



# Delphi Scan: Perspectives on the World After the Virus

An analysis of more than 100 books and articles for leaders hoping to better manage change in a post-pandemic environment.



*The Delphi technique was one of the original tools of modern foresight.*

It involved surveying many people to get a better sense of all the dimensions of new issues and technologies as they emerge. The technique also is particularly well suited for Human Computation, the computer science sub-discipline focused on using digital tools to help orchestrate human knowledge work. Here we have adapted the technique towards a “Delphi Scan,” synthesizing as many written perspectives on the world after Covid-19 as possible. In the process, it becomes clear that there are large clusters or patterns emerging in the conversation about what comes next.

We hope this document helps to illuminate these patterns for leaders in a position to build the future.

For more information, contact  
Dawn Alva at [Dawn@Rethinkery.com](mailto:Dawn@Rethinkery.com)

# Contents

<b>Introduction</b>	<b>1</b>
<b>Impact Cluster 1: Managing the Recovery and Preventing Future Pandemics</b>	<b>3</b>
<b>Impact Cluster 2: Transforming Work and Employment</b>	<b>7</b>
<b>Impact Cluster 3: Redesigning Learning</b>	<b>15</b>
<b>Impact Cluster 4: Rethinking Medicine and Healthcare</b>	<b>20</b>
<b>Impact Cluster 5: Realigning Governance Structures</b>	<b>25</b>
<b>Impact Cluster 6: Addressing Climate and Consumption Patterns</b>	<b>33</b>

# Introduction

As cases surge and societal futures remain uncertain, the story of the coronavirus is being rewritten daily. And with it the plotlines shift as to where it is going, how it will conclude, what toll it will take, and whether it will serve as a sufficient shock to get humans to reappraise how they live on this planet. It's clear that once the pandemic recedes, the world will find itself in a very different place. But it's unclear whether the approximations of "new normal" that have filled this period of coping will carry on into the future. The virus, and the many crises blooming in its wake, has revealed systemic inequality and unsustainability encroaching on most every aspect of public and private life. But as Rahm Emanuel, former mayor of Chicago, Illinois notoriously remarked "never let a serious crisis go to waste", will the Covid-19 pandemic lead us to take on the challenges of the present? Or will we insist on returning to a tarnished status quo, until the next pandemic upends the world again.

Much has been written about the changes that Covid-19 may bring. Here, we have reviewed dozens of these perspectives in order to map out a picture of exactly what people are saying when they speculate about the world after the virus. We have taken an organizational perspective, with specific focus on what leaders need to be

aware of, as we move into the next phase of the pandemic and recovery.

## **For leaders hoping to better manage in a post-pandemic environment, there are two overarching lessons:**

**First**, managing uncertainty and optimizing for resilience will be of critical importance for the coming period. Scenario and continuity planning, a faster cadence for strategic planning, and ingrained operational flexibility are the order of the day.

**Second**, many post-Covid-19 trends aren't new, as they are accelerations or exacerbations of things that were happening before, such as Income disparity, climate change, education system fragility, and changes in the nature of work, but the pandemic has brought a renewed focus on these issues, and therefore, a sense of urgency to address these societal challenges.

It is worth noting that many see the virus as a catalyst, rather than a primary cause, of change. For example, in CNN host and best-selling author Fareed Zakaria's view, the pandemic will be neither the hinge event of modern history, nor a brief detour from normal that ends with a vaccine.

Rather, it will be an accelerant, speeding up processes already well underway: uneven economic development, ideological polarization, climate change exacerbated by ever more rapacious patterns of consumption, automation and digitization—the pace of technological change, he says, is so swift that humans are losing track of their own creations.

James Manyika of the McKinsey Global Institute similarly observes that the acceleration of existing trends is most evident with regard to the digital economy, including not only remote working and learning, but also increased usage of telemedicine and delivery services. He says, “The future of work has arrived faster, along with its challenges—many of them potentially multiplied—such as income polarization, worker vulnerability, more gig work, and the need for workers to adapt to occupational transitions.” This acceleration stems from both technological advances but also the ad hoc response to health considerations, and will effect a lasting change on economies and labor markets.<sup>1</sup>

The view that the virus has intensified discernible trends is widely shared, with some observers pointing to positive outcomes and others laying stress on widening gulfs. Anne-Marie Slaughter, president of the New America Foundation, called the virus a “time machine to the

future,” that has condensed changes predicted to unfold over decades into a span of mere weeks.<sup>2</sup> In her assessment, these changes are not all bad, and she points to remote work, digital learning, and new recognition of care work as positive developments. At the other end of the spectrum, Constanze Stelzenmueller of the Brookings Institution told *Bloomberg* that the pandemic has thrown the spotlight on global deficiencies. “And where there have been flaws and weaknesses, the pandemic has ripped through with particular brutality.”<sup>3</sup>

This review is divided into six key themes, based on the frequently discussed topics in written discussions on the post-covid world.

1. Managing the recovery and preventing future pandemics
2. Transforming work and employment
3. Redesigning education
4. Rethinking medicine and healthcare
5. Realigning governance structures
6. Addressing climate and consumption patterns

Each theme on the next page starts with a set of key implications for leaders, followed by a summary of writing on this topic. The intention is that these theme pieces can be read individually or sequentially.

1 <https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-Covid-19.htm>

2 Slaughter, Anne-Marie. Forget the Trump Administration. America Will Save America. New York Times, March 21, 2020. <https://www.nytimes.com/2020/03/21/opinion/sunday/coronavirus-governors-cities.html>

3 <https://www.bloomberg.com/news/articles/2020-07-10/a-new-world-order-for-the-coronavirus-era-is-emerging>

# Impact Cluster 1:

## Managing the Recovery and Preventing Future Pandemics

### Summary of Actionable Advice:

- Keep in mind that the recovery will be longer than you might expect, with some estimates expecting it to last into 2025.
- Increase strategic planning cycles and consider scenario thinking to ensure responsiveness to potentially disruptive change.
- Actively optimize and design solutions for the Covid-19 recovery at all levels.
- Plan for a level of continued risk and permanent changes to daily life, even as the immediate threat of transmission subsides.
- Actively guide the resumption of familiar rhythms of education, travel, leisure, and trade.
- Be ready for new zoonotic diseases with pandemic potential.
- Prioritize organizational resilience and planning for an increase in the number of pandemics and other unknown unknowns.

The ways and extent to which the novel coronavirus will restructure how we live, work, travel, and participate in social and political life depend on how long the pandemic persists. Lamentably, most predictions underestimate its duration. Projections published in *Science* hold that resurgences of SARS-CoV-2 might reasonably last into 2025.<sup>4</sup>

The relative efficacy of the emerging series of vaccines remains a question, despite roll-outs of the Pfizer vaccine having already begun in the UK to those considered to be in the top priority groups.<sup>5</sup> While historically some vaccines provide protection for decades—such as those against measles or polio—others, including those for influenza, wear off over time. This duration has implications for the seismic changes already underway. At present, it is unknown how long the Pfizer vaccine provides protection against the virus, however, it is hoped that its effect will last for ‘months or years’ and that at worst, people may require an annual booster.<sup>6</sup> Moreover, distributing vaccines during a time when the basic tenets of

4 Kissler, Stephen M., et al. “Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period.” *Science* 368.6493 (2020): 860-868. <https://science.sciencemag.org/content/368/6493/860>

5 <https://time.com/5918842/first-covid-19-vaccine-patients/>

6 <https://www.newscientist.com/article/2261805-everything-you-need-to-know-about-the-pfizer-biontech-covid-19-vaccine/>

public health are subject to extreme ideological interpretations, when expertise is undermined and science rendered suspect, requires coordinated political will and, unfortunately, more time.

Despite hopes that the vaccines will come to the rescue, they may not provide an early exit, especially considering the first vaccine to be approved—the Pfizer—is already encountering severe logistical problems. Made with a new technology called mRNA, the vaccine must be stored at temperatures of minus 70 degrees Celsius, which is making it near-impossible to distribute throughout care homes as was the government’s initial plan.<sup>7</sup>

Nicholas Christakis, director of the Human Nature Lab at Yale University maintains, “With all the disparate vaccine trials under way, we will eventually invent several vaccines, of varying effectiveness—just not in time to make a major difference in the primary course of the pandemic.”<sup>8</sup> Christakis, who is also the author of *Apollo’s Arrow: The Profound and Enduring Impact of Coronavirus on the Way We Live*, distinguishes between different periods in the pandemic’s future course. There is the immediate period of mask-wearing, social distancing and upheaval. An intermediate period in which people will still be recovering from the overall clinical, psychological, social

and economic shock of the pandemic will last until about 2024, and thereafter the post-pandemic moment will arrive.

Others question whether the US has the foresight and fortitude to manage the recovery, especially as it plays out over years. In one case scenario developed by the Millennium Project, the US struggles with declaring premature victory over the virus and gives up before the task is complete. They write: “We expect this will happen with the ongoing virus response, but the temptation will be even more severe with regard to the pandemic-battered economy.”<sup>9</sup>

According to a survey of leading epidemiologists published in *Nature*, the virus will become endemic if infections continue to rise rapidly without a vaccine or lasting immunity. “That would be really painful,” one of the surveyed epidemiologists states. However, it’s not beyond the realm of imagination or recent experience. Malaria, for instance, is a preventable and treatable disease that kills more than 400,000 people each year. “These worst-case scenarios are happening in many countries with preventable diseases, causing huge losses of life already,” says Samir Bhatt, an infectious-disease epidemiologist at Imperial College London and a co-author of the study.<sup>10</sup>

7 <https://www.wsj.com/articles/u-k-begins-rollout-of-pfizers-covid-19-vaccine-in-a-first-for-the-west-11607419672>

8 <https://www.wsj.com/articles/the-long-shadow-of-the-pandemic-2024-and-beyond-11602860214>

9 Three futures of the COVID-19 pandemic in the United States January 1, 2022. Millennium Project, October 2020. <http://www.millennium-project.org/wp-content/uploads/2020/10/Covid-Scenarios-full-report-3.pdf>

10 Scudellari, Megan. How the pandemic might play out in 2021 and beyond. *Nature*, 584, 22-25 (2020). <https://www.nature.com/articles/d41586-020-02278-5>



Photo by Mufid Majnun on Unsplash

## Fortifying against future pandemics

It's tempting to look to plagues of the past for clues into how the post-pandemic future may play out. Countries today are closing their borders, just as the Italian city of Pistoia locked its gates against the encroaching bubonic plague in the seventeenth century. The late-medieval "Black Death" all but wiped out Europe with a toll between 75 million and 200 million, and yet it had a century-long run. The Spanish flu killed 50 million people but largely vanished within two years. But comparisons to these precedents may be of little value, namely because of the ways speed and inequity are built into the spread of Covid-19. Europe's bubonic plague was largely indifferent to social status; likewise the Spanish flu. The coronavirus RNA was rapidly decoded—a vaccine will not take decades—and yet knowledge of how to control it will not benefit everyone equally.<sup>11</sup>

The ways that the virus is exposing the seams of inequality and instability reinforce the idea that it is, in part, a pandemic of our own doing. Modern systems are complicit in its emergence and uncontrolled spread. Ed Yong in the *Atlantic* maintains that the lopsided and unsustainable dynamics of 21st century life are what made Covid-19 possible. "Humanity's relentless expansion into wild spaces; soaring levels of air travel; chronic underfunding of public health; a just-in-time economy that runs on **fragile supply chains**; health-care systems that yoke medical care to employment; social networks that rapidly spread misinformation; the devaluation of expertise; the marginalization of the elderly; and centuries of structural racism that impoverished **the health of minorities and indigenous groups**." He argues, "We built a world that was prone to it, but not ready for it."<sup>12</sup>

<sup>11</sup> Deaton, Angus. We may not all be equal in the eyes of coronavirus. Financial Times, April 5, 2020. <https://www.ft.com/con>

<sup>12</sup> Yong, Ed. "Why the coronavirus is so confusing. The Atlantic, April 29, 2020. <https://www.theatlantic.com/health/archive/2020/04/pandemic-confusing-uncertainty/610819/>

Yong's observations, paired with the rigorous reporting he has done on the virus, point to a disturbing prospect: a post-pandemic future rife with other **zoonotic** diseases that potentially intersect with Covid-19. We've largely managed to dodge disaster during the major infectious disease threats of the past two decades—SARS, MERS, Ebola, avian influenza and swine flu. However, scientists are quick to remind us that Covid-19 is hardly the last pandemic. James Wood, head of the Department of Veterinary Medicine at the University of Cambridge, told the BBC that the new Asian swine flu “comes as a salutary reminder” that we are constantly at risk with increasing emergence of new pathogens, and that farmed animals, with which humans have greater contact than with wildlife, may act as the source for pandemic viruses.<sup>13</sup> These risks may be more than hypothetical. In July of 2020, a group of Chinese investigators published findings in *Proceedings of the National Academy of Sciences* flagging a new swine influenza circulating within pig populations in Asia that is known to also

infect humans; it is thought to have pandemic potential.<sup>14</sup> Some have turned to the concept of a “gray rhino” to describe this situation. In contrast to “black swans,” the “gray rhino” is a threat that is ultimately very likely to emerge, although its timing can be unpredictable.<sup>15</sup>

McKinsey extends these observations with an even bleaker note of caution: “While some are calling the Covid-19 crisis a 100-year event, we might come to see the current pandemic as a test run for a near future recurrence, with even more serious consequences.”<sup>16</sup>

Instead of trying to make sense of Covid-19 in relation to pandemics past, a more useful analogue is likely found in the aftermath of recent crises, such as 9-11 and the Great Recession of 2008-09, events that reshaped society in lasting ways, from how we travel and purchase homes, to the composition of the geopolitical map, and to the level of surveillance we accept as part of the cost of security.

---

13 <https://www.bbc.com/news/health-53218704>

14 Sun, Honglei, et al. “Prevalent Eurasian avian-like H1N1 swine influenza virus with 2009 pandemic viral genes facilitating human infection.” *Proceedings of the National Academy of Sciences* 117.29 (2020): 17204-17210.

15 <https://thegrayrhino.com/the-top-gray-rhinos-of-2020/>

16 <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/not-the-last-pandemic-investing-now-to-reimagine-public-health-systems>

# Impact Cluster 2: Transforming Work and Employment

## Summary of Actionable Advice:

- Strategically consider the acceleration of existing trends such as AI-driven automation and widening income inequality.
- Consider opportunities to fortify national and global systems to mitigate future disruptions.
- Consider the increasingly rapid adoption of new tools for business workflow automation, such as enterprise AI and Robotic Process Automation.
- Understand strategic opportunities for platforms that can sustain an innovative and entrepreneurial culture that produces financial growth as well as widespread stability, satisfaction, and personal development.
- Find ways to mitigate impacts to women and to early-career workers, who have taken a particular hit during the pandemic.
- Plan to fill workforce skill-gaps related to new jobs and technologies.

- Assess opportunities as employers related to recruiting top talent by offering quality-of-life benefits and being able to draw from larger global talent pools.
- Evaluate the potential of automation to increase the standardization of knowledge work and business processes, eventually allowing more of this work to be automated. Anticipate and mitigate the political and social dimension of this shift.

The future of work, as defined by increased automation, globalization and technological innovation was, in the words of McKinsey “always coming.”<sup>17</sup> But Covid-19 has quickened the pace, and not everyone will benefit from these rapid changes. The economic downturn—the worst since the Great Depression—has played out in the fault lines of inequality in the US and internationally, exacerbating the wealth gap that favors white men above just about everyone else.

The US shed a staggering 40 million jobs at the height of the pandemic. According to Pew, 15% of adults report that they were

17 <https://www.mckinsey.com/featured-insights/future-of-work/from-surviving-to-thriving-reimagining-the-post-Covid-19-return#>

laid off or lost their jobs because of the coronavirus outbreak. Of those, one-third say they have returned to their prior job, while 15% are working at a different job. Half say they are currently unemployed. In addition to lost jobs, about one-in-five adults say that their wages or hours were reduced.<sup>18</sup>

In 2013, years before the pandemic, researchers at the Oxford Martin School estimated that 47% of total US employment was at risk of automation, and demonstrated that wages and educational attainment were inversely related to the probability of computerization.<sup>19</sup> In other words, lower waged and lower skill positions (which are disproportionately held by people of color and women) are more vulnerable to automation.

While the current labor market improved faster than early grim predictions held, signs of lasting scars persist in the form of rising long-term unemployment and permanent job loss. Recent research from the University of Chicago suggests that as many as 4 in 10 jobs may never return.<sup>20</sup> These conditions contain echoes of the 2008 recession, which made clear that extended periods of unemployment damage workers earnings, as well as their mental health and social satisfaction. Ian Shepherdson, chief

economist of Pantheon Macroeconomics, told the *New York Times*, “The risk is that you end up with people permanently detached from the labor market, and either you never get them back in or it takes you 10 years to get them back in, like it did the last time.”

A return to the labor force will likely require new skills and training for a number of workers, particularly those in the service sector whose positions may have permanently disappeared. As much as 75% of independent restaurants may shutter for good; warehouse jobs will likely be replaced by automation; the tourism sector is going to take an extended hit. However, in the absence of clear knowledge around what the future holds, many may find themselves “frozen in place by the uncertainty of not knowing what the economy is going to look like,” said Thomas Barkin, president of the Federal Reserve Bank of Richmond.<sup>21</sup>

Before the pandemic nearly 30% of college-educated workers in the US reported working from home at least some of the time.<sup>22</sup> In the new normal employees across sectors and functions have adjusted to remote work, using digital communication and collaboration tools. Globally, roughly 4 out of 5 workers have been affected by lockdowns and stay at home orders.

---

18 <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-Covid-19-continues-to-hit-lower-income-americans-the-hardest/#:~:text=Fully%2015%25%20of%20adults%20report,they%20are%20currently%20not%20employed.>

19 Frey, Carl Benedikt, and Michael Osborne. “The future of employment.” (2013). <https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf>

20 Barrero, Jose Maria, Nicholas Bloom, and Steven J. Davis. Covid-19 is also a reallocation shock. No. w27137. National Bureau of Economic Research, 2020. [https://bfi.uchicago.edu/wp-content/uploads/BFI\\_WP\\_202059.pdf](https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf)

21 <https://www.nytimes.com/2020/10/03/business/economy/coronavirus-permanent-job-losses.html>

22 <https://www.bls.gov/news.release/flex2.t03.htm>

By some measures it appears that this shift will last indefinitely, reshaping workforce rhythms, particularly for white collar workers who have been encouraged to stay away from the office until 2021 and beyond. With major corporations shuttering physical headquarters or relocating to cheaper pastures in the suburbs, the standard urban office scape is bound to change, altering professional life, as well as the vibrancy of downtown. Conferences, in-person meetings, and even handshakes might be deemed not worth the risk of infection. A large, permanent shift to working from home would have powerful effects on the spatial distributions of jobs, labor supply, and worker spending, with profound implications for the future of cities.<sup>23</sup> Nicholas Christakis writes, “Cities will be duller, as many small retail firms go out of business, leaving only large, well-capitalized chains to fill the urban landscape. As people continue to shift to working from home, employers will realize that they need less office space, which means fewer custodians, building managers, rental agents and so on. For some people, the reality of having to obey stay-at-home orders for a family of four in a two-bedroom city apartment might not be something they want to repeat, spurring them to look for housing in less urban areas and thus shifting demand in the enormous real-estate industry.”

One outcome has been a blurring of boundaries between work and home. While

connected devices have brought these spaces closer together in recent years, the pandemic has resulted in a shift from *working at home* to *home as work*. These trends, ironically, have been exacerbated by expectations that white collar workers perform new feats of multi-tasking, juggling professional responsibilities, domestic obligations, family care, and children’s learning. In France in 2016, alarm over “info-obesity” led the government to grant workers the right to disconnect out of office hours.<sup>24</sup> But in the US, where prestige jobs command, and moreover expect, long hours, it’s unlikely that workers will be encouraged to pivot from being on all the time.

## Automation

Facing the pandemic, companies were quick to turn to robots to make up for lost human labor. As if overnight, robots appeared to clean floors at airports, to take temperatures at hospitals, to patrol empty real estate, to increase industrial production, and even to make salad.<sup>25</sup>

These new waves of automation are likely to further expose existing inequities along lines of race, gender, and income status. Even before the pandemic, McKinsey estimated that Black Americans are especially vulnerable to job disruptions because they are disproportionately concentrated in support roles that have a high “automation potential” and are often geographically removed from future job growth centers.<sup>26</sup>

23 [https://bfi.uchicago.edu/wp-content/uploads/BFI\\_WP\\_202059.pdf](https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf)

24 <https://www.bbc.com/news/world-europe-38479439>

25 <https://time.com/5876604/machines-jobs-coronavirus/>

26 Baboolall, David, et al. “Automation and the future of the African American workforce. McKinsey, November 14, 2018. <https://www.mckinsey.com/featured-insights/future-of-work/automation-and-the-future-of-the-african-american-workforce>

In a 2019 report, McKinsey states, “By 2030, the employment outlook for African Americans—particularly men, younger workers (ages 18–35), and those without a college degree—may worsen dramatically. Black and Latino workers will capture a smaller share of new job growth and risk significant job loss or disruption due to automation; roughly a quarter of Black and Latino workers face displacement by automation by 2030.<sup>27</sup> For Black workers this translates into 132,000 displaced jobs.

Most American jobs are in the service sector, making them especially vulnerable to automation. In a 2018 report on the intersection of automation, demographics and inequality, Bain estimated that by the end of the 2020s, automation may eliminate 20% to 25% of current jobs, hitting middle- to low-income workers the hardest. Automation may solve one problem by increasing productivity and powering

growth but creates another by potentially eliminating millions of jobs and suppressing wages for many workers.<sup>28</sup>

Despite the ongoing climate of disruption, the US spends less than ever on retraining workers—just 0.1% of GDP, less than half of what it spent 30 years ago.<sup>29</sup> In an interview with *TIME*, Mark Muro of the Brookings Institution said, “The real automation problem isn’t so much a robot apocalypse. It is business as usual of people needing to get retraining, and they really can’t get it in an accessible, efficient, well-informed, data-driven way.”<sup>30</sup>

To the anxieties over humans losing out to automation, there has been a chorus of rebuttals. Technological advancement will create new jobs. Positions of rote if not downright drudgery will go to the robots, freeing minds for creative pursuits, problem solving and challenging tasks. But



Photo by Pexels

27 Cook, Kelemwork, et al. The future of work in Black America. McKinsey, October 4, 2019. <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-in-black-america>

28 Harris, Karen, et al. Labor 2030: The Collision of Demographics, Automation and Inequality. Bain, February 7, 2018. <https://www.bain.com/insights/labor-2030-the-collision-of-demographics-automation-and-inequality/>

29 <https://time.com/5876604/machines-jobs-coronavirus/>

30 <https://time.com/5876604/machines-jobs-coronavirus/>

critics point out that the number of new jobs created is often quite small compared to the volumes lost. Ted Shelton, founder and CEO of Robodomo, an automation consultancy, said, “It has become popular for organizations to say that the goal is to ‘release people to perform higher-value tasks,’ but most organizations have no idea what those higher-value tasks might be. And, in any case, the cost to automate usually must be justified by a cost reduction, which typically means a reduction in staff.”<sup>31</sup> Today’s most valuable companies are smaller than they were in the past. In 1964, AT&T employed 758,611 people; the most valuable company today, Apple, has around 137,000 employees. Although today’s big companies make more than ever, they share that income with fewer employees, and more of their billion dollar profits goes to shareholders. “Look at the business model of Google, Facebook, Netflix. They’re not in the business of creating new tasks for humans,” Daron Acemoglu, an MIT economist who studies automation and jobs told *TIME*.<sup>32</sup>

All the same, the drive to keep infections at bay has resulted in companies replacing humans with machines at a rapid clip. Over the next two years, according to a recent Bain & Company survey of nearly 800 executives worldwide, the share of companies scaling up automation technologies will at least double.<sup>33</sup>

“This pandemic has created a very strong incentive to automate the work of human beings,” says Oxford economist Daniel Susskind, author of *A World Without Work: Technology, Automation and How We Should Respond*. “Machines don’t fall ill, they don’t need to isolate to protect peers, they don’t need to take time off work.”<sup>34</sup> According to a recent paper by economists at MIT and Boston University, robots could replace as many as 2 million more workers in manufacturing alone by 2025.

One arm of innovation, robotic process automation (RPA) is poised to expand during and after the pandemic. RPA allows companies to program computer software to emulate the actions of a human worker online, and the technology has evolved dramatically from task automation to replicating whole job functions, including complicated tasks.

For instance, when a raft of Chinese exporters effectively shut down operations earlier in 2020, the consulting firm Accenture developed an RPA tool to automatically identify alternatives for its customers. The tool scrapes the web and uses natural language processing algorithms to find suppliers that might be able to step in with missing materials or components.<sup>35</sup> Five years from now, hiring people to “mindlessly move data from one screen to the other” will be an obsolete concept

31 <https://searchcio.techtarget.com/feature/Robot-workforce-evolves-from-mimicking-tasks-to-taking-on-jobs>

32 <https://time.com/5876604/machines-jobs-coronavirus/>

33 <https://www.bain.com/insights/intelligent-automation-getting-employees-embrace-bots/>

34 <https://time.com/5876604/machines-jobs-coronavirus/>

35 <https://www.wired.com/story/pandemic-propelling-new-wave-automation/>

predicts Daniel Dines, founder of the RPA vendor UiPath. “This is a thing of the past, as much as ploughing the fields is a thing of the past.”<sup>36</sup>

RPA's are most frequently invoked as a part of a future hybrid workforce, helping organizations deal with a surge in demand or business activity. Some bots are even given human personas, which is thought to smooth their integration into the workforce and make it easier for human employees to embrace their new digital colleagues. However, it's also possible to see RPA's replace already marginalized workers, say those in subcontracted call center jobs. Some anticipate a wave of offshoring 2.0, as more rote tasks are outsourced to a robotic workforce.

## Women are losing their economic gains

Indeed, in place of accommodations that recognize the stressors of the current balancing act, women are leaving the formal workforce in droves. In September, 865,000 women left the US workforce—four times more than men. These trends upset decades of progress in women's professional advancement and educational attainment. Women outpace men in terms of earning doctorates and in enrollment in medical and law schools. However, at home, women often return to more traditional roles, doing the majority of cleaning,

cooking, and parenting. As NPR points out: “The pandemic's female exodus has decidedly turned back the clock by at least a generation.” The share of women in the workforce has now fallen below 57%—the same rate as 1988.<sup>37</sup>

Speaking to these trends, Federal Reserve Governor Lael Brainard noted, “If not soon reversed, the decline in the participation rate for prime-age women could have longer-term implications for household incomes and potential growth.”<sup>38</sup> Research suggests that the penalty for leaving the workforce can be lasting. An employment gap of just one year leads to a 39% decrease in annual earnings and that increases over time, according to a report from the Institute for Women's Policy Research.<sup>39</sup>

## Young people are being adversely economically impacted

Predictions on the fate of young people, particularly those in college or entering the labor force, run from concern to breathless panic. In America and globally, young adults are overrepresented in sectors where jobs are disappearing and they are struggling to find work. As a result, they are lowering their career ambitions, turning to internships, and taking an any-means-necessary approach to earning a wage. Young people without higher education are especially vulnerable.

36 <https://siliconangle.com/2020/09/23/Covid-19-spurs-enterprise-awareness-robotic-process-automation-value-cubeconversations/>

37 <https://www.npr.org/2020/10/28/928253674/stuck-at-home-moms-the-pandemics-devastating-toll-on-women>

38 <https://www.federalreserve.gov/newsevents/speech/brainard20201021a.htm>

39 [https://iwpr.org/wp-content/uploads/2020/08/C474\\_IWPR-Still-a-Mans-Labor-Market-update-2018-2.pdf](https://iwpr.org/wp-content/uploads/2020/08/C474_IWPR-Still-a-Mans-Labor-Market-update-2018-2.pdf)



Photo by Ketut Subiyanto on Pexels

For some younger workers, this is the second blow in just over a decade. A recent analysis by McKinsey noted, “The generation that first entered the job market in the aftermath of the Great Recession is now going through its second ‘once-in-a-lifetime’ downturn.”<sup>40</sup> American University economist Gray Kimbrough told the *Washington Post*, “The story here is not just that it’s a bad recession, and that it’s hitting young people more, but that it’s hitting people who have already been hit.”<sup>41</sup>

Policy analyst Ana Kent of the St Louis Fed says millennials were still reeling from the blow of the 2008 recession when the pandemic struck; most also had little by way of a financial buffer. “About 1 in 4 families have **negative** net worth, meaning their debts outsize their assets. And roughly 1 in 6 say they would be completely unable to pay for a \$400 emergency expense (i.e., not

with cash, credit cards, borrowing or selling assets). For those experiencing job loss, these emergencies can prove catastrophic without a sufficient financial cushion.”<sup>42</sup>

If history is any indicator, the economic effects of the virus are likely to persist. The 2008 recession pushed young workers down the wage ladder, and effectively kept them there. Even as older workers—Gen X and Baby Boomers—regained what they’d lost over the course of a decade, the average millennial lost about 13% of their earnings between 2005 and 2017, according to a 2019 working paper from the US Census.<sup>43</sup>

Research tracking young white men who graduated from college from 1979 to 1988—a period that included the double-dip recession of the early 1980s—found they got stuck in low-quality, low-pay jobs.

---

40 <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/Covid-19-and-jobs-monitoring-the-us-impact-on-people-and-places>

41 <https://www.washingtonpost.com/business/2020/05/27/millennial-recession-Covid/>

42 Kent, Ana H. Three Reasons Why Millennials May Face Devastating Setback from Covid-19. On the Economy, Federal Reserve Bank of St Louis, May 21, 2020. <https://www.stlouisfed.org/on-the-economy/2020/may/three-reasons-millennials-may-face-devastating-setback-Covid19>

43 Rinz, Kevin. Did Timing Matter? Life Cycle Differences in Effects of Exposure to the Great Recession. No. 19-25. 2019. <https://kevinrinz.github.io/recession.pdf>

Even after the economy recovered, they had a hard time moving into better jobs.<sup>44</sup> Additional research suggests that adversity at the start of one's career can reverberate throughout midlife. Cohorts that came of age during the early 1980s recession worked more though earned less; were less likely to be married or have children; and suffered increases in mortality in midlife due to heart disease, lung cancer, and liver disease, as well as drug overdoses.<sup>45</sup>

Alicia Munnell and Wenliang Hou of the Center for Retirement Research at Boston College documented how millennials, hit hard by the Great Recession, are less financially secure than young adults from preceding generations. They have more student debt and less money in their retirement plans. Their net worth is lower than that of boomers or Gen Xers. Fewer own homes and fewer are married.<sup>46</sup>

Looking at the current generation of young people, the *Washington Post* declared, "Millennials will bear these economic scars the rest of their lives, in the form of lower earnings, lower wealth and delayed milestones, such as homeownership."<sup>47</sup>

Moving forward, the economic impact on younger workers is contributing to demographic changes that will reverberate for decades to come. While some early commentators has half-seriously speculated that millions of people staying at home would cause a spike in birth rates, the opposite has been true. While speculation on the size of the drop in birth rates remains open, estimates suggest that it will likely be in the hundreds of thousands.<sup>48</sup>

---

44 Kahn, Lisa B., The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy (September 12, 2006). Available at SSRN: <https://ssrn.com/abstract=702463> or <http://dx.doi.org/10.2139/ssrn.702463>

45 <https://www.ipr.northwestern.edu/documents/working-papers/2020/wp-20-02.pdf>

46 <https://www.nytimes.com/2020/05/19/business/economy/coronavirus-young-old.html>

47 <https://www.washingtonpost.com/business/2020/05/27/millennial-recession-Covid/>

48 <https://www.theatlantic.com/family/archive/2020/11/covid-19-pandemic-births-baby-bust/617149>

# Impact Cluster 3: Redesigning Learning

## Summary of Actionable Advice:

- Support the search for new approaches to education and training.
- Take a more active role in training and reskilling workers for new types of work.
- Reevaluate the emphasis on formal credentialing by looking at skills before diplomas.
- Prepare for a period of extreme fluctuation in the higher education and training space.
- Recognize the strengths but also the limitations of remote learning.

Policymakers, parents and learners the world over are grappling with what the pandemic means for education in the long term. School disruptions have affected roughly 90% of the world's students, some 1.6 billion learners, and could last until 2024. Moreover, these disruptions occur at a time when the world was already rethinking the goals of education. Observers have pointed

out that students are not equipped with the skills and competencies they need to succeed in the fast-changing global landscape, despite increased investment in education. Andreas Schleicher of the Organization for Economic Cooperation and Development observed in 2018: “Over the past decade there has been virtually no improvement in the learning outcomes of students in the Western World, even though expenditure on schooling rose by almost 20% during this period.”<sup>49</sup>

Globally, school enrollment may continue to decline even after schools reopen. Even before the coronavirus 258 million children were out of school. According to a report from Save the Children, an additional 9.7 million may never return.<sup>50</sup> The Global Partnership for Education offers the bleaker prediction that some 10 million girls will stay out of school for good.<sup>51</sup> Internationally, as in the US, these learning losses carry lasting implications that cross development, health, economic advancement and personal well-being.

---

49 Fullan, Michael. “Learning and the pandemic: What’s next?” *Prospects* 49.1 (2020): 25-28. <https://link.springer.com/article/10.1007/s11125-020-09502-0>

50 <https://www.savethechildren.net/save-our-education-report/>

51 <https://www.globalpartnership.org/blog/displacement-girls-education-and-Covid-19>



Photo by Julia Cameron on Pexels

Moreover, disruptions to the education system will magnify existing disparities, widening the opportunity gap—that is, the resources and conditions that enhance learning and development—between low-income students and their more affluent peers. One of the most critical gaps is uneven access to digital tools and devices that have become even more central with the shift to remote learning.<sup>52</sup>

An analysis from McKinsey notes that school shutdowns not only cause disproportionate learning losses for Black and Latinx students—compounding existing gaps—but also lead more of them to drop out. The consequences touch not only individuals, but the US economy as a whole. “With lower levels of learning and higher numbers of drop-outs, students affected by Covid-19 will probably be less skilled and therefore less productive than students from generations that did not experience a similar

gap in learning.”<sup>53</sup> McKinsey puts the future hit to GDP at \$173 billion to \$271 billion a year by 2040—a 0.8 to 1.3 percent loss.

At the same time, the education system faces significant financial struggles. In the US, districts will contend with declining enrollment and lost revenue, which could be compounded by the flight of advantaged families to schooling options outside the public system.

Paul Hill and Ashley Jochim from the Center on Reinventing Public Education say a return to the pre-coronavirus status quo is impossible. “Long-standing assumptions about when, where, and how instruction must occur are shifting in ways that make it impossible to simply return to ‘normal,’” they write. While education politics used to be mostly the province of teachers and administrators, families have come to play a more central role, and are increasingly

52 <https://www.epi.org/publication/the-consequences-of-the-Covid-19-pandemic-for-education-performance-and-equity-in-the-united-states-what-can-we-learn-from-pre-pandemic-research-to-inform-relief-recovery-and-rebuilding/>

53 <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/Covid-19-and-student-learning-in-the-united-states-the-hurt-could-last-a-lifetime>

active in trying to fill perceived gaps in learning, whether through turning to private schools, homeschooling, or, more recently, pandemic pods.<sup>54</sup> Moreover, when students do return to school they will carry with them their experiences of disruption, missed learning and trauma, making a simple restart impossible.

High hopes are pinned to the promise of education technology in providing learning continuity during the crisis. However, as the world's remote experiment continues, there is tremendous debate over the extent to which digital learning can substitute, or even serve as a viable stand in, for schools and teachers.<sup>55</sup> Andreas Schleicher has warned that despite some promise shown by technology options during the coronavirus pandemic, "education systems need to pay close attention that technology will not further amplify existing inequalities in access and quality of learning."

Pre-pandemic, most teachers had limited exposure to online tools or pedagogy, and during shutdowns have had to cobble together ad hoc solutions. These variable strategies, even as they are improving with time, are not likely to lead to optimal

outcomes.<sup>56</sup> In a report co-authored by Microsoft in support of the Covid-19 Global Education Coalition, the authors state: "The pandemic vividly exposed our systemic inability to optimize the use of technology, and truly ensure equity, well-being and quality of learning. Education reform has been high on the agenda for many systems, but has focused narrowly on literacy, numeracy, and high school graduation without addressing the holistic needs of students in an increasingly unpredictable global society."<sup>57</sup>

However, the authors continue, the pandemic has also provided "a vacuum where innovation can be tried, assessed and developed further."<sup>58</sup> Necessity, ever the mother of invention, has accelerated a spate of experiments in remote and blended learning, online community building, and the use of digital tools to support academic achievement as well as social and emotional development. Looking forward, blended learning, which combines digital and face-to-face approaches, is likely here to stay, and as it becomes incorporated into the new normal, we'll see improved assessments, collaboration tools, and professional development platforms.<sup>59</sup>

---

54 <https://www.brookings.edu/blog/brown-center-chalkboard/2020/10/29/can-public-education-return-to-normal-after-the-Covid-19-pandemic/>

55 Six Ways Covid-19 Will Shape the Future of Education. Center for Global Development, July 22, 2020. <https://www.cgdev.org/blog/six-ways-Covid-19-will-shape-future-education>

56 <https://www.epi.org/publication/the-consequences-of-the-Covid-19-pandemic-for-education-performance-and-equity-in-the-united-states-what-can-we-learn-from-pre-pandemic-research-to-inform-relief-recovery-and-rebuilding/>

57 <https://edudownloads.azureedge.net/msdownloads/Microsoft-EducationReimagined-Paper.pdf>

58 <https://edudownloads.azureedge.net/msdownloads/Microsoft-EducationReimagined-Paper.pdf>

59 <https://www.brookings.edu/blog/education-plus-development/2020/04/10/top-10-risks-and-opportunities-for-education-in-the-face-of-Covid-19/>

## The future of remote learning

To some, the pandemic provides a critical opportunity to correct a languishing system, and to cultivate new competencies that emphasize global citizenship, cooperation, and creativity.<sup>60</sup> The Microsoft report offers an ideal vision of a “hybrid learning environment,” rich in meaningful technology that supports “learning at school, at home, in the community and beyond.”<sup>61</sup>

And yet, for all the rallying around digital solutions, skepticism abounds, and even students appear to overwhelmingly want classroom-based experiences. A 2018 study from Microsoft and McKinsey indicates that they want teachers, not computers.<sup>62</sup>

To some, the billions of dollars of investment in education technology has not resulted in tangible gains in children’s learning. In the 2020 book *Slaying Goliath: The Passionate Resistance to Privatization and the Fight to Save America’s Public Schools*, former assistant secretary of education Diane Ravitch shows that there is no evidence to support (and there is much to contradict) the claim that online learning produces superior results.

Education reporter Valerie Strauss writes in the *Washington Post* that when children do return to school, they will need more than

a Big Tech strategy. “They will need more face-to-face support in the here and now—to get back the habits of lining up, taking turns and listening to others; to get help dealing with the post-traumatic stresses that accompany disasters such as this; to get the special education support to help them deal with learning disabilities and ADHD distractions for which there was little or no support at home, and so on.”<sup>63</sup>

Perhaps, though, the use and utility of technological tools looks different in institutes of higher education, especially as colleges and universities struggle to manage unfavorable balance sheets. A report from the Center for American Progress notes that colleges that are “too reliant on tuition in place of public funding” will quickly cease to resemble places of higher education as we know it. Public institutions never fully recovered from heavy cuts to their budgets in the wake of the Great Recession. “As a result, the US higher education system is vulnerable to a potentially much deeper economic crisis.”<sup>64</sup>

Some believe technology tools, particularly online and hybrid learning, will be a major part of how institutions survive and continue to provide value to students. Joshua Kim, director of Online Programs and Strategy at the Dartmouth Center for the Advancement

---

60 <https://www.npdl.global/>

61 <https://edudownloads.azureedge.net/msdownloads/Microsoft-EducationReimagined-Paper.pdf>

62 [http://edudownloads.azureedge.net/msdownloads/Microsoft\\_Education\\_Classof2030.pdf](http://edudownloads.azureedge.net/msdownloads/Microsoft_Education_Classof2030.pdf)

63 <https://www.washingtonpost.com/education/2020/08/06/education-technology-students-will-need-wont-after-Covid-19/>

64 <https://www.americanprogress.org/issues/education-postsecondary/reports/2020/06/11/485963/mounting-peril-public-higher-education-coronavirus-pandemic/>



Photo by Julia Cameron on Pexels

of Learning, believes blended learning is the future of higher education. “In the future, every president, provost, dean and trustee will understand that online education is not only a potential source for new revenues. Instead, online education will be recognized as core to every school’s plan for institutional resilience and academic continuity.”

Hans Taparia, of the New York University Stern School of Business, says that the pandemic has elevated online education from “a hobby at most universities” to “a backup plan.” He argues that if universities could strategically leverage this moment, online learning would not only expand

education access but also shore up revenues “in a way that is more recession-proof, policy-proof and pandemic-proof.”<sup>65</sup>

However, others are more circumspect of Big Tech’s entry into higher education. Scott Galloway, of the Stern School of Business, envisions a post-pandemic future wherein elite universities partner with the tech giants (i.e., MIT@Google; iStanford; HarvardxFacebook). According to Galloway, these partnerships will allow universities to expand enrollment by offering affordable hybrid degrees. Galloway predicts hundreds, if not thousands, of brick-and-mortar universities will go out of business and those that remain will primarily cater to children of the one percent.<sup>66</sup>

---

65 <https://www.nytimes.com/2020/05/25/opinion/online-college-coronavirus.html>

66 <https://nymag.com/intelligencer/2020/05/scott-galloway-future-of-college.html>

# Impact Cluster 4: Rethinking Medicine and Healthcare

## Summary of Actionable Advice:

- Prepare for a period of fluctuation in the healthcare space.
- Find opportunities to de-escalate public health conversations and open more responsive channels of communication.
- Prepare to keep up with a variety of new healthcare offerings and tools both for your household and at an organizational level.

The appalling (and as of late 2020 seemingly uncontrolled spread) of Covid-19 in the US has prompted a reckoning over the country's healthcare infrastructure, from access to services, to insurance coverage, the structure of hospitals, and the nature of pharmaceutical funding and research.

The pandemic has stressed healthcare systems at a time when individuals increasingly bear the brunt of responsibility for paying for medicine and wellness. As James Manyika of the McKinsey Global Institute points out, the trend over the past two decades has been a steady

shift in responsibility from institutions to individuals.<sup>67</sup> With millions out of work, the ranks of the uninsured have swelled. Some observers believe the pandemic could help bring about an end to the American practice of tethering health benefits to employment status. Globally, straining health systems have governments reappraising a range of benefits from single payer options, to universal basic income and paid sick leave. Alongside the economic fallout of Covid-19, the stark public health outcomes underscore an urgent need to reassess the social contract.

The pandemic's patterns of harm, falling disproportionately on people of color as well as the elderly, have also galvanized discussion over the intersectional nature of public health and the ways structural racism contour risk.<sup>68</sup> Covid-19 is killing people of color, particularly Black people, at starkly unequal rates. In Chicago, for instance, Black residents make up one-third of the population but account for more than two-thirds of Covid deaths.

The horrific toll the virus has had on nursing homes has reinforced this uneven impact,

67 <https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-Covid-19.htm>

68 <https://www.brookings.edu/blog/fixgov/2020/04/09/why-are-blacks-dying-at-higher-rates-from-Covid-19/>

as minority and low-income people are more often employed in “essential” jobs that put them in harm’s way. As *Health Affairs* reports, “Black and Latinx workers, who make up nearly half the [long-term services and support] direct care workforce, faced grave threats from Covid-19 in their workplaces and in their communities—all while receiving substandard wages and few or no benefits, including paid sick leave.”<sup>69</sup> These inequities were evident among residents as well; nursing homes with the fewest white residents were more than twice as likely to log case counts or deaths.

These tragedies have led to calls for the end of traditional assisted living facilities.<sup>70</sup> Some maintain the concentrated deaths among cloistered elderly populations could be avoided by plans that allow for aging in place. They see a future where the private sector meets new demands for home health aides, house calls, and in-person medical services delivered to elder and vulnerable populations.

## The new normal of telemedicine

Like other sectors, health care is steadily evolving due to automation and digitization. The pandemic has hastened the use of telemedicine, which while previously gaining in acceptance faced a number of setbacks due to the regulatory climate

and an absence of supportive payment structures.<sup>71</sup> Rural populations, typically removed from access to quality services, may stand to benefit in particular. Because of the virus, doctors across fields of practice have been pushed to embrace telemedicine, instantly transforming routine primary care as well as specialist interactions. Chris Jennings, a former health care adviser to the Obama and Clinton administrations, told *STAT*, “From addiction doctors prescribing drugs to treat opioid dependency after video chat visits to podiatrists using cameras to treat patients with diabetes... physicians across the country are providing care that, until now, was thought to only be feasible in person.”<sup>72</sup> Telemedicine will likely further ease the strain on the healthcare system by managing capacity and attendant costs. One study estimates by reducing 1% of emergency department visits through the use of telemedicine would yield an annual savings of more than \$100 million.<sup>73</sup>

Hospitals and other medical facilities, mindful of social distancing, have also turned to robots for “virtual rounding.” Robots fitted with tablets or videoconferencing tools can enter patient rooms to facilitate a conversation or check vital signs from monitors.<sup>74</sup> Remote patient monitoring programs that use data-collection tools to gather and transmit vital signs to clinicians

69 <https://www.healthaffairs.org/doi/10.1377/hblog20200729.267815/full/>

70 <https://www.statnews.com/2020/05/19/9-ways-Covid-19-forever-upend-health-care/>

71 Patient Perceptions of Telehealth Primary Care Video Visits. Powell RE, Henstenburg JM, Cooper G, Hollander JE, Rising KL. *Ann Fam Med*. 2017 May; 15(3):225-229.

72 <https://www.statnews.com/2020/05/19/9-ways-Covid-19-forever-upend-health-care/>

73 Kichloo, Asim, et al. “Telemedicine, the current Covid-19 pandemic and the future: a narrative review and perspectives moving forward in the USA.” *Family medicine and community health* 8.3 (2020). <https://fmch.bmj.com/content/8/3/e000530>

74 <https://healthtechmagazine.net/article/2020/08/what-does-healthcare-delivery0.4583> in



Photo by Pexels

have also gained traction. At Cleveland Clinic, for instance, recovering Covid-19 patients can enroll in a 14-day interactive care plan using Epic’s MyChart patient portal at home. They enter symptoms, temperature and oxygen saturation daily, and care providers are automatically notified if symptoms worsen.<sup>75</sup>

We’re likely to see new ways of incorporating telehealth and technology in the future. For instance, 98point6 operates as an “office-less” practice. They pair artificial intelligence, which handles patient administration and provides an initial diagnosis and treatment recommendation, with a messaging platform for patients and clinicians. The AI platform is responsible for 90% of the tasks associated with a traditional visit while the physician completes the final diagnosis and care plan. Even physical exams could be completed at a distance. Tyto Care offers a home exam kit that can be used to capture information that previously was only possible in an in-person exam. The Tyto device has a

digital camera and attachments that allow for remote examinations of ears and throat, heart and lung sounds, and body temperature.<sup>76</sup>

The health care system that emerges from the pandemic will clearly not be the same. The question is, how will it be transformed? David Blumenthal and colleagues from the Commonwealth Fund claim that health care post-pandemic will be shaped by three central criteria: the public’s use of non-pharmaceutical interventions such as facial coverings and physical distancing; the availability, efficacy, and public acceptance of one or more vaccines; and the availability and efficacy of anti-viral therapies. They further note, “While telehealth can partially compensate for the falloff in the use of services for vulnerable populations, like the elderly and those with chronic conditions, it will go only so far. It cannot replace hips or knees, do colonoscopies, or insert cardiac stents.” The authors posit three future scenarios, ranging from catastrophic to ideal, but

75 <https://hitinfrastructure.com/news/cleveland-clinic-epic-use-remote-patient-monitoring-for-Covid-19>

76 League, John. How Covid-19 is transforming telehealth —now and in the future. Advisory Board, May 7, 2020. <https://www.advisory.com/research/health-care-it-advisor/resources/2020/how-Covid-19-is-transforming-telehealth-now-and-in-the-future>

suggest that whatever the healthcare system emerges on the other side of the pandemic will be vastly different and hobbled in varying ways. They write: “Even under the dream scenario, the loss of safety net institutions and increased inequities will require some type of government response. For advocates of European-style publicly-managed health care systems with universal coverage, the catastrophic scenario may offer the prospect of a more equitable and potentially more efficient system emerging from the ashes. However, the price of failing to control the pandemic...will be huge.”<sup>77</sup>

The race to develop a vaccine, as well as to maintain medicines and compounds in the face of border closures and unstable supply chains, has generated numerous calls for reshoring pharmaceutical manufacturing. Janet Woodcock of the Food and Drug Administration pointed to Covid-19’s potential to “revitalize drug manufacturing in the US.” Researchers from the National Institute for Pharmaceutical Technology and Education say it’s of vital interest to establish national supply chains. To do so, however, requires redesigning at a systems level. “Reshoring the pharmaceutical supply with old know-how and outdated technologies that cause inherent unpredictability and adverse environmental impact will neither provide the security we seek nor will it be competitive and affordable. The challenge at hand is complex akin to redesigning systems,

including corporate and public research and development, manufacturing, regulatory, and education ones.”<sup>78</sup>

- The pandemic portends two intersecting mental health crises: one following infection, the other stemming from the generalized climate of hazard, uncertainty, and isolation.
- Insofar as it’s possible to predict a tide of adverse psychological outcomes in the near future, what can communities and policy makers do to reduce the shame of help seeking and bolster mental health?

Finally, the virus poses a number of long term mental health effects. The lasting psychological consequences of infection are only just coming into focus: lingering depression, brain fog, chronic fatigue and other symptoms have been shown to persist over time. No small number will have experienced the virus, and the disruptions surrounding it, as a form of trauma or lasting source of anxiety. These reactions heighten already distressing trends in mental health that see rates of depression, substance use and suicide on the rise. A recent survey from the Centers for Disease Control and Prevention found that roughly 40% of American adults struggle with mental-health issues stemming from the pandemic.<sup>79</sup> That number increases to 75% among those 18 to 24 years old. And at the same time, Latinx and Black Americans are consistently reporting higher levels of anxiety and depression than white Americans.<sup>80</sup>

77 <https://hbr.org/2020/07/3-scenarios-for-how-the-pandemic-could-change-u-s-health-care>

78 Gurchich, Vadim J., and Ajaz S. Hussain. “In and Beyond Covid-19: US Academic Pharmaceutical Science and Engineering Community Must Engage to Meet Critical National Needs.” *AAPS PharmSciTech* 21 (2020): 1-4. <https://link.springer.com/article/10.1208/s12249-020-01718-9>

79 <https://www.cdc.gov/mmwr/volumes/69/wr/mm6932a1.htm>

80 <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/five-ways-to-design-a-better-mental-health-future-for-a-stressed-out-workforce>

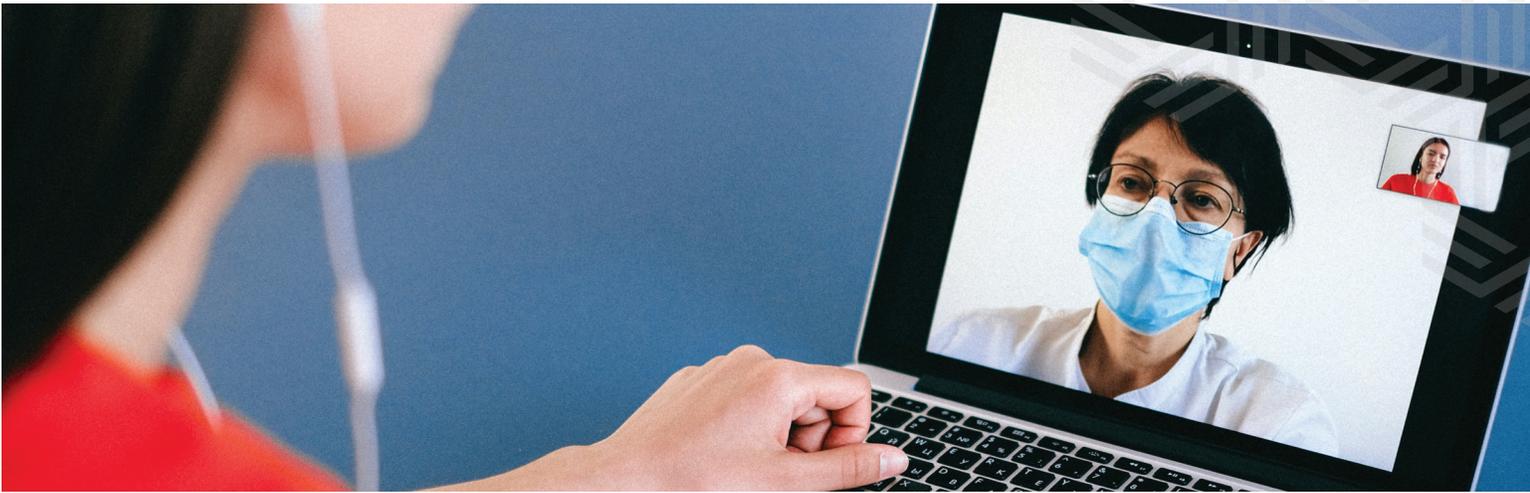


Photo by Anna Shvets on Pexels

Experts predict a rise in PTSD and Covid-related trauma, akin to what followed in the wake of disasters like Hurricane Katrina and 9-11. Researchers have found that in the aftermath of catastrophe, mental health distress and suicidality often do not peak until years after the initial event. One study found that depending on the speed of economic recovery, a 1% increase in the national unemployment rate could lead to as many as 154,000 additional deaths due to substance misuse or suicide. This is in addition to “deaths of despair”—as many as 75,000 more people will die from drug or alcohol misuse and suicide through 2029, according to new research released by the Well Being Trust and the Robert Graham Center for Policy Studies in Family Medicine and Primary care.<sup>81</sup>

However, as in other aspects of care, observers see a greater role for telehealth, blended therapies, apps, and digital platforms in addressing mental health and

offering more affordable and accessible services.<sup>82</sup> Moreover, recent relaxation of HIPAA rules around privacy means apps are poised to make a real dent in mental health care, making teletherapy more attractive to both consumers and providers, and stimulating further innovation in the field. A report in *The Lancet* affirms that there has been some evidence of short-term success, and that remote service delivery could have longer-term advantages. However, the authors note, “There are also challenges and drawbacks associated with the use of remote therapies, especially in people who might be in most need.”<sup>83</sup> The consensus seems to hold that the efficacy of apps is limited by the extent to which they’re incorporated into holistic treatment programs. “These apps help augment care or extend it,” John Torous, director of digital psychiatry at Beth Israel Deaconess Medical Center told *MIT Technology Review*. However, he said, they fall short when used as standalone tools or as single interventions.<sup>84</sup>

81 <https://wellbeingtrust.org/areas-of-focus/policy-and-advocacy/reports/projected-deaths-of-despair-during-Covid-19/>

82 Pfender, Emily. “Mental Health and Covid-19: Implications for the Future of Telehealth.” *Journal of patient experience* (2020): 2374373520948436.

83 Moreno, Carmen, et al. “How mental health care should change as a consequence of the Covid-19 pandemic.” *The Lancet Psychiatry* (2020). [https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(20\)30307-2/fulltext#seccestitle10](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)30307-2/fulltext#seccestitle10)

84 <https://www.technologyreview.com/2020/03/20/905184/coronavirus-online-therapy-mental-health-app-teletherapy/>

# Impact Cluster 5:

## Realigning Governance Structures

### Summary of Actionable Advice:

- Confront choices as to how to rebuild businesses and the infrastructure of civic life.
- Consider the implications of rising income inequality on both the public and private sectors.
- Monitor political shifts such as the rise of authoritarianism and pay extra attention to international strategic flexibility.
- Make deliberate choices about the use of rapidly-evolving surveillance technologies.
- Monitor public opinion related to the desirability of returning to the status quo.
- Plan for international resilience and spend time considering organizational and strategic risks brought about by international power dynamics.
- Plan for potential international supply-chain disruptions.

In the final passages of his opportune new book, Fareed Zakaria makes the case for agency in the face of the layered disasters of the present. “We have many futures in front of us,” he writes in *Ten Lessons for a Post-Pandemic World*. “We could turn inward and embrace nationalism and self-interest, or we could view this global pandemic as a spur to global cooperation and action.” He is not envisioning a revolution so much as laying out an ambitious agenda for dispensing with the normal. “This ugly pandemic has created the opportunity for change and reform. It has opened up a path to a new world.”<sup>85</sup>

Zakaria takes his place on what could be deemed the quietly optimistic side of post-pandemic hypothesizing which reads Covid-19 as an opportunity to address a long and interconnected string of modern ills: climate change; racial and economic inequities; under-funded public health systems; tenuous supply chains; the cruelties of global capitalism; outmoded infrastructure; and the privileging of corporations and markets above the virtues of communities and countries.<sup>86 87</sup>

<sup>85</sup> Zakaria, Fareed. *Ten Lessons For a Post-Pandemic World*. New York: Norton, 2020.

<sup>86</sup> Appadurai, Arjun. Coronavirus Won't Kill Globalization. But It Will Look Different After the Pandemic. *Financial Times*, May 19, 2020. <https://time.com/5838751/globalization-coronavirus/>

<sup>87</sup> <https://medium.com/institute-for-the-future/post-pandemic-transformation-building-a-mutualist-future-c1193bc77759>

He is hardly alone in hailing the virus as a moment to improve the status quo. The editorial board of the *Financial Times*—usually a consistent cheerleader for capitalism—wrote in April 2020 that the virus had laid bare existing inequalities and called for governments to produce “a social contract that benefits everyone.” The neoliberal agenda of decades past must yield to a new era of “radical reforms.” They write, “Redistribution will be on the agenda.”<sup>88</sup>

Economist Mariana Mazzucato of University College London has championed redistributive policies, and believes the crisis will serve as a great awakening. She urges governments to take advantage of the world’s upheaval to steer the economy, and capitalism along with it, in a better direction.<sup>89 90</sup> The pandemic provides an opportunity to rethink how value is created and how markets can lead to mission-oriented investments and innovations.<sup>91</sup> To the growing calls for universal basic income, she counters that countries should introduce a “citizen’s dividend” that shares the proceeds of wealth co-created by the public and private sector. Instead of pursuing “socialized risks and privatized rewards,”

this redistributive approach would benefit the larger society “whether that wealth comes from natural resources that are part of the common good or from a process, such as public investments in medicines or digital technologies, that has involved a collective effort.”<sup>92</sup>

Mazzucato’s contributions are among a spate of radical visions. The pandemic has been a time for Big Ideas. Klaus Schwab of the World Economic Forum has dubbed Covid-19 as an occasion for a “Great Reset” and a turn toward “stakeholder capitalism.” McKinsey has called on business leaders to reimagine their roles in a way that emphasizes resilience and reform.<sup>93</sup> And Indian author and activist Arundhati Roy has called the virus a “portal.” Writing in the *Financial Times*, she says, “Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is ...a gateway between one world and the next.”<sup>94</sup>

And yet the features of the next world are blurred and uncertain. Do the roads ahead lead to global mutualism, cooperation, and the reassertion of nation-states over markets?<sup>95</sup>

---

88 Virus lays bare the frailty of the social contract. The Financial Times, April 3, 2020. <https://www.ft.com/content/7eff769a-74dd-11ea-95fe-fcd274e920ca>

89 <https://www.nytimes.com/2020/10/08/opinion/international-world/capitalism-covid-19-vaccine.html>

90 <https://www.foreignaffairs.com/articles/united-states/2020-10-02/capitalism-after-covid-19-pandemic>

91 Mazzucato, Mariana. “From market fixing to market-creating: a new framework for innovation policy.” *Industry and Innovation* 23.2 (2016): 140-156. <https://www.tandfonline.com/doi/full/10.1080/13662716.2016.1146124>

92 <https://www.foreignaffairs.com/articles/united-states/2020-10-02/capitalism-after-covid-19-pandemic>

93 <https://www.mckinsey.com/featured-insights/future-of-work/from-surviving-to-thriving-reimagining-the-post-Covid-19-return#>

94 Roy, Arundhati. The pandemic is a portal. *Financial Times*, April 3, 2020. <https://www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca>

95 <https://medium.com/institute-for-the-future/post-pandemic-transformation-building-a-mutualist-future-c1193bc77759>

Henry Kissinger, who says the virus “set the world on fire,” maintains countries will have to act in a coordinated way to manage decades of political and economic upheaval.<sup>96</sup> Conversely, do the roads ahead deliver us to nationalism, despotism, to a great closing in, to a period marked by violence and fear?

Some hold that the coronavirus has been a boon to strongmen. Melinda Haring and Doug Klain of the Atlantic Council say authoritarian leaders are always searching for scapegoats to justify their repressive regimes. The more they can rile up the fears of their populace, the more they can tighten their grip. “To them, the coronavirus pandemic is a bonanza—the liberal democracies that would typically call them out for their violence and repression are distracted with the necessities of stopping the virus in their home countries.”

By way of evidence, Haring and Klain point to how in March of 2020 Putin claimed power for an additional 16 years, while Jordan banned the printing of newspapers, Azerbaijan shut down the offices of the main opposition group, and Egypt initially made reporting information on the virus a crime. In Hungary, Viktor Orban (falsely) linked the virus to migrants and used that claim to enact asylum bans. Haring and Klain assert, “If these strongmen go unchecked, the Covid crisis may end with all of us emerging to find a world in which authoritarianism triumphs. More political prisoners, more presidents-for-life, and more despotism.”<sup>97</sup> Meanwhile, in China, Thailand, Cambodia, Turkey, Venezuela and elsewhere, governments are cracking down on individuals who criticize national responses to the virus, expelling foreign journalists and detaining health care workers and members of opposition groups. Looking

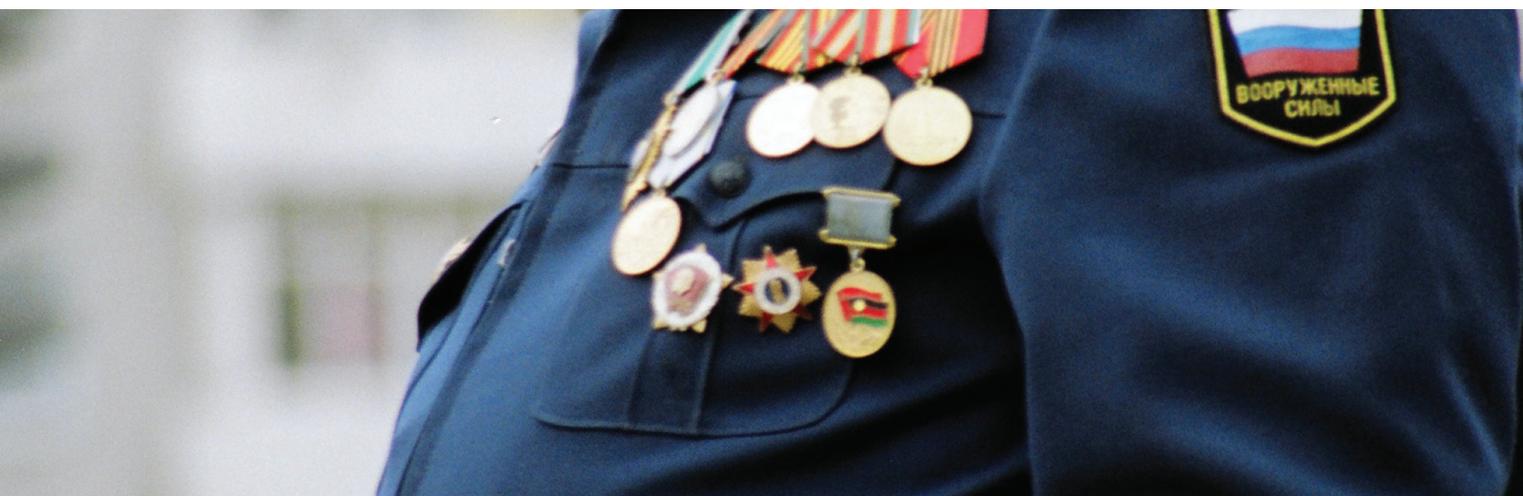


Photo by Carmen Attal on Pexels

96 Kissinger, Henry. The Coronavirus Pandemic Will Forever Alter the World Order. Wall Street Journal, April 3, 2020. <https://www.wsj.com/articles/the-coronavirus-pandemic-will-forever-alter-the-world-order-11585953005>

97 Haring, Melinda and Doug Klain. Why autocrats love coronavirus. The National Interest, March 22, 2020. <https://nationalinterest.org/blog/buzz/why-autocrats-love-coronavirus-135947>

to these trends, Kenneth Roth, director of Human Rights Watch warns, “autocratic governments’ dangerous expansion of power may be one of the pandemic’s most enduring legacies.”<sup>98</sup>

James Lamond of the Center for American Progress says authoritarian regimes have responded to the Covid crisis by consolidating power at home, seeking geopolitical advantage in the context of global disruption, and by weakening democracies from within by deploying disinformation across borders using both state media and social media platforms. If these trends continue, he says, world powers will move toward greater geopolitical competition.<sup>99</sup>

Perhaps, though, no fate is so terrible as the persistence of the status quo. “Nothing could be worse than a return to normality,” states Roy. In the words of Institute for the Future executive director Marina Gorbis, the current process of breakdown, however painful, is both necessary and overdue. The ways in which the virus has toppled the “mirage of might and prosperity” indicate that “normal wasn’t normal...normal wasn’t good.”<sup>100 101</sup>

The American public appears largely split on whether they think the outbreak will result in enhanced global cooperation, according to recent data from Pew.<sup>102</sup> Adults under 30 appear to be the least sanguine—46% of Americans ages 18 to 29 think the status quo will be maintained, compared with only about a third of 30- to 49-year-olds and those 50 and older. But it’s helpful here to recall public attitudes in the lead up to the reforms of the 1930s. In the midst of the Great Depression and the Dust Bowl, Americans initially balked at the idea of government expenditures for general welfare. However, such sentiments did not deter FDR from blazing ahead with the New Deal. Within a decade, ideas that had been controversial—“heedless self-interest is...bad economics” and “freedom from want” should shape policy goals—became commonplace.<sup>103</sup>

Regardless of what shape the emerging world takes, we are likely to see government, and the private sector, keeping a closer watch on citizen behaviors. As Covid-19 fast-forwards the fourth industrial revolution, it will become increasingly difficult to live off-camera. Surveillance will be commonplace, if ambivalently

---

98 Roth, Kenneth. How authoritarians are exploiting the Covid-19 crisis to grab power. *New York Review of Books*, March 31, 2020. <https://www.nybooks.com/daily/2020/03/31/how-authoritarians-are-exploiting-the-Covid-19-crisis-to-grab-power/>

99 <https://www.americanprogress.org/issues/security/news/2020/04/06/482715/authoritarian-regimes-seek-take-advantage-coronavirus-pandemic/>

100 Coronavirus pandemic: When will life go back to normal? Hopefully never, says Silicon Valley futurist. *ABC News*, April 7, 2020. <https://abc7news.com/life-after-coronavirus-when-will-pandemic-end-shelter-in-place-lift-we-go-back-to-work/6084766/>

101 <https://medium.com/institute-for-the-future/post-pandemic-transformation-building-a-mutualist-future-c1193bc77759>

102 <https://www.pewresearch.org/fact-tank/2020/06/02/how-americans-envision-a-post-pandemic-world-order/>

103 Carlin, Wendy. Covid-19 is resetting the way we talk about the economy. *Financial Times*, April 22, 2020. <https://www.ft.com/content/cb827cea-849d-11ea-b6e9-a94cffd1d9bf>



Photo by Karolina Grabowska on Pexels

received. As the virus continues to surge, technologists have produced a flood of new tracking apps with varying degrees of efficacy, transparency, and data security. “Some are lightweight and temporary, while others are pervasive and invasive,” write reporters for *MIT Technology Review* who have developed a Covid Tracing Tracker database to make sense of how these technologies will interact with policy and privacy down the line.<sup>104</sup> “China’s system, for example, sucks up data including citizens’ identity, location, and even online payment history so that local police can watch for those who break quarantine rules.”

These new systems and devices will likely continue to evolve to suit other ends and become an ingrained part of post-Covid life, pressing individuals to make tradeoffs between (perceived/real) public health security, individual freedom, and privacy. Andreas Krieg, a security specialist at King’s College London, says these trends portend the creep of state control into civil society. Authoritarian regimes will cite the necessity

of public health measures and thus exploit the pandemic as a pretext for intervening into private life. He writes, “Digital technology makes it possible to create subtle police states whereby state control is not as obvious as it might have been as citizens might voluntarily offer private data in hope the state can provide security.”<sup>105</sup>

## Preparing for shifts in global order

Commentators of all leanings emphasize that the virus will continue to unseat the US as the world political, economic, and cultural center. The liberal international order premised on a US-led framework for cooperation and forged in the idealism of the post-World War II period was already crumbling; to some, its basic premises were dismantled by the shift to neoliberalism roughly three decades ago. As Zakaria puts it, “The pandemic has accelerated America’s selfish turn—its abandonment of its role as leader of the free world and provider of public goods within the multilateral system.”

<sup>104</sup> <https://www.technologyreview.com/2020/05/07/1000961/launching-mittr-covid-tracing-tracker/>

<sup>105</sup> <https://www.aljazeera.com/news/2020/3/26/our-lives-after-the-coronavirus-pandemic>

In *Foreign Affairs*, Kevin Rudd, the former Prime Minister of Australia, laments that the America of the Berlin airlift has become the land of the virus-besieged aircraft carrier USS Theodore Roosevelt.<sup>106</sup>

It's impossible to divorce America's flailing future from its current leadership. The self-absorption of the Trump administration has been broadly read as an abdication of authority, both moral and political, and one that the country is not likely to recover from in the near future. The Trump White House sends the signal that "Washington has given up its aspirations for global leadership and abandoned any notion of moral purpose on the international stage," argues Eliot Cohen of the School of Advanced International Studies.<sup>107</sup> Cohen sees this renunciation of leadership as threatening global cooperation; as the US devolves into self-interest, it could bring about "a world of radical self-help, in which any and all tools of power would be legitimated by that most powerful of reasons—necessity." The pandemic has brought out nationalism across the globe—in expected places like Jair Bolsonaro's Brazil and Narendra Modi's India, but the creep is evident in Europe as well.

Looking ahead, some see the rise of a multilateral world wherein new frameworks for global cooperation

provide the opportunity to address large-scale problems, like climate change and food security. Europe may emerge from the crisis stronger and more united. Others focus on the escalating tensions between the US and China. Ian Bremmer, founder of the Eurasia Group, suggests that the virus will plunge the world into a new cold war between the two powers.<sup>108</sup>

Most don't take such a portentous view of China's geopolitical expansion, but all the same underscore its recent rise and rebound post-pandemic. China's lower caseload has meant a stronger economic outlook, with consumers returning, and exports ticking up again, including a surge in exports of medical and personal protective equipment. China's trade surplus with the US is continuing to grow. Jim McCormick of the investment bank NatWest Markets asserts that US-China tensions will grow no matter who's in the White House. "Beijing's successful virus management—and consequent economic resilience—will only raise the stakes in the years to come."<sup>109</sup>

Others still maintain the future will be a multipolar landscape. Neither China nor the United States will emerge from Covid-19 as a "winner" in a way that would dramatically shift the balance of world power in its favor; indeed both will likely find their reputations and soft power damaged by the way they

---

106 Rudd, Kevin. The Coming Post-Covid Anarchy. *Foreign Affairs*, May 6, 2020. <https://www.foreignaffairs.com/articles/united-states/2020-05-06/coming-post-covid-anarchy>

107 Cohen, Eliot A. "The end of American power." *Foreign Affairs*, October 27, 2020. <https://www.foreignaffairs.com/articles/united-states/2020-10-27/end-american-power>

108 <https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-covid-19.htm>

109 <https://www.ft.com/content/696d0406-181c-4972-a158-06b610f50dbd>

handled the virus. Rather the United States, China, Russia, and the European Union will represent different poles, possibly aligned around regime type, wherein authoritarian leanings jockey against democracy, the free press, and open markets.<sup>110</sup>

At the same time, the future of globalization itself appears to hang in question. Covid has been portrayed at times as a symbol of globalism: the virus that travels at viral speed, revealing the extent of our entangled world. It has prompted a wave of obituaries to our connected international systems. “Globalization is headed to the ICU,” declared a *Foreign Policy* editorial,<sup>111</sup> while the Economist asked whether Covid had killed globalization.<sup>112</sup> Ian Bremmer posits that the world is going to shift away from

globalized just-in-time supply chains and that “my nation first” politics will pressure companies to localize business operations.<sup>113</sup>

But others argue these claims are premature. Despite the academic and media pronouncements to the contrary, there is no backtracking on globalization argues New York University anthropologist Arjun Appadurai. Pandemic or not, “it’s clear that no significant global player is changing its game plan,” he writes. “Though many nation-states are preoccupied with tightening their borders, maximizing their medical resources and prioritizing the health of their citizens above all else, no country has taken any serious action to undo or reverse their global alliances, interests and strategies.”<sup>114</sup>



Photo by Mat Reding on Pexels

110 World order after Covid-19. Center for Strategic and International Studies, May 28, 2020. <https://www.csis.org/analysis/world-order-after-Covid-19>

111 Walt, Stephen. The Realist’s Guide to the Coronavirus Outbreak. *Foreign Policy*, March 9, 2020. <https://foreignpolicy.com/2020/03/09/coronavirus-economy-globalization-virus-icu-realism/>

112 Has Covid-19 killed globalization? *The Economist*, May 14, 2020. <https://www.economist.com/leaders/2020/05/14/has-Covid-19-killed-globalisation>

113 <https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-Covid-19.htm>

114 Appadurai, Arjun. Coronavirus Won’t Kill Globalization. But It Will Look Different After the Pandemic. *TIME*, May 19, 2020 <https://time.com/5838751/globalization-coronavirus/>

Steve Altman, executive director of New York University's Stern Center for the Globalization of Education & Management, says Covid will bend but not break globalization; both globalization and anti-globalization pressures will remain enduring features in the future. While he concedes a major rollback, citing dramatic reductions in airline passengers, foreign

direct investment, and merchandise trade, he argues that this data does not “signal a fundamental collapse of international market integration” or “imply a retreat to a world of disconnected national markets.” Rather, he asserts, “Most of the run-up in trade integration since the end of World War II should remain intact.”<sup>115</sup>

---

115 <https://hbr.org/2020/05/will-Covid-19-have-a-lasting-impact-on-globalization>

# Impact Cluster 6:

## Addressing Climate and Consumption Patterns

### Summary of Actionable Advice:

- Recognize that the virus, of zoonotic origin, is a result of our interactions with the natural world—in this sense, it is part of a larger dynamic playing out around human interactions with the natural world.
- Rethink communication strategies in this space, as with discussions of public health measures around masks and containment, issues ultimately rooted in climatological and environmental chemistry have become ideological even as the stakes grow ever more dire.
- Recognize that a longer-term perspective on organizational interests will be required.

If one can find a silver lining to a public health and economic catastrophe, it might be the pause that has settled over the **anthropocene**. Lockdowns and shelter mandates as well as reduced trade and transportation have literally reduced the

size of human carbon footprint. Waterways are cleaner. Wildlife is showing up in human settlements. Cityscapes and marine habitats are less noisy. Even seismic activity appears to have been briefly subdued. Moreover, skies are notably clearer. Scientists have observed a significant decrease in the concentration of nitrogen dioxide, which enters the atmosphere through emissions from cars, trucks, buses, and power plants. According to an analysis by Stanford earth scientist Marshall Burke, a pandemic-related reduction in particulate matter in the atmosphere—the deadliest form of air pollution—likely saved the lives of 4,000 young children and 73,000 elderly adults in China over two months this year.<sup>116</sup>

To some, the virus, a zoonotic pandemic, signals a warning flare, a wake-up call issued from the earth itself to a species seemingly committed to deforestation, haphazard urbanization, and the ongoing warming of the planet. Sociologist Steve Fuller has described it as “Nature’s brute audit on humanity’s sustainability.”<sup>117</sup> *The Nation*

116 Burke, Marshall. Covid-19 reduces economic activity, which reduces pollution, which saves lives. Global Food, Environment and Economic Dynamics, March 8, 2020. <http://www.g-feed.com/2020/03/Covid-19-reduces-economic-activity.html?>

117 Fuller, Steve. “A post-truth proactionary look at the pandemic.” Postdigital Science and Education (2020): 1-5. <https://link.springer.com/article/10.1007/s42438-020-00124-5>



Photo by Kelly Lacy on Pexels

puts it thusly: “This coronavirus may not, in retrospect, prove to be the tipping point that upends human civilization as we know it, but it should serve as a warning that we will experience ever more such events in the future as the world heats up.”<sup>118</sup> Some optimism surrounds this perspective, however. If the dire consequences of our most brutish habits are made plain, we can finally heed the call to concerted global action.

But will we? The 2008 financial crisis had a similar effect in terms of emissions. Data from the Global Carbon Project show that carbon dioxide emissions fell 1.4%—only to roar back by 2010, when they grew by more than 5%. In other words, when people went back to work, “emissions returned with a bang.”<sup>119</sup> To put these changes in context, the International Renewable Energy Agency predicts that overall emissions will be down 6-8% in 2020. However, in order

to keep global warming below 1.5C (above pre-industrial levels), global emissions must fall by at least 7.6% every year to 2030. The sacrifices and economic fallout of 2020 underscore how alarmingly remote this goal actually is.<sup>120</sup>

Furthermore, even though the coronavirus is, in some respects, an emissary of the climate crisis, critics worry that it is being seized as an opportunity for deregulation. Industries that have been hard hit by the pandemic, such as oil, gas and extractives, may emerge “bolder than ever,” pursuing tax breaks and taking advantage of rollbacks to implement new environmentally damaging projects.<sup>121</sup>

Others point out that changes benefitting the planet may prove detrimental to human lives and livelihoods in the long run. Noah Diffenbaugh and colleagues of the Stanford Woods Institute for the Environment

118 Klare, Michael, T. Rethinking Our Relationship to the Natural World After Covid-19. *The Nation*, April 3, 2020. <https://www.thenation.com/article/environment/coronavirus-nature-humans/>

119 Jackson, Rob, et al. Covid-19 Could Permanently Transform Transportation. *Scientific American*, May 19, 2020. <https://blogs.scientificamerican.com/observations/covid-19-could-permanently-transform-transportation/>

120 UN Environment Programme. Emissions Gap Report 2019. <https://www.unenvironment.org/interactive/emissions-gap-report/2019/>

121 Gardiner, Beth. Why Covid-19 will end up harming the environment. *National Geographic*, June 18, 2020. <https://www.nationalgeographic.com/science/2020/06/why-Covid-19-will-end-up-harming-the-environment/#close>

suggest that the environmental impacts of Covid-19 will follow two distinct paths: there is positive disruption to ecosystems in terms of energy, emissions, climate and air quality, but conversely there is a disastrous cascade of effects in terms of poverty, globalization, food and biodiversity. Writing in *Nature Reviews*, they argue: “By amplifying underlying inequities in the distribution of resources, the socioeconomic disruption caused by the response to Covid-19 will almost certainly have negative long-term impacts on human health and well-being. In particular, the economic shock is likely to increase the extent and severity of global poverty, both from direct impacts on health, employment and incomes and through disruptions of supply chains and global trade.”

Most concerning to the authors are the long-term environmental consequences of poverty. For one, less wealth means fewer resources for climate crisis mitigation and adaptation. The authors also anticipate that deepening poverty will result in more deforestation, land degradation, overfishing and loosening of existing environmental policies as a larger share of the population is pushed towards subsistence. These effects are already apparent in South African parks, where the collapse of eco-tourism has been accompanied by a rapid increase in illegal poaching, and in the soaring increase in deforestation in Brazil, where deforested

areas grew by ~35% in the first five months of 2020, compared to the same period in 2019.<sup>122</sup>

At the same time, diseases are moving from animals to humans at a faster rate than before. “This pandemic is the consequence of our persistent and excessive intrusion in nature and the vast illegal wildlife trade, and in particular, the wildlife markets, the wet markets, of south Asia and bush meat markets of Africa,” Thomas Lovejoy, the “godfather of biodiversity” and environmental scientist at George Mason University, told the *Guardian*. “It was just a matter of time before something like this was going to happen.”<sup>123</sup>

Zoonosis cannot be eliminated but its threat can be contained. A large portion, if not the majority of zoonotic disease outbreaks can be linked to modern patterns in land use, agriculture and hunting. New policies and incentives that lessen human-wildlife contact would be a boon to ecosystems and public health.<sup>124</sup>

Shifting consumer habits would do much to reduce our vulnerability. Globally, we’re eating far more meat than ever before—some 80 billion land animals are slaughtered for meat each year—and most livestock comes from factory farms. These massive operations are essentially petri dishes, as evidenced by the 2009 H1N1 swine flu

---

122 Duffenbaugh, Noah S., et al. “The Covid-19 lockdowns: a window into the Earth System.” *Nature Reviews Earth & Environment* (2020): 1-12. <https://www.nature.com/articles/s43017-020-0079-1>

123 <https://www.theguardian.com/world/2020/apr/25/ourselves-scientist-says-human-intrusion-nature-pandemic-aoe>

124 <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/not-the-last-pandemic-investing-now-to-reimagine-public-health-systems>

outbreak, which originated in North American pig farms, and the many strains of avian flu that have been traced to poultry factory farms in East Asia. As the biologist Robert Wallace noted: “factory farms are the best way to select the most dangerous pathogens possible.”<sup>125</sup>

Accordingly, some have called for building a better food system post-Covid. New Jersey Senator Cory Booker has introduced legislation to end factory farms, phasing them out by 2040.<sup>126</sup> Michael Greger, author of *Bird Flu: A Virus of Our Own Hatching*, told *Vox* it’s possible to build a better food system post-coronavirus. “The de-intensification of the livestock industry would go a long way toward reducing pandemic risk,” Greger said. “I mean decreasing long-distance live animal transport, moving toward a carcass-only trade, and having smaller and less-crowded farms. Basically, the animals could use a little social distancing, too.”<sup>127</sup> At the same time, supply chain issues alongside outbreaks

at meat packing plants have increased the demand for plant-based meat, milk, and egg products.

Beyond food systems, some argue that the pandemic will ultimately help to replace the dominant capitalist logic with an ecological imperative. After all, for better or worse, government has never been bigger: the virus presents a huge opportunity to make a transformational leap into a different future—one that reimagines green spaces, agriculture, transportation, infrastructure, and value creation through a lens of sustainability.

- The pandemic is not only an unprecedented disruption to everyday life, it is also an opportunity for a bold and radical reset—of priorities, global systems, and even existential meaning.
- Some policymakers, such as in the EU and in corners of the US, view the post-pandemic period as an occasion to accelerate a shift to a green economy,



Photo by Sarai Zuno on Pexels

125 <https://www.vox.com/future-perfect/2020/4/22/21228158/coronavirus-pandemic-risk-factory-farming-meat>

126 <https://www.booker.senate.gov/news/press/booker-unveils-bill-to-reform-farm-system>

127 <https://www.vox.com/future-perfect/2020/4/22/21228158/coronavirus-pandemic-risk-factory-farming-meat>

which they claim will lead to more jobs and more growth, as well as a more viable planetary future.

- Nonetheless, shifting away from petro-capitalism is a tremendous feat. What sorts of incentives might policy makers devise to encourage this momentum and what are the best ways to communicate necessity alongside future benefit?

Hopeful observers see the post-pandemic world as one shaped by a green recovery and new approaches to innovation and wealth creation. Mariana Mazzucato and Martha McPherson of University College London say, “This pandemic, and the recovery we need, give us an opportunity to understand and explore how to do capitalism differently, towards a climate-resilient, long-term, and sustainable economy.” At present, much of the economy is in the hands of the private sector.<sup>128</sup> A new model might place more in the hands of investors, or promote what Klaus Schwab of the World Economic Forum has dubbed “stakeholder capitalism.” In Schwab’s vision, it is crucial to move away from the precept “the business of business is business,” and toward a model that designates corporations as “trustees of society” tasked with responding to broad societal and environmental challenges.<sup>129</sup> He maintains, “The same economic system

that created so much prosperity in the golden age of American capitalism in the 1950s and 1960s is now creating inequality and climate change. And the same political system that enabled our global progress and democracy after World War II now contributes to societal discord and discontent.” Schwab believes a better, more “virtuous” and more evenly distributed economic system is possible.<sup>130</sup>

Even the International Energy Agency, historically not a big champion of the zero carbon economy, has been making calls for a “sustainable recovery” based on a low carbon future as a way to boost economic growth, create jobs and build more resilient and cleaner energy systems.<sup>131</sup> A recent IEA analysis, conducted in collaboration with the International Monetary Fund, outlines more than 30 recommendations, including further investment in electricity grids and more support for wind and solar energy. The transformation outlined in the report, which spans 2021-2023, would create 9 million jobs a year and help cut annual greenhouse gas emissions by 4.5 billion tons. “Even a government who is not interested in climate change...should still stick to these energy policies because they will create growth,” Fatih Birol, IEA head told the *Financial Times*. With measures in place, he said, “we can be sure that 2019 was the peak in emissions.”<sup>132</sup>

---

128 <https://www.ft.com/content/860c2c82-183a-4d65-978e-454bf3ce8c0d>

129 Schwab, Klaus. What kind of capitalism do we want? TIME Ideas. December 19, 2019. <https://time.com/5742066/klaus-schwab-stakeholder-capitalism-davos/>

130 Schwab, Klaus. A Better Economy Is Possible. But We Need to Reimagine Capitalism to Do It. Time. Oct 22, 2020. [strategies.https://time.com/collection/great-reset/5900748/klaus-schwab-capitalism/](https://time.com/collection/great-reset/5900748/klaus-schwab-capitalism/)

131 International Energy Agency (2020), Sustainable Recovery, IEA, Paris <https://www.iea.org/reports/sustainable-recovery>

132 <https://www.ft.com/content/4c891779-dcd5-40c6-83ce-465bad300d8b>



Photo by Mike on Pexels

Joseph Stieglitz has echoed the assumption that low-carbon or carbon-neutral recovery packages would offer higher rates of return, more short-term jobs, and better long-term cost savings than traditional fiscal stimulus plans. For example, building clean-energy infrastructure would create twice as many jobs per dollar as fossil-fuel investments.<sup>133</sup>

The European Union is already in the process of implementing a green Covid-19 recovery agenda, which aims to restore biodiversity and accelerate the shift to a zero-carbon economy by 2050.<sup>134</sup> In December 2019, the EU outlined a plan to spend \$1.17 trillion on a Green Deal aimed at eliminating the bloc's carbon footprint and remaking the economy around new low carbon industries, including everything from retrofitting buildings to scaling up infrastructure for electric vehicles and

hydrogen energy storage. The pandemic led to calls to postpone the goals, but ultimately the EU decided to accelerate the mission. As the world's second largest economy, these ambitions will ripple across the globe to lasting effect, potentially "igniting the global race to develop a clean-energy economy."<sup>135</sup>

Even the language of fighting the virus and addressing climate change has come to intersect. Some have likened the idea of flattening the curve of infections so health systems don't collapse to the need to bring down the rate of greenhouse gas emissions that are driving global warming. As Svenja Schulze, the German environmental minister told the **AP** "Unlike in the fight against the coronavirus, we already know the vaccines for the climate crisis."<sup>136</sup>

---

133 Hoffmann, André. The post-pandemic planet: Will our relationship with the natural world really change? World Economic Forum, June 9, 2020. <https://www.weforum.org/agenda/2020/06/planet-pandemic-environment-nature-coronavirus-Covid19/>

134 [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

135 Worland, Justin. Europe Has Big Plans for a Green New Deal. Poland's Coal Country Isn't So Sure. TIME, October 22, 2020. <https://time.com/collection/great-reset/5900740/europe-green-new-deal-poland/>

136 <https://apnews.com/article/2272fa23e1a514be5ab7043bdc589959>

# Conclusion

Some have described the coronavirus as a post-truth pandemic, noting that from the start politically-inflected rifts in science (and one might dare add reason) thwarted efforts to mobilize an effective global response. In striking and distressing ways public figures appear to be wrestling with facts, perhaps even with the nature of empiricism. Public faith in science is losing out in places to punditry and extremism, of both the religious and political varieties. These days, most take for granted that science is a politically rife discipline. But that need not be the case. It's helpful, perhaps, to recall the global effort to eliminate CFCs

in 1989 after they were observed as causing ozone depletion. The adoption of the Montreal Protocol was, by and large, not cast as a tussle of irreconcilable interests, but rather as a necessity in the name of the collective good and future of the planet. To chart any kind of sustainable future course, one that attends to the public health, economic, psychological and social consequences of the pandemic, therefore requires first and foremost, an exercise in consensus building. To design a livable future, we need to agree on the structure of reality and the facts that describe it. 

---

**Rethinkery Foresight** is a strategic hub for organizations working to navigate disruptive change. For more information on how we can help your organization to strategically rethink its assumptions in light of change, please contact us at [info@rethinkery.com](mailto:info@rethinkery.com)

---