRXIV, June 9, 2020, at 1, for a survey discussing “that the reasons for not downloading included privacy concerns, phone capabilities, and beliefs of limited benefit.” “COVIDSafe knowledge varied with confusion about purpose and capabilities. Public health messaging will need to address these perceptions to achieve sufficient uptake.” *Id.*

<sup>91</sup> See *COVIDSafe app, Privacy*, AUSTL. DEPT HEALTH, <https://www.health.gov.au/resources/apps-and-tools/covidsafe-app#privacy> (last updated Oct. 28, 2020); *Biosecurity Act of 2015*, *supra* note 64, s 477(1).

<sup>92</sup> Media Release, *supra* note 81. Initially, privacy protections were contained in the First COVID-19 Declaration. See First COVID-19 Declaration, *supra* note 65. Privacy protections were also contained in the Second COVID-19 Declaration. See Second COVID-19 Declaration, *supra* note 66. On May 15, 2020, these were disestablished and enacted as changes to the Privacy Act (1988), which “was introduced to promote and protect the privacy of individuals and to regulate how Australian Government agencies and organisations with an annual turnover of more than \$3 million, and some other organisations, handle personal information.” *Privacy Act 1988* (Cth) (Austl.).

<sup>93</sup> See MADDOCKS, DEPT. OF HEALTH: THE COVIDSAFE APPLICATION: PRIVACY IMPACT ASSESSMENT pt. A, 3–13 (2020), <https://www.health.gov.au/sites/default/files/documents/2020/04/covidsafe-application-privacy-impact-assessment-covidsafe-application-privacy-impact-assessment.pdf>.

<sup>94</sup> See Norton Rose Fulbright Study, *supra* note 36.

Specifically, their report suggests that “function creep” might be a factor, although the Privacy Act (1988) was amended in 2020<sup>95</sup> to clarify that the information gathered is private.<sup>96</sup> The app does not use GPS (location tracking) and, therefore, the initial concerns around the government using the app to track people have been somewhat allayed.<sup>97</sup> The source code for the app was released on a GitHub repository,<sup>98</sup> allowing interested stakeholders to review it in order to provide a measure of restoring faith in the privacy of collected data. The Australian government also sought assurances via an independent cybersecurity review<sup>99</sup> of the app<sup>100</sup> and sought to address technical concerns around the effectiveness of the app on an iOS operating system.<sup>101</sup>

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<sup>95</sup> *Id.*; see generally *Privacy Amendment (Public Health Contact Information) Act 2020* (Cth) (Austl.) [hereinafter *Privacy Act Amendment*]. The purpose of the amendments to the Privacy Act was to provide for a range of offenses and privacy protections in relation to the collection, use, disclosure, and deletion of data in connection with the COVIDSafe contact tracing app. Explanatory Memorandum, *Privacy Amendment (Public Health Contact Information) Bill 2020* (Cth) 4 (Austl.). The Bill was passed by both houses on May 20, 2020. *Id.*

<sup>96</sup> See *Privacy Act Amendment*, *supra* note 95, p VIIIA div 1. Specifically, section 94B of the Privacy Amendment states that the object of the amendment is “to assist in preventing and controlling the entry, emergence, establishment or spread of the coronavirus known as COVID-19 into Australia or any part of Australia by providing stronger privacy protections for COVID app data and COVIDSafe users in order to: (a) encourage public acceptance and uptake of COVIDSafe; and (b) enable faster and more effective contact tracing.” *Id.* p VIIIA div 1 s 94B.

<sup>97</sup> See Austl. Dep’t of Health, *Background to COVIDSafe, Privacy and Security – COVIDSafe cannot track location*, AUSTL. GOV’T, <https://covidsafe.gov.au/background.html#COVIDSafe-cannot-track-location> (last visited Oct. 19, 2020).

<sup>98</sup> *COVIDSafe*, GITHUB, <https://github.com/AU-COVIDSafe> (last visited Nov. 15, 2020).

<sup>99</sup> See generally CYBER SEC. COOP. RSCH. CTR., <https://www.cybersecuritycrc.org.au/#research-programs> (last visited Nov. 15, 2020), for background information regarding the research team that conducted an assessment on Australia’s COVIDSafe app.

<sup>100</sup> See, e.g., Jane Norman, *Coronavirus tracing app given thumbs up by independent cyber security agency*, ABC NEWS (Apr. 21, 2020, 10:19 AM), <https://www.abc.net.au/news/2020-04-21/cyber-agency-supports-security-coronavirus-tracing-app/12168136> (exemplifying how the review obtained national attention).

<sup>101</sup> See *COVIDSafe app, Privacy*, *supra* note 91. See also *COVIDSafe app*,

The Norton Rose Fulbright comparative study also canvasses the private sector concerns arising from the use of the app.<sup>102</sup> For Australia, the study notes that “the data in the COVIDSafe App can not be used by private organisations.”<sup>103</sup> Also, it is noted that while Amazon Web Services (AWS) provides infrastructure and support, the Australian government stated that the U.S. government does not have access to the data in the hands of AWS.<sup>104</sup> This has been challenged by legal experts warning that AWS must still respond to a U.S. subpoena issued to them.<sup>105</sup> The other private sector concern is that there tends to be a centralization of private information with the new COVID-19 measures in place.<sup>106</sup> However, this is balanced against the need for the government to ensure the safety of its population such that some adverse impact on privacy will occur.<sup>107</sup> There are currently no alternate de-centralized approaches in play.

It is apparent that there is a range of issues related to

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AUSTL. DEP'T HEALTH, <https://www.health.gov.au/resources/apps-and-tools/covidsafe-app> (last updated Oct. 28, 2020), for regular updates made by the Australian Government Department of Health regarding the status and operation of the app.

<sup>102</sup> Norton Rose Fulbright Study, *supra* note 36. This is interesting because it acknowledges that the app, and the wider issue of COVID-19 and data security, is a public-private agglomeration, rather than a public sector responsibility. *See supra* Section II.

<sup>103</sup> Norton Rose Fulbright Study, *supra* note 36.

<sup>104</sup> *Id.*

<sup>105</sup> Dylan Welch & Linton Besser, *Experts warn there are still legal ways the US could obtain COVIDSafe data*, ABC NEWS (Apr. 27, 2020, 9:38 PM), <https://www.abc.net.au/news/2020-04-28/covidsafe-tracing-app-data-may-not-be-protected-from-usa/12189372>; *see also* Chris Duckett, *Home Affairs says US CLOUD Act will not be able to penetrate Hunt COVIDSafe Directive*, ZDNET (May 5, 2020), <https://www.zdnet.com/article/home-affairs-says-us-cloud-act-will-not-be-able-to-penetrate-hunt-covidsafe-directive/> (noting prior negotiations with the U.S. Department of Justice that each countries' laws will prevail, respectively, with regard to data stored).

<sup>106</sup> *See* Brandi Vincent, *NIH Unveils Centralized Resource for COVID-19 Patient Data*, NEXTGOV (June 16, 2020), <https://www.nextgov.com/analytics-data/2020/06/nih-unveils-centralized-resource-covid-19-patient-data/166198/>.

<sup>107</sup> *See* Muneeb Ali, *Decentralization: Preserving Personal Privacy While Fighting COVID-19*, COINTELEGRAPH, (June 7, 2020), <https://cointelegraph.com/news/decentralization-preserving-personal-privacy-while-fighting-covid-19>.

privacy and differing opinions thereto. While some Australians have asked questions about the virus,<sup>108</sup> it is more likely that a majority of these individuals have not read the expert commentary on privacy issues—including the Privacy Impact Assessment—instead relying on their local media, people within their own social circle, and their own opinion.<sup>109</sup> Wherever data is stored and no matter what protections on the data is afforded, it seems axiomatic that most people are disinclined to believe the assurances provided by authorities and accordingly lack trust such that they do not willingly and wittingly provide personal data. It is therefore unsurprising that individuals do not opt-in or load the app on their phones, despite assurances made about data retention and misuse.<sup>110</sup> With respect to the concerns raised in other countries by contact-tracing, such findings are outlined in the Norton Rose Fulbright study,<sup>111</sup> and human-rights interest groups statements more generally,<sup>112</sup>

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<sup>108</sup> See Sherryn Groch & Felicity Lewis, *Can you catch COVID-19 from Aussie bats? When are you immune? Your questions answered*, SYDNEY MORNING HERALD (May 6, 2020), <https://www.smh.com.au/national/what-s-the-death-rate-how-long-will-it-last-your-covid-19-questions-answered-20200323-p54cy7.html>, for a discussion regarding disease immunity and whether flying bats can pass on COVID-19.

<sup>109</sup> This would make for an interesting survey—to sample across the population the awareness of the app and the decisions made in respect of adoption, including it being “too hard.”

<sup>110</sup> See Phil Mercer, *Australia Urges Citizens to Download COVID-19 Tracing App*, VOA NEWS (May 4, 2020, 6:17 AM), <https://www.voanews.com/covid-19-pandemic/australia-urges-citizens-download-covid-19-tracing-app>.

<sup>111</sup> Norton Rose Fulbright Study, *supra* note 36.

<sup>112</sup> Graham Greenleaf & Katharine Kemp, *Australia’s ‘COVIDSafe App’: An Experiment in Surveillance, Trust and Law* (Apr. 30, 2020) (working paper) (on file with the Univ. of New S. Wales Law Faculty Research Series). One of the criticisms of the Australian determination made by the Health Minister is that the instrument may be modified, repealed, or altered pursuant to section 477 of the Biosecurity Act and therefore a contact-tracing app may “pose extreme risks to many civil liberties including privacy, freedom of movement and freedom of association . . .” *Id.* at 5–6. Note also the ethical and religious viewpoints that come into play. See Samuel Volkin, *Digital Contact Tracing Poses Ethical Challenges*, JOHNS HOPKINS UNIV.: HUB (May 26, 2020), <https://hub.jhu.edu/2020/05/26/digital-contact-tracing-ethics/>, for a discussion by Jeffrey Kahn, director of the Johns Hopkins Berman Institute of Bioethics, regarding “the ethical considerations of using digital technologies for public health surveillance during the COVID-19 pandemic.”

relating to trust,<sup>113</sup> liberty and freedom.

In Australia, as of June 2, 2020, just over six million copies of the app had been downloaded.<sup>114</sup> Half that number signed up within the first three days and the remaining three million signed up within a month.<sup>115</sup> Flattening off in adoption in such circumstances is typical;<sup>116</sup> however, from the perspective of the app's usefulness to assist in curbing the pandemic, this data is somewhat troubling. The current population of Australia is about 25 million, so the app in Australia is becoming irrelevant.<sup>117</sup> Similarly, the TraceTogether app launched in Singapore has a less than 20% take-up<sup>118</sup> and, again, residents are concerned about their personal movement being tracked.<sup>119</sup>

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<sup>113</sup> Katharine Kemp, *Trust*, UNSW SYDNEY: GRAND CHALLENGES, <https://grandchallenges.unsw.edu.au/themes/trust> (last visited Nov. 15, 2020). The University of New South Wales' new Grand Challenge on Trust notes a recent "disdain for evidence, critical thinking and impartiality" and that they "will work to address this crisis, by building connections and incubating new initiatives that explore themes such as trust in institutions, trust in experts and trust in technology and data." *Id.*; see also *To Download the Covid-19 App, or Not to Download?*, 2SER 107.3 (Apr. 20, 2020), <https://2ser.com/to-download-the-covid-19-app-or-not-to-download/> (discussing changes needed, such as decentralization, to gain greater trust of Australians using the COVID-19 tracing app).

<sup>114</sup> Sophie Meixner, *How many people have downloaded the COVIDSafe app and how central has it been to Australia's coronavirus response?*, ABC NEWS (June 1, 2020, 7:01 PM), <https://www.abc.net.au/news/2020-06-02/coronavirus-covid19-covidsafe-app-how-many-downloads-greg-hunt/12295130>.

<sup>115</sup> *Id.*

<sup>116</sup> See *Interpreting technology hype*, GARTNER, <https://www.gartner.com/en/research/methodologies/gartner-hype-cycle> (last visited Nov. 23, 2020).

<sup>117</sup> *Australia's COVIDSafe Tracking App Is Slowly Becoming Irrelevant*, PRIV. AUSTL., [https://privacyaustralia.net/covidsafe-app-becomes-irrelevant/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=covidsafe-app-becomes-irrelevant](https://privacyaustralia.net/covidsafe-app-becomes-irrelevant/?utm_source=rss&utm_medium=rss&utm_campaign=covidsafe-app-becomes-irrelevant) (last updated July 1, 2020).

<sup>118</sup> Greenleaf & Kemp, *supra* note 112, at 3.

<sup>119</sup> Dewey Sim & Kimberly Lim, *Coronavirus: why aren't Singapore residents using the TraceTogether contact-tracing app?*, S. CHINA MORNING POST: CORONAVIRUS PANDEMIC (May 18, 2020, 6:45 PM), <https://www.scmp.com/week-asia/people/article/3084903/coronavirus-why-arent-singapore-residents-using-tracetgether>.

Consequently, for Australia, there is insufficient interest in the adoption and use of the app, or thereby, to ensure its role in specialized physical isolation. This means that at the time of this writing, the states of Australia had closed borders, because large scale physical isolation of the population by geographic region—while imprecise and somewhat over-reaching—is more certain than relying on the quick method that might have been delivered by the app,<sup>120</sup> had the app been more widely accepted and adopted by the Australian population.<sup>121</sup> Further, experts in law and information systems opine that the Australian contact-tracing arrangements are lacking and are in need of amendment.<sup>122</sup>

Notwithstanding the considerable effort made by the Australian federal government to encourage adoption of the app, the lack of adoption thereof begs the thought as to how one might go about ensuring that life-saving technology, such as contact-tracing, might be better used in the event of a pandemic such as COVID-19.<sup>123</sup>

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<sup>120</sup> See *COVIDSafe app, About the app*, AUSTL. DEP'T HEALTH, <https://www.health.gov.au/resources/apps-and-tools/covidsafe-app#about-the-app> (last updated Oct. 28, 2020). Installation of the app was voluntary and marketed on the basis that it will “protect you, your family and friends and save the lives of other Australians.” *Id.* Registration required the entry of a name (which may be a pseudonym), age range, mobile number, and postcode. *COVIDSafe app, How COVIDSafe works*, AUSTL. DEP'T HEALTH, <https://www.health.gov.au/resources/apps-and-tools/covidsafe-app#how-covidsafe-works> (last updated Oct. 28, 2020).

<sup>121</sup> See MADDOCKS, *supra* note 93, pt. A, § 1.3, at 3 (“Ensuring public trust in the operation of the App will be critical to its successful roll-out.”).

<sup>122</sup> Graham Greenleaf & Katharine Kemp, *Australia’s COVIDSafe App needs more legal protections and transparency to gain trust*, UNSW SYDNEY LAW (May 1, 2020), <https://www.law.unsw.edu.au/news/australias-covidsafe-app-needs-more-legal-protections-and-transparency-to-gain-trust-0>.

<sup>123</sup> See MADDOCKS, *supra* note 93, pt. A, § 3.2, at 4–5. This is so because, while the Maddock’s Private Impact Assessment found that stakeholders ensured the development of the app was via a “privacy by design” approach, further work was required, including: “communication to the public, with clarity about the function and purpose of the App, how the App will work, what personal information will be collected by the App, and how that information will be used; the need for further assurance that personal information collected through the App will only be used for contact tracing; the minimisation of risks associated with loss of control over the personal information collected through the App once the information is disclosed to State and Territory Public Health

## VI. DEFAULT OPTIONS

Given that the voluntary up-take of the app is relatively low, how might governments tackle this dilemma in the future? Apparently, making contact-tracing apps available does not result in widespread adoption per se; nor, as is the case for Australia, does widespread information and assurances about the operation of the app result in widespread adoption.<sup>124</sup> Generally speaking, begging does not increase the voluntary adoption of most things—neither does offering incentives for citizens result in ubiquitous acceptance. With respect to contact-tracing, Australia seeks the former unsuccessfully,<sup>125</sup> while Singapore seeks the latter, also unsuccessfully, by offering the possibility of winning a prize for citizens loading up the TraceTogether app on their cell phones.<sup>126</sup> These are not optimal situations in times of crisis. Yet, optimality is critical in times of disaster.<sup>127</sup> Some might suggest that more sampling of the app via “randomized trials” is necessary to determine whether the app can be directly responsible for reducing COVID-19 infections.<sup>128</sup> However, this sampling is problematic and

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Officials and Contact Tracers; the need to ensure maximum application of the ‘data minimisation principle’, so that the minimum amount of personal information required is collected; the need to ensure that consent is voluntary, and provided so that Users of the App properly understand how their personal information will be handled; the need to ensure that appropriate consent is obtained from parents/guardians for Users who are children under the age of 16; the need for further assurance around potential security risks; further clarity about retention of personal information collected through the App after the end of the COVID-19 pandemic; and the desirability of further clarity about data governance arrangements, including in ICT and other contracts or other arrangements, between entities involved in the implementation and operation of the App.” *Id.*

<sup>124</sup> See Mercer, *supra* note 110; *Privacy Act Amendment*, *supra* note 95, p. VIII.A.

<sup>125</sup> Mercer, *supra* note 110.

<sup>126</sup> *Trace Together, Safer Together*, *supra* note 77.

<sup>127</sup> Samira Sadat Pourhosseini, Ali Ardalan & Mohammad Hossien Mehrolhassani, *Key Aspects of Providing Healthcare Services in Disaster Response Stage*, 44 *IRAN J. PUB. HEALTH* 111, 114 (2015).

<sup>128</sup> Kelly Servick, *COVID-19 contact tracing apps are coming to a phone near you. How will we know whether they work?*, *SCI. MAG.* (May 21, 2020, 5:10 PM), <https://www.sciencemag.org/news/2020/05/countries-around-world-are-rolling-out-contact-tracing-apps-contain-coronavirus-how>.

expensive.<sup>129</sup> Time and money are not presently in a relatively large supply. The fastest way to determine the relation between contact-tracing apps and COVID infections was for Australia to mandate—and enforce—the use of the app.

It is certainly the case that the Australian government was empowered to mandate the app.<sup>130</sup> However, such an action was presumably deemed unpalatable.<sup>131</sup> What else can the government do? The evidence for this as a possible solution to larger-scale physical isolation, privacy concerns notwithstanding, comes from another life-saving quarter: organ donations.<sup>132</sup>

In the field of behavioral economics, it has been shown that defaults save lives.<sup>133</sup> Johnson and Goldstein have argued, in a paper published in 2003, that default options may lead to remarkable differences in the preferences of individuals, and their study of organ donors across countries outlines this point.<sup>134</sup> There are also strong arguments in favor of variations on the default option, such as “mandated choice.”<sup>135</sup> Johnson and Goldstein used both natural and experimental data across three experiments by testing to see the difference between asking potential donors whether they wanted to be an organ donor (as against the default option of being an organ donor) and, in order to opt-out, needing to make the choice *not* to be an

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<sup>129</sup> *Id.*

<sup>130</sup> See *Biosecurity Act of 2015*, *supra* note 64, ch 8 p 2 d 2 s 477.

<sup>131</sup> Greenleaf & Kemp, *supra* note 112, at 2, 9–10.

<sup>132</sup> See generally Eric J. Johnson & Daniel Goldstein, *Do Defaults Save Lives?*, 302 *SCI. MAG.* 1338, 1338–39 (2003) (providing background material regarding organ donation statistics and the default rules of various countries).

<sup>133</sup> *Id.* at 1339.

<sup>134</sup> *Id.* at 1338–39.

<sup>135</sup> Such approaches require a timely advanced choice by citizens, as opposed to an opt-in or opt-out process. See P. Chouhan & H. Draper, *Modified mandated choice for organ procurement*, 29 *J. MED. ETHICS* 157, 159 (2003); Susan E. Herz, *Two Steps to Three Choices: A New Approach to Mandated Choice*, 8 *CAMBRIDGE Q. HEALTHCARE ETHICS* 340, 342 (1999); Aaron Spital, *Mandated Choice for Organ Donation: Time to Give It a Try*, 125 *ANNALS OF INTERNAL MED.* 66, 67 (1996). For the purposes of this article, the authors do not endorse any particular approach.

organ donor.<sup>136</sup> In the countries where presumed consent (opt-out) was the rule, organ donors ranged from the lowest of 85.9% in Sweden to the highest of 99.98% in Austria.<sup>137</sup> Where explicit consent was required for organ donation (opt-in) the rates in surveyed countries ranged from the lowest of 4.25% in Denmark to the highest of 27.5% in The Netherlands.<sup>138</sup> Note, however, that in the case of The Netherlands, there was a concerted and consistent campaign to raise the level of organ donations, including sending 12 million letters and the creation of a national donor registry that “failed to change the effective consent rate.”<sup>139</sup>

Although the Johnson and Goldstein study was motivated by the low permission rates of organ donation in the United States, which was paradoxically at odds with the then 85% approval of the idea of organ donation ultimately in the United States,<sup>140</sup> the study researched European countries.<sup>141</sup>

In 2012, the Australian government introduced “My Health Record” as an opt-in online health record, holding personal key health information for each Australian; however, in 2016, the Australian government changed this to an opt-out process.<sup>142</sup> The idea of the record was to facilitate medical professional access to a patient’s health record for general information or in

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<sup>136</sup> Johnson & Goldstein, *supra* note 132, at 1338.

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 1339.

<sup>140</sup> *Id.* at 1338; see also THE GALLUP ORG., INC., THE AMERICAN PUBLIC’S ATTITUDES TOWARD ORGAN DONATION AND TRANSPLANTATION (1993), [[https://web.archive.org/web/19990209044121/http://www.transweb.org:80/reference/articles/gallup\\_survey/gallup\\_index.html](https://web.archive.org/web/19990209044121/http://www.transweb.org:80/reference/articles/gallup_survey/gallup_index.html)], for a survey conducted by The Gallup Organization for The Partnership for Organ Donation at Harvard School of Public Health on American’s attitudes toward organ donation and transplantation.

<sup>141</sup> Johnson & Goldstein, *supra* note 132, at 1338–39.

<sup>142</sup> *Evaluation of the My Health Record Participation Trials*, AUSTRALIAN DEPT HEALTH, <https://www1.health.gov.au/internet/main/publishing.nsf/Content/ehealth-evaluation-trials> (last updated May 4, 2017); Austl. Digital Health Agency, *What is My Health Record?, Background information*, MY HEALTH REC., <https://www.myhealthrecord.gov.au/for-you-your-family/what-is-my-health-record> (last visited Nov. 18, 2020).

the circumstances of an emergency.<sup>143</sup> After concerns were raised around the change to opt-out, including by those concerned about data privacy,<sup>144</sup> the Australian government made some amendments to allow permanent destruction of records and to disallow privatization or commercialization of the system.<sup>145</sup>

Under the unamended version of the Australian scheme, around 2.5 million Australians—around ten percent of the Australian population—had opted out of the scheme and, of those, 1.147 million—nearly half of the 2.5 million Australians that opted out—withdrew their consent after the opt-out period was extended.<sup>146</sup> Additional cancellations occurred when the amendments were introduced.<sup>147</sup> Nonetheless, at the relevant time, the Australian position meant that 90% of the population had selected the online health record by default in stark contrast with the opt-in position.<sup>148</sup> Recall that the download of the COVIDSafe app in Australia sits at above six million—over 25% of the population.<sup>149</sup>

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<sup>143</sup> Austl. Digital Health Agency, *What is My Health Record?*, *My Health Record is an online summary of your key health information*, MY HEALTH REC., <https://www.myhealthrecord.gov.au/for-you-your-family/what-is-my-health-record> (last visited Nov. 18, 2020).

<sup>144</sup> Austl. Digital Health Agency, *Australian Government passes legislation to strengthen My Health Record privacy*, MY HEALTH REC. (Nov. 26, 2018), <https://www.myhealthrecord.gov.au/news-and-media/my-health-record-stories/legislation-strengthens-privacy>.

<sup>145</sup> Media Release, Austl. Digital Health Agency, Austl. Gov't, *Opt in or opt out of My Health Record at any time in your life: Australian Parliament strengthens privacy protections of My Health Record* (Nov. 26, 2018, 10:54 PM), <https://www.myhealthrecord.gov.au/news-and-media/media-releases/opt-in-or-opt-out-any-time>.

<sup>146</sup> Justin Hendry, *Millions opt-out of My Health Record: ADHA Reveals Final Figure*, ITNEWS (Feb. 20, 2019, 4:24 PM), <https://www.itnews.com.au/news/millions-opt-out-of-my-health-record-519572>.

<sup>147</sup> *Id.*

<sup>148</sup> SIGGINS MILLER, *EVALUATION OF THE PARTICIPATION TRIALS FOR THE MY HEALTH RECORD: FINAL REPORT* 124 (2016), [https://www1.health.gov.au/internet/main/publishing.nsf/Content/A892B3781E14E1B3CA25810C000BF7C6/\\$File/Evaluation-of-the-My-Health-Record-Participation-Trials-Report.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/A892B3781E14E1B3CA25810C000BF7C6/$File/Evaluation-of-the-My-Health-Record-Participation-Trials-Report.pdf)

<sup>149</sup> Meixner, *supra* note 114.

Nonetheless, it is apparent that Australians are fairly wary about their health information being online and accessible; by means fair or foul, and part of their objections in the case of My Health Record, may very well have arisen about opt-out determining the default position.<sup>150</sup> This may be in part because Australia is a Western democracy and its approach towards authority follows same; something it shares in common with the United States and most of Europe.<sup>151</sup>

It is true that neither the organ donation study nor the Australian health record example, amount to determinative positions regarding how to approach the adoption of an app in a global pandemic; but they are at least instructive. The Johnson and Goldstein study elucidates that the way options are framed does appear to influence the outcome that follows.<sup>152</sup> This also holds true for the Australian experience with My Health Record and the COVIDSafe app.<sup>153</sup> It seems reasonable to infer from the Australian experience that opt-ins affecting the privacy of information present a very difficult question: a question most likely to be deferred, and by default, an opt-in not being selected. To what extent such deferral is impacted upon by such privacy concerns is—in the pure sense or in the more complex—encompassing other concerns, including the source of data such as biobanking and concerns arising from the possible adoption

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<sup>150</sup> Including researcher opinion that the system seemed less suited for healthcare and more suited to the collection of data. See Paul Power, *Opinion: Is there a smarter way for the controversial My Health Record system?*, HEALTHCARE IT NEWS (Apr. 1, 2019), <https://www.healthcareit.com.au/article/opinion-there-smarter-way-controversial-my-health-record-system>.

<sup>151</sup> See Sam Schechner, *French Contact-Tracing App Struggles with Slow Adoption. It Isn't Alone*, WALL ST. J. (June 23, 2020, 3:12 PM), <https://www.wsj.com/articles/french-contact-tracing-app-struggles-with-slow-adoption-it-isnt-alone-11592928266> (“[T]here are signs France isn’t alone in seeing low adoption levels. Italy’s app recently crossed three million downloads, which covers around 5% to 6% of its population. Denmark’s app is at 300,000 downloads or roughly 5%. Norway, for its part, recently suspended use of its app after complaints from privacy regulators, who said the low incidence of the disease no longer made the app worth the encroachment on individual privacy it required.”).

<sup>152</sup> Johnson & Goldstein, *supra* note 132, at 1338.

<sup>153</sup> See SIGGINS MILLER, *supra* note 148, at 85; *COVIDSafe app, About the app*, *supra* note 120.

and commercialization of data, which remains, for now, unanswered.

## VII. CONCLUSION

In the event of a pandemic, we posit that there lies a difficult balance for governments between liberty on the one hand, and prospects of survival on the other; with respect to the latter, apparently lies the question on how to achieve it, without giving up too much prosperity in the process. It is a complex and difficult decision for a government because it involves an inevitable compromise of factors such as privacy, data security, ethical considerations, and safety that conflate the ideological differences between the rights of the individual on the one hand, and the whole-of-society on the other.

The Australian COVIDSafe app is an example of the difficulties associated with dealing with a complex and evolving pandemic. While there is no apparent solution as to how to best deal with a crisis that changes often and quickly, it at least seems apparent that where digital options—such as an app—are available and, where those options might be used for the immediate and beneficial societal health improvement and protection, governments might find opt-out determinations more immediately useful. That being so, then the fallout from the use of the opt-out option can be altered, eased, or removed when the health crisis is averted. When and for whom this is the most appropriate course of action is a matter, at least in Western countries, for their democratically elected leaders.