

The impact of nationalism and leadership on scientific faith and the effectiveness of the pandemic playbook in the United States

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

As of May 2021, the COVID-19 virus has resulted in over 3.4 million deaths worldwide (WHO, 2021). While the effects of the global pandemic continue to escalate in some countries, others have successfully contained the virus. In the United States, the demonstrated reality of response success (or lack thereof) runs counter to the results of comprehensive models that sought to estimate international pandemic preparedness, which indicates that the significance of key sociological factors may have been underestimated as factors of pandemic response.

Through comparative case study of three countries with a successful pandemic response, this paper seeks to identify adjustments to the standard pandemic playbook to support successful current and future pandemic responses in the United States. These insights will also be valuable for refining the metrics of global health and ultimately minimizing the death tolls of current and future outbreaks.

Sociology of Scientific Knowledge

The sociology of scientific knowledge (SSK) is a relatively new field of study within the larger field of the sociology of knowledge. While the latter sought to determine the extent to which social factors affect scientific knowledge, the former begins with the premise that all knowledge is social, thus the division of “social versus cognitive, or natural, factors” is false (Shapin, 1995). In other words, the line drawn between the natural and social worlds in ethical and scholarly frameworks does not exist. Critics such as Sun suggest that this premise, known as the Strong Programme, indicates that objective truth cannot exist under this framework because it postulates that all knowledge is the result of social influences and factors (2007). Scholarly branches are still being formed to account for this theme of relativism and its relationship to concepts such as mathematics. However, the relativism present in SSK and the Strong

Programme make this framework preferable for analyzing issues of belief and its interaction with widely accepted knowledge, which can have a significant effect on public health.

Sociology of Scientific Knowledge and COVID-19

The inherent relativism in the sociology of scientific knowledge theory is often criticized, but this aspect makes it a perfect framework for analyzing the role of societal attitudes in issues of public health. In this realm, beliefs surrounding scientific knowledge have led to perception of widely-accepted knowledge itself as a belief, rather than a series of supported and tested theories, which can and has had detrimental effects on public health. This paper specifically approaches the interplay of collectivism, government, and science in combatting a pandemic by using four countries with a similar level of technological advancement (New Zealand, the United States, Taiwan, and South Korea) as case studies. Because the selected countries of interest have a similarly high standard of living and have fully progressed to the digital era, factors besides access to technology must have an impact on the success of their response to COVID-19. I intend to demonstrate that collectivism and nationalism are important driving factors in shaping scientific “beliefs” and faith in science as a whole. Using the previously mentioned countries as case studies, I will then present recommendations for infection control design and policymaking that are more in line with American social norms, potentially boosting their success and effectiveness.

Past efforts to quantify international preparedness for a global pandemic further demonstrate the need to incorporate issues of society and belief into metric of global health. For example, in several key cases, the 2019 Global Health Security Index (GHSI), did not accurately reflected the containment and response successes of the COVID-19 pandemic. Specifically, the United States, which had almost 33 million confirmed cases by the World Health Organization

(2021), has failed to successfully mitigate the spread of the virus despite the country's projected pandemic preparedness by the GHSI. Figure 1 ([World map of COVID-19 cases], 2021), a projection of confirmed COVID-19 cases by the World Health Organization in March of 2021, shows some interesting visual deviations from Figure 2 ([World map of Global Health Security Index ranking], 2019), a projection of the GHSI scores for pandemic preparedness.



Figure 1



Figure 2



Figure 3

This indicates that, despite the comprehensive nature of the GHSI, the significance of social factors may be undercounted in this and similar studies as opposed to factors such as wealth, although the specific methodologies of such studies are beyond the scope of this paper. To

demonstrate a possible overreliance on certain factors, Figure 3 ([World map of 2019 GDP], 2019) is a projection of international GDP in 2019, the same year in which the GHSI was calculated. Visual inspection of Figure 2 ([World map of Global Health Security Index ranking], 2019) shows that countries such as the United States and Canada are rated as being the most prepared for a global pandemic by the GHSI, and these countries are correspondingly among the

most economically prosperous in the world based on their GDP. Meanwhile, the comparatively lower GDP of countries such as those in Africa appears to be broadly reflected in the GHSI pandemic preparedness scores, which does not accurately correspond to the confirmed COVID-19 cases shown in Figure 1 ([World map of COVID-19 cases], 2021).

While it should be emphasized that the GHSI does not rely purely on GDP, nor did the researchers conclude that any country was optimally prepared for a pandemic (GHSI, 2019), the ability to draw these clear correspondences indicate that the significance of certain factors in determining pandemic success may have been underestimated. To provide a potential catalyst for the massive deviation in the projections and reality of the American pandemic response. using the language of the Strong Programme, much of the same information on pandemic mitigation is available internationally, but different social factors and attitudes have affected its implementation, dispersal, and social acceptance in a way that quantitative factors such as wealth cannot fully account for.

The Pandemic Playbook

COVID-19 is far from the first contemporary public health crisis, and the methods for containing large-scale outbreaks have been well established. Parker describes the methods from the “classic playbook of pandemic response” (2021) as follows: “stop the influx of the virus from arriving travelers; procure and deploy PPE to protect essential workers; test, contact trace, and isolate those who test positive; and, most of all, mobilize the public in affected regions (or nationwide if necessary) to physically distance for long enough to break the chain of transmission” (2021). The effective implementation of these steps relies on a clear trend that has emerged in many of the most successful countries in terms of pandemic response: decisive, effective, and informed leadership (Forman et al., 2020). Internationally, this has been

demonstrated through unified messaging, the authorization of agencies with specific powers to combat the virus, deferral to experts in the healthcare and scientific fields, and national efforts to combat misinformation. In the United States, the federal government completely threw out the playbook – and with disastrous results.

Attempts to get back on track in the last months of the Trump administration and following the election of Joe Biden were then limited by a vocal populace incited by the individualistic, anti-science views encouraged by the former's laissez-faire approach to COVID-19. To return to the sociology of scientific knowledge, distrust of government and science, exacerbated by the actions of the previous presidential administration and American individualism, has led to shockingly widespread perception of the pandemic and related issues as beliefs rather than facts. This attitude has roots in our history as a country and isn't the result of a recent event or political trend, so it calls for unique approaches to effective current and future pandemic mitigation in the United States. However, the tried-and-true lessons and strategies from the pandemic playbook described by Parker will still form the basis of these, as well as lessons learned in their implementation from successful international response to COVID-19.

Containment

The first step to effectively curtail a pandemic is containment. Whether the virus originated within the country or not, it is essential to shut down travel in order to prevent the spread of the virus across international borders (Parker, 2021). Local isolation, a step that will be discussed later, may be appropriate depending on the estimated levels of community transmission by the time of detection. In the case of a highly-communicable and often asymptomatic disease like COVID-19, a swift shutdown of potential entrance routes for the virus and a system of assurances around those that must remain open is essential.

One of the most comprehensive and organized travel bans was instituted in New Zealand. The country has been celebrated as an international role model for its pandemic response and has had only 26 deaths due to the pandemic as of May 15, 2021 (WHO, 2021), despite the initial outbreak occurring during the tourist season and the country being a popular destination for Chinese tourists. New Zealand's first travel ban was instituted on February 2, 2020, the same day as the first ban in the United States. However, New Zealand's ban proved to be significantly more effective due to its comprehensive nature. New Zealand's ban included "airline passengers who had originated or traveled through China during a 14-day period prior to arrival" (Parker, 2021) and required a 14-day self-isolation for travelers from other countries. The initial American ban was on direct flights from China but did not preclude passengers who had travelled in China and were arriving from another country. New Zealand later went on to require "all airline or marine passengers entering New Zealand from overseas to undergo medical testing and to quarantine in a supervised facility" (Parker 2021), while the United States implemented distancing and rapid testing measures but never imposed further mandatory control methods (Parker 2021).

The somewhat loose restrictions on American travel leave much room for improvement in the important pandemic playbook step of containment. Confusingly, the rhetoric from the Trump administration at the time focused on the fact that the virus came from China, even going so far as to use terms in official records such as "the Chinavirus" and "kung flu." The offensive nature of the presented narrative notwithstanding, the administration's xenophobic platform should have realistically resulted in a much stronger containment response. In any case, like the former President's travel ban on seven predominantly Muslim countries in 2017, the administration failed to see the forest for the trees in focusing travel restriction efforts on China. By instituting travel bans against a handful of countries under the guises of preventing terrorism

and stopping the spread of the virus simplistically rather than launching a comprehensive effort to combat these forces, the Trump administration weaponized and codified the xenophobia of its base. These actions contributed to the public perception of COVID-19 as a foreign issue rather than a worldwide crisis. Viewed through the lens of the Strong Programme, the pandemic became an issue of nationalism rather than public health. This is not to say that a strong national message cannot aid in the fight against the pandemic, but the message must be one of unity rather than opposition.

The clear message of unity delivered by New Zealand's Prime Minister Jacinda Ardern on COVID-19 contrasted strongly with the factually-inaccurate Tweets and statements issued by Donald Trump. In her official address announcing the level 4 lockdown, PM Ardern's emphasized the importance of following through with the impending lockdown "as a nation" (American Rhetoric, 2020) and to "be strong and be kind" (American Rhetoric, 2020). Parker writes that the high level of voluntary compliance in New Zealand to safety measures such as the nationwide lockdown and tracking measures can be attributed to the "sense of civic purpose" (2021) espoused by PM Ardern and her government. Meanwhile, President Trump and his administration delivered a fractured message that waffled between "downplaying the severity of COVID-19, treating the risk as already under control, [and] denying the need for an aggressive federal government response" (Parker, 2021). Additionally, President Trump's delegation of responsibility – and later blame – for COVID-19 response to individual states further damaged the unity of the nation against the virus. Messages from individual states on the severity of the pandemic and even its existence were fractured, and levels of restriction varied wildly across the country. Parker suggests that this lack of clear purpose accounts for "the increasing numbers of Americans have rebelled against arduous restrictions with no clear end date" (2021).

Like the Trump administration, the South Korean government took a strongly nationalist stance on COVID-19. A swift and aggressive response served as a major pillar of President Moon Jae-in's presidency, and contributed to a massive jump in approval rating as well as his party's midterm takeover of the National Assembly (Yi & Lee, 2020). But unlike the Trump administration, the South Korean government's nationalism involving the pandemic and deferral to its scientific experts allowed for the deployment of one of the largest COVID-19 testing efforts in the world.

Testing

Testing is a vital step in stopping the spread of a pandemic, especially with a virus like COVID-19 that produces large numbers of asymptomatic cases (Parker, 2021). The South Korean government was able to establish a massive testing system by promoting infection control as a national priority and putting its medical and scientific experts at the helm.

The government response to the pandemic in South Korea was initially slow due to "confidence that [South] Korea's medical capabilities could handle any major public health challenges" (Ahn et al, 2020). This confidence, which could be viewed through the Strong Programme as an issue of patriotic beliefs encroaching on the actual capabilities of a country, could also be seen in the American response to the pandemic. However, through the prominent inclusion of medical and infectious disease experts in their response, South Korea has had approximately 131,000 cases of COVID-19 as of May 15, 2021 (WHO, 2021).

By mid-March of 2020, 154 times as many tests had been performed in South Korea than in the United States. This is due to both the aggressive testing campaign launched in the former and the delay of the latter to defer to additional medical professionals and authorize working tests. For a full month after the World Health organization declared an COVID-19 an

international crisis, the only coronavirus test kit authorized by the United States Food and Drug Administration was a non-functional CDC product. Even after Emergency Use Authorization was provided for privately-developed kits, the country lagged behind. While testing rates had improved by the end of the year, state reporting had not been standardized, nor had the types of tests available (Parker, 2021).

In contrast, soon after the high potential for asymptomatic infection and droplet transmission was discovered, the South Korean government implemented the Disease Health Integrated Management System (DHIMS) to coordinate the flow of information between a wide network of local testing sites and the Korean Centers for Disease Control (Ahn et al, 2020). The DHIMS oversaw the massive amount of data collected via the comprehensive contact tracing protocol enacted by the government, as described by Ahn et al.

The public safety law requires that confirmed patients disclose their recent movements and identify all contacted persons. The local government examines a confirmed patient's recent usage information from mobile phones and credit cards and uploads all information about the contacted persons including their name, address, contact information, date of birth, gender, disease name, diagnosis date, age, occupation, place of residence, telephone number, and health status, to the DHIMS (2020).

This contrasts strongly with the contact tracing system in the United States, which varied by state but mainly consisted of tracing via telephone call and voluntary mobile applications. Even though the CDC appropriated \$11 billion to states and localities to establish contact systems, a widespread lack of resources and training for implementing these systems resulted in

“only about a third of the recommended number of tracers” (Parker, 2021), whereas in New Zealand, a contact tracing cell phone application was voluntarily downloaded by nearly half the population that sought to do the same thing (Parker, 2021). The sheer amount of information collected by the South Korean government would alarm most privacy-obsessed American citizens, but was in fact fairly typical among successful contract tracing programs¹ such as in Taiwan.

The Center for Systems Science & Engineering at Johns Hopkins University predicted that Taiwan would have “the second highest number of COVID-19 cases worldwide due to its proximity to and frequency of flights to and from China” (Huang et al, 2020). However, as of May 15, 2021, the country has confirmed approximately 1500 cases (Taiwan Centers for Disease Control, 2021), which is in no small way due to the country’s nationally-funded testing and isolation protocol.

About two weeks before COVID-19 was classified as an international emergency by WHO, the Taiwan CDC assigned the disease class-V communicable status. This designation legally mandated healthcare providers to report suspected cases to the Taiwan CDC within 24 hours and gave the government the power to “isolate or quarantine persons confirmed or suspected to be infected at designated sites” (Lin et al, 2020). The reporting mandate was later expanded to include symptomatic individuals who had been in contact with confirmed or suspected cases. Once home-quarantine was established, GPS and camera data were collected via both personal and government-issued smartphones, and law enforcement was utilized to track and enforce compliance. Quarantine and isolation compliance was ensured by tracking the cell phone

¹ It should be noted that the South Korean model was not always effective in preserving the liberty of its citizens, as in the cases of the Itaewon and Shincheonji clusters. See Yi & Lee, 2020 for more information

locations of high-risk individuals (Huang et al, 2020), and consequences for repeatedly breaking home quarantine included fines and detention (Lin et al, 2020).

The right to privacy is held in high esteem in the United States, so the imposition of a protocol that involved the mass collection of personal, medical, and geographic data would be much less easily-received than in other countries. Although Americans sacrifice their right to privacy all the time to private entities, intentionally or not, the idea of being tracked by the government is often met with visceral reaction in this country. Nevertheless, historical examples such as the War on Terror demonstrate the potential power of a strong unifying message in shaping American public attitude towards massive government intervention. To emphasize, the core of the message must be on *unity* to prevent the American tendency towards individualism registering a threat towards personal freedom that supersedes the collective good, as was seen during the COVID-19 pandemic. In the United States, the concept of refusing to wear a mask or comply with physical distancing rules became tied to the concept of freedom, a patriotic ideal. Thus, not following safety protocols became an individualist act of patriotism, unlike in countries like South Korea where “a positive [COVID-19] test implied immoral behavior that defied the national interest” (Yi & Lee, 2020). In order to work within the American need for perceived personal freedom and increase compliance with government-imposed safety measures, the idea of infection control must become an expression of rather than a limitation on freedom.

By advancing the idea of stopping the pandemic as a unified civic duty like the governments of South Korea and New Zealand successfully attempted to do, beliefs surrounding COVID-19 can be reframed. The current cognitive model of some of the strongest opponents to mandatory safety measures is that freedom is American while the pandemic is foreign, while another large set believes that their individual situations somehow make them exempt from the

effects of the virus. Therefore, reframing COVID-19 as a unified American issue coupled without an efficient and accessible testing protocol could go a long way towards increasing compliance with safety measures in the United States. However, without ensuring appropriate allocation of resources, the willingness of the public to participate in such measures will be a moot point.

Equipment

Proper equipment is essential for treating and preventing the further spread of a viral pandemic (Parker, 2021). Countries like Taiwan had prior experience containing and existing infrastructure from combatting epidemics like the SARS virus. The existing infection control-related health education programs, mandatory accreditation, and inspections led to “widespread public acceptance and adherence to infection control rules” (Huang et al, 2020) during the COVID-19 pandemic. Additionally, like New Zealand, the Taiwanese government was prepared to defer to its healthcare experts.

In January of 2020, the Taiwan Centers for Disease Control activated the Central Epidemic Command Center (CECC) to manage matters related to the pandemic. The CECC coordinated the distribution of “three million N95 masks and isolation gowns from [the government’s] 35-day reserve stock” (Huang et al, 2020), and maintained a steady supply of PPE for both healthcare workers and individuals by imposing a temporary ban on the export of facemasks, a mask rationing system for citizens, a website for citizens to order masks as they became available (Huang et al, 2020), and a government-funded mobile app to track mask availability at distribution points (Lin et al, 2020).

In New Zealand, increased domestic production by manufactures sourced from a national register created by PM Arden, and cooperation with Chinese affiliates met the demand for PPE

created by the COVID-19 virus. However, in the United States, no effort was made by the Trump administration to encourage increased domestic production, further utilize international manufacturers, or ensure a full national stockpile. This resulted in a brawl for supplies in which “states competed not only against each other but against the federal government, which on one occasion seized three million N95 masks ordered by the State of Massachusetts” (Parker, 2021). Despite healthcare workers in some states reusing masks and wearing trash bags, the Trump administration continued to reference a nonexistent national surplus. This obvious deviance from observable reality, amongst other falsehoods put forth by the administration and the inflammatory comments surrounding “fake news” contributed to the idea of the pandemic as a belief rather than a fact.

By misrepresenting reality and arguing that much of what the public was seeing in mainstream news and from medical experts was a manipulation, the Trump administration created a situation in which authority was distrusted and personal beliefs were as valid as proven fact. In doing so, health experts in the United States such as Dr. Anthony Fauci were disbelieved and even vilified despite their credentials and good faith efforts to contain the pandemic, unlike in other countries where the Centers for Disease Control and authorized agencies had a significant impact on pandemic-related policymaking.

Repairing the damage done by both imagined and real “fake news” threats and restoring public faith in both the media and government is an ongoing task that transcends issues of the pandemic. However, a key factor of success in international efforts to stop the spread of the virus has been transparency and dispersal of scientifically-backed information. For example, the Taiwan CECC held daily informational press conferences to provide transparent updates on the national response, public service announcements related to pandemic safety measures were

broadcast by all television networks (Huang et al, 2020), and Disease-Prevention Butler, a mobile app already established by the Taiwan CDC, was upgraded to include an AI chatbot to address the public's concerns on an individual level (Lin et al, 2020). Additionally, although policymaking and action speak louder than words, especially during a global pandemic, the effect on morale by a leader willing to take the time to communicate the state of the nation to the public can be enormous.

From President Franklin Delano Roosevelt's fireside chats during in the mid-twentieth century to PM Jacinda Ardern's powerful remarks in the wake of the 2019 Christchurch shooting to New York Governor Andrew Cuomo's series of televised daily press briefings that brought on-the-ground updates on the COVID-19 pandemic to a harried public, the ability of a leader to set the tone during a crisis is clear. The negative results of this can be seen in the wake of the disorganized, combative remarks offered by then President Trump – a disunified, fearful public who believes that they can only rely on themselves, and will likely be resistant to actions that require personal sacrifice for the greater good.

Distancing

The final and arguably most important step in the pandemic playbook is to implement and enforce appropriate physical distancing procedures until a vaccine can be developed (Parker, 2021). Especially in the case of novel viruses, physical distancing can be the greatest weapon in containing the spread of a virus. New Zealand's 2020 lockdown, described by Parker as "one of the strictest in the world" (2021), consisted of a stay-at-home order, the restriction of movement except for essential grocery and medical services, and the closing of "all schools, public venues, and non-essential businesses – including restaurants and carryout services" (Parker, 2021). It was enforced through the threat and utilization of the judicial system, with violation tracking

supplemented through community reporting, but was largely accomplished voluntarily (Parker, 2021).

Meanwhile, in the United States, the news cycle was filled with pictures of American beaches packed with unmasked visitors. This is partially due to the fact that state governments were delegated the responsibility of imposing and enforcing physical distancing, and compliance was not tracked by the federal government. This led to a cross-country patchwork of start dates, definitions of “essential” business, and expectations for safety requirements such as masks. According to Parker, “anecdotal accounts suggests that even states that issued lockdowns and mask mandates deployed civil and criminal enforcement sanctions only sporadically and as a last resort” (2021).

The widespread disregard for public safety measures during the pandemic was influenced by many of the factors that complicated the implementation of other steps of infection control, but ensuring that future physical distancing measures are effective will require perhaps the greatest cultural shift. To revisit the Strong Programme, effective physical distancing relies entirely on the belief of individuals that they have enough of an impact to both spread and stop the spread of a virus and that the virus is serious enough to disrupt their daily lives to do so. In order to effect a cultural shift that will maximize compliance with this sort of behavior in the United States, the overall narrative of the public health must be shifted from one of restriction to one of resilience.

Other countries such as New Zealand have successfully adapted to a narrative of restriction (Parker, 2021), but the individualistic ideals of the United States make this difficult. However, the deeply rooted idea of American Exceptionalism plays very well with a different pandemic narrative – one of a strong and resilient people managing to not just survive but to

thrive on very little. This story is deeply American and can be seen throughout our culturally-celebrated stories of pioneers heading West and billionaires who rose from the dust. By emphasizing that the pandemic and public health in general is not about what has been taken away but about the inner strength required to overcome scarcity, the innate American tendency to demonstrate resilience is activated, and government safety restrictions are more likely to be accepted as necessary hardships.

Transferability and Relevance of Comparative Case Studies

The United States is an unusual country in many ways, and some of the similarities among the countries discussed in this paper may make their success in combatting COVID-19 seem inherently non-transferable. However, although factors such as location and experience played a role, the success of countries like Taiwan and New Zealand is due to their aggressive and comprehensive response to COVID-19 rather than innate advantages or happenstance (Tan, 2020).

Pacific island nations fared some of the best internationally during the pandemic. However, because air and sea were the primary travel methods of the COVID-19 virus rather than land, the geographic isolation enjoyed by island nations is not enough to account for success in the pandemic, especially considering the fact that Taiwan and New Zealand both experience large amounts of air travel as business and tourist destinations with a significant amount of travel occurring from China (Parker, 2021). The poor performance against COVID-19 of the United Kingdom, another island nation, further demonstrates this (WHO, 2021).

The experience of East and Southeast Asian countries containing contemporary outbreaks of highly communicable diseases such as SARS and MRSA contributed to their success and resulted in existing infrastructural advantages. However, the United States is also no stranger to

the containment of nonnative infectious diseases. From H1N1 in 2009 to the threat of Zika and Ebola in the mid-2010s, the country has been able to successfully contain and treat (when possible) epidemic illnesses before. The difference lies in the maintenance of critical infection control infrastructure in countries like Taiwan and the defunding of relevant programs and resources in the United States. In other words, the United States had the ability to implement such infrastructure but didn't, so lessons learned from the success of more experienced countries is still transferrable to the United States.

In order to maintain available PPE and test kits, the governments of Taiwan and New Zealand both took a significant role in influencing private industry in their respective countries to combat the pandemic. Despite the fact that these are both also capitalist countries, some would point to the idea that the American government has no ability to control the free market. However, legislation such as the Defense Production Act of 1950 confers the president with the authority to expedite and expand the supply of materials and services from the U.S. industrial base needed to protect the national defense and promote related interests such as emergency preparedness (FEMA, 2021), so the free market in the United States cannot be used as argument against the transferability of the case studies.

Conclusion

The United States is one of the most affluent and technologically-advanced countries in the world, but the COVID-19 pandemic revealed flaws in the nation's ability to control infection. Staggering infection rates and death tolls stood in sharp contrast to other nations and begged the question of what factors were affecting the pandemic response so negatively, in spite of existing predictive models. Comparison between the United States and nations of similar development and wealth have revealed that the interplay of collectivism, government, and science have been

underestimated as factors shaping public health. By restoring trust in the government as an actor in the public health field and refining future metrics of global health to place an increased emphasis on sociological factors, we can be better prepared for the next pandemic and improve the current status of international public health. Finally, although the widely-acknowledged steps of the pandemic playbook can be adjusted to better reflect American ideals, a cultural shift away from such stark individualism may be necessary to improve the country's performance in the next public health crisis.

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