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Chapter 1
Values for a Post-Pandemic Future

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1.1 Value Disruption & COVID-19

At the beginning of the COVID-19 crisis, several public figures predicted that the pandemic would precipitate a dramatic shift towards new sets of values in our societies. Other more optimistic commenters prophesied a new dawn for egalitarian and progressive values (Adib-Moghaddam, 2020; Kelly, 2020; Nancy, 2020). This conjecture was drawn from the early belief that the SARS-CoV-2 virus would be impervious to differences in age, class, ethnicity, and nationhood: a 'great equaliser'. As statistics on death rates and hospitalisation rose, however, this optimism quickly came to be seen as misguided. Not only are some individuals more susceptible to the virus (ethnic minorities, senior citizens, those with pre-existing conditions), the non-medical measures designed to prevent populations from spreading the virus disproportionately affect other marginalised groups (such as those who have less income or education, etc.). When more information became available on the causes, exacerbating factors, and the prognosis of COVID-19 infection, some authorities tried to make medical outcomes more equitable. (1) In some counties, those most at risk from complications from the virus were often (although not always) given earlier treatment or vaccine priority. (2) Some policymakers initially recognised (or at least declared publicly) that disadvantaged communities and critical workers should be vaccinated first. (3) Globally speaking, the World Health Organization's COVAX scheme provided millions of vaccine doses to low-to-middle-income countries.

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Nevertheless, over two years since the beginning of the pandemic, some of these critical initiatives are still unsuccessful.[1] Vaccine and booster shots are still distributed in a chronically inconsistent manner (Sawal et al., 2021). In international terms, national boundaries have invariably determined which citizens have received jabs first. Furthermore, misinformation regarding vaccine efficacy or full-blown vaccine conspiracy theories has caused a sizeable minority to refuse (even to protest against) having the jab, especially in countries in which governments are actively legislating for this. For example, the WHO's 2021 plea for national governments in the rich world to halt booster shots before the vaccine was rolled out worldwide was entirely ignored (Keaton, 2021). Citizens of the countries without access to internationally recognised vaccines are effectively separated from the first world countries, both in terms of healthcare and travel. Thus it seems that contrary to those who predicted a new sense of social and political connectedness, COVID-19 has fed into further polarisation in societies and made the world even more divided and balkanised. These differences become strikingly apparent in entrenched differences in values: what we think is important, worth preserving, and what we care about as individuals and larger social groups.

While the utopian predictions of the pandemic may look naïve or simple-minded in hindsight, it is also true that new value shifts and conflicts that the pandemic has created were hard to anticipate. Much has been written on cultural differences, for example, specifically the ability of East Asian countries to control the spread of the virus effectively. Mask wearing in these countries is standard, often viewed as a mark of respect for those in one's vicinity. Because of cultural differences, so the argument goes, the governments in some East Asian countries were better able to implement timely lockdowns, strict limits on public transport, and mandatory testing. This has been attributed to various causes. Historical precedents regarding the value trade-off between conformity for social norms and personal liberty may have something to do with it. However, it should also be remembered that many East Asian countries have greater experience with respiratory diseases (SARS, MERS, etc.). By contrast, the initially insouciant reactions of many Western Democratic governments turned into painful and often inconsistent attempts, in the later stages of a pandemic, to balance the COVID-19 containment, economic fallouts, and incursions on individual liberties. The fine-grained picture, of course, is more complicated than this. We know that pandemic containment measures in some Eastern Asian countries were deployed at the cost of brutal suppression of basic citizens' liberties, with some of the Western democratic countries also moving dangerously close in this direction (Greitens, 2020). Contrawise, some East Asian governments, such as South Korea and Taiwan, have become examples of successful deployment of emergency pandemic containment measures without the erosion of democratic processes. We can only hope that the pandemic will serve as a cautionary learning experience for the future. There are some signs of this already. At the time of

[1] WHO calls distribution of Covid boosters a 'scandal' as poor nations struggle to get first shots. https://www.cnbc.com/2021/11/12/who-calls-distribution-of-covid-boosters-a-scandal-as-poor-nations-struggle-to-get-first-shots.html

writing, many governments have reacted more rapidly to the threat of the so-called Omicron variant by shutting national borders, as well as enhancing testing and quarantine requirements for those who come from potentially infected regions.

The way populations deal with virus-containment measures has revealed differences in values that may have been implicit before the pandemic but became explicit under lockdown conditions. To take an example from the Benelux region, when the Dutch government mandated the closure of 'non-essential services', they included bookshops in this definition but not florists. In Belgium, by contrast, florists were ordered to close, but bookshops were free to remain open for some time as they were deemed fundamental to the Belgian way of life. Here we can see how policymakers implicitly made value judgements concerning governmental definitions of an 'essential service', deciding what counts as essential to the way of life of the populations they represent. Another upshot has been increasing public discussion of how those who work in essential services are often not remunerated in a way that is commensurate with the importance – *essentialness* – of their role. Compared to those who work in sectors that were easily able to move their workplace from the office to their home (bankers, public servants, accountants, etc.), essential workers (nurses, care workers, bus drivers, teachers, grocery staff, etc.) are often paid significantly less. Whether this disparity will figure in how we value these activities in the future remains to be seen. Will those whose work was defined as 'essential' be remunerated accordingly, or will this definition be forgotten once COVID-19 no longer presents a threat?

The natural environment is another domain that shows signs of being susceptible to post-pandemic value change. In their original explanation of 'building back better', the OECD cautions that 'global environmental emergencies such as climate change and biodiversity loss' are formidable existential threats to humanity (2020: 2). From this, the authors propose, we should view the value disruption of the pandemic as an opportunity to rethink our attitudes to 'long-term emission reduction goals, […] resilience to climate impacts, […] biodiversity loss and […] circularity of supply chains' (2020: 2). We saw intimations of this reappraisal during initial lockdowns as citizens across the world were amazed at the reduction of local smog (Venter et al., 2020), the sharp increase in species population (Natural History Museum, 2020), and beautiful images of Venice canals finally running clean after decades of pollution (Katanich, 2021). However, despite these acute short-term signs, global lockdowns and the net reduction in emissions as a consequence has done little to alleviate the underlying causes of these issues. Perhaps, however, this temporary respite in environmental degradation may raise ecological issues, thinking, and values in the minds of many in a way that will inform how ecological challenges are subsequently approached.

In general, COVID-19 has galvanised a discussion on future values through the initiative to 'build back better', proposed by various governments and global financial institutions (US, UK, EU, World Economic Forum, etc.). This slogan, initially developed by the Organization for Economic Co-operation and Development (OECD), advocates using the disruption caused by the pandemic to create a future world that is more 'equitable', 'sustainable', 'resilient', and one that pays more

attention to social 'well-being and inclusiveness' (OECD, 2020: 2; cf. Schwab & Malleret, 2020). How these goals can be achieved, if they are possible at all, remain subject to debate, controversy, and conspiracy (Umbrello, 2021).

1.2 COVID-19 Technologies

Whether the pandemic will change our values in the domains of social justice or sustainability will only be seen in future decades. However, due to the exigencies of the immediate consequences of the pandemic, value issues relating to COVID-19 technologies have come into focus much more rapidly. Ethicists and philosophers of technology usually have significantly longer timeframes to evaluate the impact of emerging technologies. Within weeks of the pandemic emerging, however, various *digital* and *medical* technology companies were vying to show how their products could be repurposed to slow the transmission of the SARS-CoV-2 virus (e.g., COVID-tracking apps, digital immunity passports) or fight the medical effects of COVID-19 (respirators, antigen treatments, mRNA vaccines).

Digital technologies have been promoted as a way to mitigate the indirect social effects of lockdown, the closure of schools and workplaces, and the restrictions on socialising (Alphabet CEO, Eric Schmidt; cited by Strauss, 2020). While schools may have to remain closed, classrooms have been exchanged for online education; while visits to the elderly are banned, video conferencing has replaced family visits; while workplaces are out of bounds, many have worked from home. The problem with digital solutions, as many now recognise, is that they assume some level of socioeconomic parity, as moving one's life to online-only works effectively in a stable and secure home environment. These changes show signs of creating a digital divide that may adversely affect socioeconomically disadvantaged groups. In short, the values and value trade-offs enshrined in a post-COVID future are yet to be understood. Still, the speed and impact of these developments on governments, social institutions, and individual citizens mean that ethical reflection on the values of the post-COVID world is urgently needed. As we explain in the methodology section below, this raises novel challenges for the ethics of technology, requiring responses to the complex value questions raised by the pandemic, often in real-time.

While digital technologies arguably attracted more attention at the early pandemic stages, medical technologies have assumed much more importance for many of us in the last two years. From antigen treatments of the symptoms of the virus to mRNA vaccines, many of us have come into contact with cutting-edge biotechnologies that have had a powerful effect on mitigating the impact of the virus. Permanent funding has been allocated to new virus monitoring stations at national borders. Flu vaccines created with mRNA technology are due to become available as early as 2023. Many of these technologies have been deployed at scale for the first time. These new ways of integrating technology into our everyday lives stand to be one of the legacies of COVID-19 that will have profound ethical consequences.

1.2.1 Contact-Tracing Apps

Throughout the COVID-19 pandemic, several smartphone apps were created to work symbiotically and increase the efficiency of manual contact tracing efforts without knowing beforehand if they would actually be effective. The MIT Technology Review's 'Covid Tracing Tracker' listed around 50 apps globally, 22 of them solely within the European Union. Although some initial data have been produced, and these preliminary findings can and should be explored and debated, the evidence concerning the real-world effectiveness of these digital contact tracing apps remains both unclear and, in many cases, contradictory (Tupper et al., 2021; Keeling et al., 2020).

When the pandemic began, the idea behind digital contact and tracking apps was to 'solve' the pandemic itself. However, we know now that framing these apps within a 'technofix' picture is not ideal for conceptualising their use. The data we have concerning their effectiveness diverge significantly from country to country and, at times, from study to study. The variation in the methods employed are so divergent that it is difficult – if not entirely impossible – to compare results and come up with a coherent, comprehensive evaluation of the impact and effectiveness of digital contact tracing apps in actual responses to the COVID-19 pandemic. And despite the revealed privacy abuses of many of these apps, governments are now downplaying their relative importance, a drastic change in value priorities compared to their initial interest and investment early on in the pandemic.

Regardless, in the end, even the uptake of these apps was not sufficient to meet the minimum necessary number of downloads to be considered effective (c.f., Sabelli, 2021). As of July of 2021, 17% of Italy's population downloaded such apps, Spain at 16%, Poland at 4%, and Croatia at 2% (LibertiesEU, 2021). What was at one time, not far in the past, of value has become ever more hushed.

1.2.2 Immunity Passports

Another technology that has taken up a great deal of real-estate on the front page news is immunity passports or digital covid certificates. Created to aid in the reopening of international travel, digital immunity passports are now mandatory in several countries to enter premises such as bars, restaurants, gyms, pools, and museums and attend large public events. In fact, Italy, one of the countries that mandated such passports (often termed the 'green pass'), created a 'super green pass' of sorts that prohibited people from attending school or work if they didn't have one (Italian Committee for Bioethics, 2021).

If we look at the available literature on the use of immunity passports and historical precedents, some evidence and arguments indicate that there are shared concerns within the scientific community that are being overlooked or downplayed by governments that have adopted immunity passports for domestic use (Milan et al.,

2021). This fact has become even more critical given that the debate – or lack thereof – concerning immunity passports fits into the broader landscape of emergency technological responses to the COVID-19 pandemic. Unfortunately, these measures are often tainted by controversy pertaining to their lack of transparency, evidence of efficiency, similar to the accusations and critiques levelled at digital contact and tracing apps. Consequently, an increasing number of studies suggest that the actual contribution of immunity passports in combating COVID-19 – both in terms of boosting vaccination rates and containing infections – could be more controversial than how governments who uncritically pushed for their adoption would like it to be. Hastily deploying them could lead to increased polarisation concerning vaccine hesitancy and rejection from certain demographic groups of the population while only achieving marginal results among those who comply with the program (de Figueiredo et al., 2021; Porat et al., 2021).

Governments across the globe appear to have forgotten about contact tracing apps, shifting their communicative strategies to manufacture consent for immunity passports. The broad use of narratives offering a different rationale for these programs is also of particular concern here. From the arguments that imposing restrictions on vaccinated individuals is unfair to the arguments that COVID-19 passports can avoid hard lockdowns to the open admissions that these programs are devised to nudge more people into vaccination. It is challenging to ignore parallels with the deployment of contact-tracing apps here. What is becoming more apparent is that domestic immunity passport programs fit into the same trend as contact-tracing apps: "technofixes" to the pandemic, deployed at the expense of the normalisation of health surveillance devices (Kravchenko & Karpova, 2020). However, in contrast to contact tracing apps, an individual cannot choose not to use an immunity passport as COVID-19 passport programs are de-facto obligatory for everyday activities in many countries.

Concerning both technologies, governments are focused on the production of narratives about effectiveness and desirability of these technologies. They are doing so to gain public adoption and participation. This performance fabricates the impression of efficacy on the government's part while repressing critique and resistance.[2] What is fundamentally required is precisely not this, but open and transparent evidence-based dialogue given the constantly developing scientific knowledge regarding the epidemiological processes involved in COVID-19 transmission.

[2] At the time of writing (December 2021), EU countries with COVID passport programs are resorting to closing borders and hard lockdowns again, suggesting that the only justification that has not been refuted empirically is the nudge towards higher vaccination uptake.

1.2.3 Novel Antivirals and Vaccines

Aside from the multiple vaccines available for prophylactic use against COVID-19, there are extant treatments with varying levels of efficiency in combating the virus, including anti-inflammatories like dexamethasone and tocilizumab, antivirals like ivermectin, and monoclonal antibodies like casirivimab and imdevimab (Ajayi, 2021; Alam et al., 2021; Francés-Monerris et al., 2021; Mody et al., 2021). Pfizer has recently announced a novel antiviral drug designed to treat COVID-19. This novel drug has been shown to be highly efficacious in preventing severe disease and hospitalisation (Pfizer, 2021). However, pharmacodynamic analysis reveals that the modality of action of this novel drug is similar to that of the generic extent drug Ivermectin (c.f., Francés-Monerris et al., 2021; Mody et al., 2021). This contradiction has produced some polarised debates on the choice of different treatments both within and outside of scientific community (Izcovich et al., 2021). On one hand, preliminary studies suggest that generic, non-patented existent treatments, like Ivermectin, show the highest binding affinity with the virus spike protein (see Eweas et al., 2021; Francés-Monerris et al., 2021; see also Surti et al., 2020; Mody et al., 2021). On the other hand, given the example of Ivermectin, closer scrutiny of meta-analysis studies claiming benefits of this treatment suggests some quality issues (Lawrence et al., 2021; Izcovich et al., 2021).[3] And as Lawrence et al. (2021) argue we should not ignore severe harms and moral hazards that lack of proper scrutiny for the quality of scientific research can bring in the context of unfolding pandemic. This caution, however, should not obscure a valid concern that patents can be highly profitable, which is often understood as motivating the creation of new drugs, despite existing drugs offering similar efficacy.

The open and transparent debate on the efficacy and affordability of different COVID-19 treatments, unfortunately, has been obscured by the extreme politicisation of these topics. Many Western media outlets have campaigned to politicise the use of such drugs, turning the scientific research on safety and effectiveness into supporting arguments for polarised political debates (Szawarski & Rich, 2021). Like the discourse on contact and tracing apps, such media conglomerates have made determined efforts to manufacture consent for the use of patented vaccines and drugs at the opportunity cost of their off-patent counterparts. The reasons behind this push are not difficult to understand given the size of the pharmaceutical lobby in pressuring Western governments as well as their open and costly campaign in advertising their products on widely disseminated media outlets (Merelli, 2021). These efforts are not dissimilar to disturbing lobbying efforts by commercial

[3] First large-scale randomised trial on the efficacy of Ivermectin for COVID-19 treatment that will provide conclusive evidence is still underway at the moment of the writing (December 2021). https://www.ox.ac.uk/news/2021-06-23-ivermectin-be-investigated-possible-treatment-covid-19-oxford-s-principle-trial

companies who would like to deploy permanent digital identity solutions piggybacking on 'COVID-19 passports'.[4]

Commercial interests of Big Pharma now seem to be deeply intertwined with the introduction of 'COVID-19 passports' and other initiatives making vaccination de-facto obligatory. This context does warrant certain scepticism and suspicion about statements from these companies about high desirability of booster shots, feeding into proposals to accelerate 'booster' vaccinations, proposing third, fourth, and more booster doses. This accelerated demand for booster shots is concentrated in richer countries, while populations in developing countries have no access to first doses of efficient vaccines and treatments. All these observations remind us that the long-term effects of these varied corporate interests are slowly becoming manifest, and we must be cognisant of the damages that will emerge in the future.

1.3 Methodological Issues

The unfolding crisis of the COVID-19 pandemic has uprooted value hierarchies in societies across the world. It has also warped our perception of space and times, often in the most peculiar and unexpected ways. Not only has the pandemic demonstrated how globalised our world is, but it has highlighted the increased pace of many technological developments on the global scale. Research and development lifecycles have been accelerated dramatically, bringing spectacular scientific breakthroughs such as new COVID treatments, as well as complex challenges. These shortened lifecycles mean that sometimes raw technological solutions were deployed at scale without proper assessments of safety, security and ethical issues (Ishmaev et al., 2021; Lanzing, 2021). Furthermore, these examples have made it evident that these large scale and high impact deployments are at the liberty of a handful of gatekeepers, like pharmaceutical giants or digital platforms.

These challenges pose hard questions to the ethics of technology. For one, the traditional methods of conceptual reasoning based on established academic publications fail to keep up with these developments. Secondly, academic research on the ethics of emerging technologies traditionally operates with a certain degree of detachment, focusing on potential issues in the future or issues that may be relevant only to a small number of people acting as early adopters of new tech. However, research challenges brought by pandemic technologies turned out to be very different, characterised by unprecedented empirical complexity and moral weight.

The complexity factor has brought a critical value of cross-field communication to the forefront, raising the bar for minimally meaningful contributions from ethics research. This means that in the same way technologists and governments could be accused of 'techno-fixes' and silver-bullet thinking; ethicists could be charged

[4] Wetenschappers waarschuwen voor een nieuwe digitale identiteit. https://www.ftm.nl/artikelen/internationale-digid-lobby

with naive 'black-box' technology evaluation methodologies. Contact-tracing apps are just one example that highlighted the need for systemic assessments, combining both high-level societal thinking and empirically grounded low-level evaluation of technical components (Klenk & Duijf, 2021). From the low-level point of view, as it turned out, even seemingly obscure details regarding limitations of a Bluetooth protocol or choice of encryption schemes made a dramatic difference between somewhat practical and secure applications and completely useless solutions ripe with ethical issues (Troncoso, 2021). But these examples have also highlighted that even the most technologically sound solutions can be ethically problematic in ways that they get embedded in other systems and structures of our society (Sharon, 2021).

The moral weight of these ethical issues has also put to the test the value of abstract conceptual reasoning when dealing with urgent and impactful issues. Deployment of many technological solutions in this crisis was characterised by the hard path dependences, such as politics, commercial interests, and even ideologies. This made it much harder for the ethicists to enjoy the ivory tower detachment of moral-theoretical realms. It made even the most well-meaning moral reasoning on the acceptability or desirability of new technologies precariously vulnerable to the co-option by unscrupulous parties. The phenomenon of 'ethics-washing', where public or private actors selectively shop for ethical principles most fitting their practices, emerged before the pandemic. But in the course of the pandemic years, it got entangled with the 'COVID-washing' of questionable technologies and complex institutional arrangements (Ishmaev et al., 2021). This has created an uneasy background where an ethical analysis on the pandemic technologies can be easily co-opted, for example, by the proponents of the radical anti-vaccination movement or proponents of intrusive digital surveillance.

All these challenges have made it clear that, like never before, ethicists have to exercise great epistemic humility without shirking the moral responsibility of expert judgments on the issues of moral import. However, these challenges also provide unique opportunities to advance the field of the ethics of technology. These accelerated innovations present an invaluable opportunity to study full lifecycles of technological solutions from speculative proposals to mass-scale adoption in a span of a few months. Ethicists are presented with invaluable case studies that provide insights on how speculative technologies succeed or fail, their hard path dependencies, and the value conflicts they provoke. It is also an opportunity for the ethicists to reflect on their respective fields' methodologies and research goals. This edited volume presents a step in this direction. It brings about various types of ethical investigations dealing with some of the most challenging topics of the moment, from narrow applied issues to meta reflections on the role of academic ethics research in the crisis.

1.4 Values for a Post-Pandemic Future

Thinking about post-COVID values requires comparing *what shows signs of permanently changing* with *what is likely to stay the same* after the current pandemic has passed. It also requires us to acknowledge that a desirable post-pandemic future can only be better prepared for rather than fully achieved. Although the last two years have shaken the axiological assumptions of many, the values of the post-COVID world will be profoundly influenced by how we have collectively had to reorganise our lives during the last two years. Extended lockdowns have required a collective rethinking of how we work, shop, study, entertain ourselves, and care for each other. In the months and years ahead, we will see whether these new practices have translated into a wholesale re-valuation of the values we live by or a reappraisal of our obligations and duties to one another. Whether these intentions are shelved once the pandemic is over remains to be seen, of course, but there are at least signs that they may well have some longevity, not the least due to the seismic economic disruption the pandemic has caused.

The questions we face then are how to confront and live *with* these new frameworks and baselines of 'normality' and whether or not we *should* live with the changes that have and will be pervasive in a post-pandemic world. Despite many things changing, many pre-pandemic issues have nonetheless remained or have been exacerbated. The Pareto Principle has reared its ugly head in its most devastating form not long after the United States found itself in the grips of the pandemic. Despite a national health emergency putting federal, state, and local resources and infrastructures to the test, the US Congress was quick to put the CARES Act into place, a seemingly necessary piece of legislation that amounted to nothing other than the most significant upward transfer of wealth in the history of humankind (Gross, 2020). Amid a pandemic, the already wealthy class looted the treasury at the expense of those who already had nothing. Some things change, some things stay the same (Abramson, 2020).

When considering the values of the post-pandemic future, we need not only consider *what* we value and *when*, but the *how* of values, i.e., valuation. From the onset of the pandemic to today, medical staff around the globe have rightfully been raised to the station of 'heroes' given the gruelling conditions and constant threat of danger that they constantly confront and continue to face daily. Although their work has always faced danger, and their valuation as heroes *should* have always been such, the unique pandemic crises made manifest and exacerbated what has always been there. But the tides are changing for our heroes. Confronted with mandatory vaccine mandates, large swaths of medical workers are resigning from their posts, suspended without pay, or dismissed entirely from their positions (Kelly, 2021). These 'heroes' are now being lumped in with anti-vax radicals and condemned to stigma and unemployment in a situation that requires their expertise. *How* has this change in what we value come about so quickly?

This dynamism between static, exacerbated, and changing values in light of this global pandemic is the issue to which this curated volume is dedicated.

1.5 Overview of Contributions

As the title of this volume suggests, there is increasing interest in the uncertain future we are moving into, given the current pandemic situation. The values that will come to be held dear, given the continually dynamic and changing nature of our politics, technology, and society as a whole, will have inextricable impacts on our day-to-day lives and how we understand our place in this changing world. To confront these challenging issues, the contributions of this volume have been divided up into two thematic parts. In *Part I: Learning from COVID-19*, the chapters explore the invaluable experiences, values, changes, and issues that have emerged as a consequence of the pandemic situations. Composed of seven chapters, Part I aims to provide us with a solid background to guide us to understand better what our future may hold. We cannot know where we are going if we do not first learn from where we have come from. *Part II: Envisioning a Post-Pandemic Future* takes up these foundational lessons and casts our minds into what our future post-COVID may look like, given historical and current trends. Composed of five chapters, Part II will guide the interested reader along a series of possible futures concerning how we understand the 'new normal', how we can educate the innovators of tomorrow with the lessons of today, as well as how we can guide our behaviour towards socially beneficial ends. Taken together, the two parts aim to give the reader a detailed roadmap to navigate this tenuous and precarious landscape.

Ibo van de Poel, Tristan de Wildt, and Dyami van Kooten Pássaro begin our guided tour of this landscape in their chapter *COVID-19 and Changing Values*. Their chapter takes a close look at value change due to the corona pandemic. With the help of topic modelling, they analysed COVID-related news articles for changes in the frequency of how often these news articles address eleven different values. They found that in the first few months of the pandemic, there was a punctuated shock in the frequency in which values were addressed. They highlighted a sharp increase in the value of health and safety and a significant decline in the values of democracy, privacy and socio-economic equality. However, they noted an opposite direction of change after the first months, which suggests that the punctuated shock's effect may be cancelled over time. Their chapter also presents – and offers possible explanations for – differences between countries and compares their results with the literature. They do not find evidence that the corona pandemic confronts us with a moral dilemma of health versus economic welfare, or lives versus livelihoods, as has sometimes been suggested. Their study also indicates a degree of moral resilience in the studied countries, in the sense of paying attention to morally important values despite being put under pressure during a crisis.

Elena Ziliotti follows van de Poel's analysis in her chapter *What Has COVID-19 Taught Us About Democracy? Relational Democracy and Digital Surveillance Technologies* asking what is the best way for democratic societies to experiment with digital surveillance technologies. This chapter contributes to answering this question through the analysis of the relational democratic model. Ziliotti contends that the relational conception of democracy is a viable approach to experimentations

with new technologies. She argues that the relational conception of democracy, which views democracy as a way of life (or culture), supports a deliberative and context-sensitive approach to new digital technologies. To clarify what this approach entails in practice, the chapter discusses the case of South Korea's introduction of new digital surveillance technologies during the first year of the COVID-19 pandemic. Ziliotti demonstrates that these reflections shed new light on what democracy means and provide us with valuable insights on designing post-pandemic democracies.

In their chapter *Contact Tracing Apps for the COVID Pandemic: a Responsible Innovation Perspective,* George Ogoh et alia explore how the COVID-19 pandemic has brought about the first real opportunity to test the efficacy of the Responsible Research and Innovation framework (RRI) in a global health crisis. This is in view of the bold new approaches to health research and innovation that the pandemic has paved the way for. One such approach is the digital contact tracing application (CTA). Although contact tracing has been a fundamental part of infectious disease control for decades, this is the first time this technique has been used in mobile applications. Based on a Multivocal Literature Review, the development of CTAs in four countries – France, Germany, Spain, and the UK – is assessed in this chapter to understand what dimensions of RRI can be identified in the governments' response to COVID-19. This chapter shows that although from 2011, RRI has been promoted as a governance approach for increasing societal desirability of the processes and products of science and technology, very little is known about how the framework may be applied in a health crisis. Ogoh and company show that while no RRI approach was explicitly embraced by these governments, some key components were present - even though inadequately. They argue that this indicates that while it is challenging to apply RRI in crises, there is value in using it as an analytical tool for techno-social responses in situations like those created by the COVID-19 health crisis.

Where Ogoh et alia took up the topic of contact tracing apps, Pei-Hua Huang takes a closer look at vaccines and state duty in her chapter *Uncertainty, Vaccination, and the Duties of Liberal States*. She points out that while a liberal state has a general duty to protect its people from undue health risks, the unprecedented emergent measures against the COVID-19 pandemic give rise to questions regarding the extent to which this duty may be used to justify the intervention. In this chapter, Huang uses the case of vaccination to argue that while a liberal state has a general duty to protect its people's health, the duty cannot be used to justify all sorts of measures. First, every available option involves different risks and benefits. The incommensurability of the involved risks and benefits forbid the prioritisation of a particular vaccine. Second, given the epistemic limitations and uncertainty, policies that favour certain vaccines are not only epistemically ill-founded but also morally problematic. She concludes that in a highly uncertain situation, the duty a liberal state ought to uphold is to properly communicate the knowns and the unknowns to the general public and help people decide which option they'd opt for. Huang calls this duty 'the duty to facilitate risk-taking'.

Eugen Popa and Vincent Blok turn our guide towards the role and impacts of conspiracism in RRI in their chapter *Conspiracism as a litmus test for responsible innovation*. The inclusion of publics in the innovation process has always been the creed of Responsible Research and Innovation (RRI), Public Engagement with Science (PES) and other related fields. Conspiracists, however, are not your garden-variety public. As the COVID-19 pandemic has shown, the conflict between conspiracists and science is deep and intractable – distrust replaces trust, and alternative explanations replace the mainstream narrative. In their chapter, Popa and Blok ask how the game of responsible research and innovation is to be played with those who believe that the game of research and innovation is rigged. Understanding the relationship between conspiracism and responsible innovation is necessary to understand the unvisited corners of the science-society interface in the post-pandemic future. They claim that pluralism, already part of the philosophical background that spurred RRI and PES, can offer insights into how conspiracism can be approached. As a case in point, the authors develop these insights starting from the 2021 E.U. Commission policy on how institutions should respond to conspiracism. They conclude that only within a pluralist framework can RRI and PES become what Sheila Jasanoff referred to as 'technologies of humility'. They conclude by summarizing the distinction between monism and pluralism and by highlighting the consequences of this distinction for concept of 'inclusion' in responsible innovation.

To conclude the first part of this volume on lessons learned, Udo Pesch begins our journey of looking forward. In his chapter *Values as Hypotheses and Messy Institutions: What Ethics Can Learn From the COVID-19 Crisis*, Pesch frames the COVID-19 crisis as an episode that reveals various complications in the relation between values and institutions. He argues that these complications cannot be addressed satisfactorily by ethics, as this field is characterised by a gap between the identification of values worth pursuing and the effectuation of these values in society through politics. His chapter aims to bridge this gap between ethics and politics by outlining the dialectical relation between values and institutions. He does this by firstly presenting values as collectively held understandings that emerge in public deliberation. Secondly, these values are safeguarded by setting up appropriate institutions, which, at the same time, also allows the further substantiation of these values. However, it also needs to be acknowledged that institutions are not mere instrumental solutions to further societal values. On the contrary, they have their own morally laden dynamics. As such, they should also be susceptible to adjustment following societal demand.

In envisioning our potential post-pandemic future, Sven Nyholm and Kritika Maheshwari begin our explorations in their chapter *Offsetting Present Risks, Preempting Future Harms, and Transitioning Towards a 'New Normal'*. The ongoing pandemic has led some people to speak about a 'new normal', since we have temporarily had to radically change how we live our lives to protect ourselves and others from the spread of the SARS-CoV-2 virus. However, the expression – 'a new normal' – has also been used in other contexts, such as in relation to societal disruptions brought about by things like new technologies or climate change. What this general idea of a 'new normal' means is unclear and hard to characterise, and there

are diverging views about how to respond to a new normal. Still, one feature of a desirable new normal that most people would agree on is that it should be 'safer': safer technologies, safer institutions, and so on. But it is also essential to consider what other ethical considerations and principles should be part of an ethics of a new normal. And it is also interesting to explore similarities and differences among different types of cases that can be classified as situations where we face a new normal. In this chapter, Nyholm and Maheshwari discuss the general idea of an ethics of a new normal and consider what ethical distinctions, values, and principles are likely to be relevant in most instances where we face a new normal, including ethical considerations related to risk mitigation and ways of offsetting potential harms.

Making this new normal a reality means educating the innovators of the future. In their chapter, *Designing in Times of Uncertainty: What Virtue Ethics Can Bring to Engineering Ethics in the 21st Century?* Jan Peter Bergen and Zoë Robaey take a closer look at the renewed interest in virtue ethics within the ethics of technology scholarship. In their chapter, they explore what virtue ethics can bring to engineering ethics in these times of growing epistemic and normative uncertainty, i.e., when fully informed design choices and trade-offs become increasingly difficult to make. Bergen and Robaey argue that virtue ethics can help us 'do the right thing, at the right moment' in the context of engineering design in different situations of uncertainty.

The COVID-19 pandemic has brought about a pervasive digitalization of our social and practical lives. For many, this has signified a substantial loss, with the pandemic underscoring that in-person interactions play a key if not constitutive role in well-being. At the same time, many disabled people and disability rights activists have celebrated the increased accessibility to practical and social spaces enabled by the pandemic-induced embracing of online communication platforms and other digital technologies. With that, the pandemic offers the opportunity to explore the meaning and value of accessibility and what it means for accessibility to be promoted through technological interventions. This exploration is offered by Janna van Grunsven and Wijnand IJsselsteijn in their chapter, *Confronting Ableism in a Post-COVID World: Designing for World-Familiarity Through Acts of Defamiliarization*. Van Grunsven and IJsselsteijn argue that promoting accessibility involves a readiness to oscillate between two normative imperatives: (1) recognising how human well-being depends on what they term 'world-familiarity,' which can be promoted or thwarted through design and (2) recognizing how world-familiarity can harbour pernicious ableist biases that can be called into question through material gestures of defamiliarization. By presenting these two perspectives as mutually required in the design for accessibility, Van Grunsven and IJsselsteijn hope to better enable technologists and laypersons alike to reflectively evaluate if and how a technological innovation may (or may not) be access-promoting, such that it can contribute to a more just post-COVID world.

In the chapter, *Understanding Risks and Moral Emotions in the Context of COVID-19 Policy Making*, Sabine Roeser looks at how the COVID-19 pandemic

crisis highlights how the understanding of and decision making about risk always requires intrinsically ethical considerations in addition to scientific knowledge. Roeser argues that we need to consider the insights of virologists and medical experts, but we also need expertise from ethicists, social scientists, and practitioners in the arts and humanities, as well as involving the public in deliberation. Moral emotions can help bring social and ethical considerations into focus, especially in our collective evaluation of risk. Her chapter argues that moral emotions must be harnessed when designing policies to deal with pandemics: in addition to safety measures, our rich human capacities must inform such policies.

Parallel to the role of moral emotions in design, technologies also shape and guide our behaviours. In their chapter, *How to Balance Individual and Collective Values After COVID-19? Ethical Reflections on Crowd Management at Dutch Train Stations,* Andrej Dameski, Andreas Spahn, and Gunter Bombaerts explore the shift in the balance of individual versus collective values that were instigated by the COVID-19 pandemic. The incredible viral spread rate among the population and its relatively high fatality rate has initially resulted in an assertion of the importance of collective values (such as safety, collective responsibility, and conformism). In contrast, individual rights and values (such as autonomy, freedom, individual responsibility, and privacy) took a 'back seat' for the good of the collective. However, as the pandemic extended over months, there was pressure to reject the primacy of collective values and restore individual values' importance. For example, suppose we wish to return to a healthy and prosperous living within a well-functioning society. In that case, this balance shift between collective and individual values will have to be re-negotiated and resolved to a socially acceptable balance position. The authors undertake this ethical exploration through the lenses of recent changes in how particular technologies were used before and during the COVID-19 pandemic. More precisely, the authors identify and explore broad trends we see relevant to ethics, such as crowd nudging, privacy violations, as well as personal and crowd tracking, with a particular focus on crowd management and the balance shift between individual and collective values as well as individual and collective responsibility.

Samantha Copeland and Jose Cañizares Gaztelu take us to the end of our guided journey with an exploration of narratives and their importance in the creation of our coronial futures. In their chapter, *Rhetorics of Resilience and Extended Crises: Reasoning in the Moral Situation of Our Post-Pandemic World*, Copeland and Gaztelu look closely at the impact of the intersection of the ethics of personal, society and global resilience by first describing the levels of resilience rhetoric at play in the media we use to assess both our own and the situations of our loved ones from afar while we are in lock-down. The authors highlight the conjuncts and disjuncts that can shape our perception both of the resilience and also of the morality of the society we or others are surviving within, more locally speaking. That is, the intersection of personal and global resilience at the level of the community has led to an overlap of concerns, resulting for example in judgments made about local behaviour but based on global experiences. The authors conclude their chapter by looking at

how this lock-down experience may have a longer term impact on how we conceive of resilience and its relation to ethics.

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