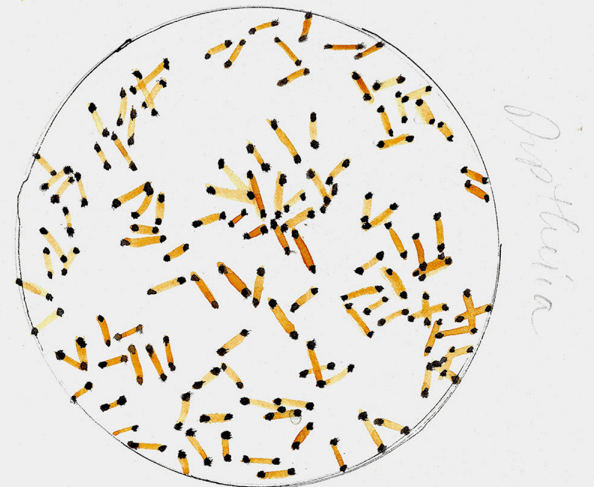
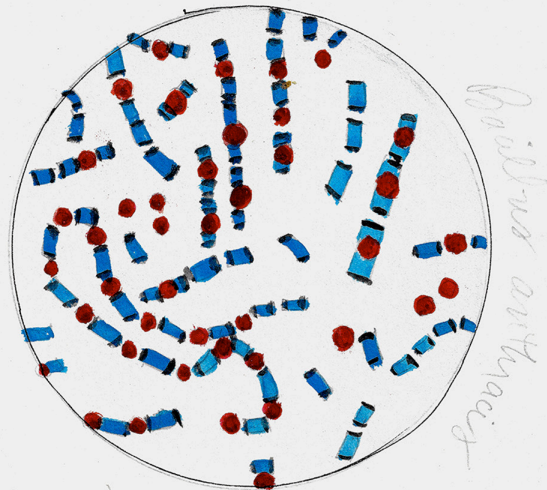
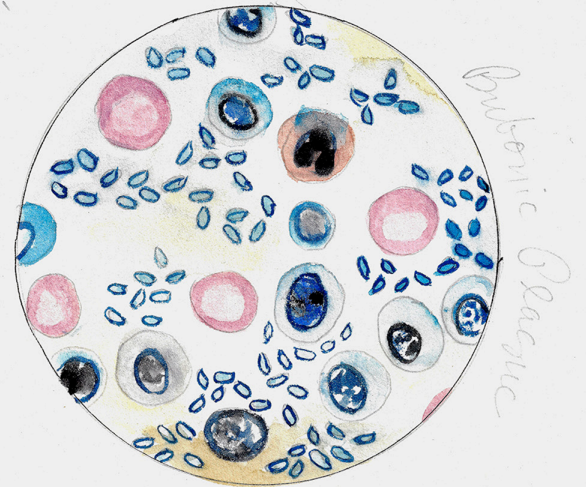
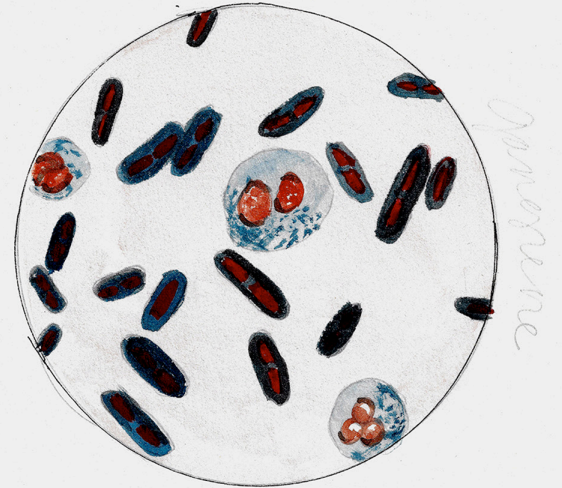
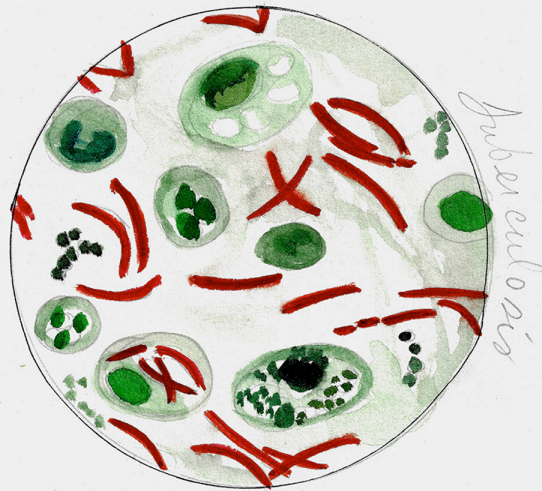


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Studies in Emergent Order and Organization

THE POLITICAL ECONOMY
OF PANDEMICS: TOWARDS
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Studies in Emergent Order and Organization
VOLUME 9 / ISSUES 5 + 6 2021



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Introduction

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1. INTRODUCTION

The COVID-19 pandemic has threatened liberal democracies and civil liberties in several unexpected ways. The new digital and social context of a post-pandemic world is profoundly challenging our prior notions of freedom, nationality, and liberalism. As such, the pandemic has impacted the ways we approach citizenship, basic liberties (such as the right to mobility), public policy, and economics. Not only have liberal democracies been challenged in practical health matters and public policy making, but also the way in which economists and social scientists understand modern pandemics and pandemic governance. From an epidemiological perspective, the COVID-19 health crisis presents a global public health crisis. The problem being analyzed is hence a global problem, which has led to a global externality-oriented analysis based on Pigouvian conceptualizations.

Thus, from an economic perspective, this global health crisis can be conceptualized as an externality problem with a social cost. Economists have interpreted the pandemic as an externality problem with global and homogenous characteristics. This view sometimes leads them to think strictly in Pigouvian and coercive terms, neglecting the institutional insights of political economists such as Ronald Coase (1960) and Elinor Ostrom (2012), who thought about externalities differently and in terms of exchange (Paniagua and Rayamajhee 2021). As a consequence, most of the economic and health policies implemented throughout the world to address the global health externality and the spread of the disease have been based on strictly top-down Pigouvian thinking. Such thinking seeks to design implicit taxes or coercive measures and subsidies from the perspective of an omniscient social planner confronting a well-defined social welfare function and engaging in a clearly defined social cost-benefit analysis (Boettke and Powell 2021). This narrow view has led to questionable and inefficient measures with mixed results; ultimately, it has not facilitated good governance in the face of the global externality (Bendavid et al., 2021; Coccia 2021). In order to break away from this narrow view of pandemic economics, we need to encourage research from a political-economic and multidisciplinary perspective that explores the uncharted intellectual territory of the economics and social philosophy of modern pandemics and the pandemics' implications for our basic liberties and institutions. This special issue seeks to explore this terrain and delineate a novel research agenda for navigating the uncharted economic territories that the COVID-19 pandemic has instigated.

2. OVERVIEW OF ARTICLES AND CONTRIBUTIONS

This special issue comprises ten articles and is divided into three broad sections: knowledge problems, alternative political economy, and new social challenges. Section I, “Expert Failure and Knowledge Problems,” comprises the first three articles and seeks to explore the epistemological problems and challenges related to pandemic management and public policy. Ultimately, it stresses how these epistemological challenges can lead to severe expert failure while attempting to govern large externalities such as pandemics. Section II, “The Political Economy of Modern Pandemics,” containing the next four articles, proposes a novel orientation for thinking about the major conceptual challenges related to pandemic economics: an institutionalist and political-economic perspective. This section takes Nobel laureate James Buchanan’s advice to “dare to be different” in political economy in order to see social and pandemic challenges in a new light. Finally, the last three papers are in Section III, “Pandemics and New Social Challenges,” which illuminates the relationship between health crises and the social challenges that have emerged in contemporary societies. Specifically, the section addresses social issues that were exacerbated during the pandemic, such as the formation or erosion of social capital, changes in conceptualizing citizenship, limitations on internal and international human mobility, and the possible need for predictable and robust economic assistance in times of crisis. Taken together, these three sections provide a valuable political-economic and social interpretation of pandemics and an alternative reading of the proper role of economics and public policy in both understanding large externalities, such as those stemming from contagious diseases, and plausible governance alternatives to face them (see also Buchanan 1959).

F. A. Hayek (1956, p. 463) once pointed out that “nobody can be a great economist who is only an economist—and I am even tempted to add that the economist who is only an economist is likely to become a nuisance if not a positive danger.” I believe that something similar applies to special issues, collection of essays, and other academic endeavors. A special issue about the economics of pandemics that is only based on economics—narrowly conceived—is likely to become a nuisance, at best, and a positive danger for public policy at worst. Taking Hayek’s warning to heart, here I have brought together contributors from a range of social sciences disciplines in an attempt to enrich the academic exploration of the political economy and social challenges of pandemics through an interdisciplinary and broader approach. Thus, I hope this special issue can contribute to avoiding the danger of assuming—in Buchanan’s (1986) words—that we are “proffering policy advice as if they [academics] were employed by a benevolent despot”. The disciplines represented here include philosophy, economics, sociology, political science, epidemiology, and migration studies. A distinctive feature of all the contributors is their eagerness to engage in cross-disciplinary reflections in a rigorous and scientific manner.

Jon Murphy, Abigail Devereaux, Nathan Goodman, and Roger Koppl begin this special issue by analyzing the possibility, within existent forms of government-based policy making, of expert failure, which undermines the possibility of suitable governance in the face of pandemic challenges. By borrowing from the framework on expert failure established by Koppl (2018), the authors critically analyze the COVID-19 pandemic response in order to pinpoint where missteps in expertise occurred. They also suggest alternative institutional arrangements that could improve the process of expert advice giving. A crucial suggestion is that, during a pandemic, citizens and governments must rely on certain forms of expert opinion. Thus, the question becomes: what institutional arrangements allow for the best advice to dominate decision making? They show that current institutional arrangements have certain detrimental features that produce a market for expert opinion that possesses features of monopoly, monopsony, siloing, and other epistemic flaws that give rise to persistent expert failure. Thus, while experts can help us survive pandemics, persistent expert failure can exacerbate health problems.

Scott Scheall and Parker Crutchfield further develop the concept of knowledge problems, as applied to policy making during pandemics, in the second article, which explores the problems associated with policy makers’ ignorance. By applying the analysis that the authors previously developed concerning the significance of ignorance for decision making (see Scheall, 2019), they argue that policy responses around the

world, to mitigate the effects of the COVID-19 pandemic, are a paradigmatic case of irreducible ignorance of policy makers. They argue that responses to the virus cannot be explained by a divergence or misalignment of interests between policy makers and populations. Rather, the policy blunders are better understood by recognizing the pervasive effects of irreducible ignorance and epistemic limitations on policy makers' incentives to pursue different—and less cognitively burdensome—policy objectives. Ultimately, the problem of ignorance and epistemic burdens explains why policy makers have focused primarily on limiting one kind of suffering (the obvious biological suffering due to the virus) and relied heavily on lockdowns rather than policies that are more complex and epistemologically more burdensome. This framework also explains why policy makers continued to resort to lockdowns despite the emerging scientific evidence questioning their effectiveness.

Max Gulker and Phil Magness conclude Section I with the third article, which complements the previous essays by focusing on a different kind of knowledge problem. The authors argue that the unprecedented policy disruptions were the product of problematic incentives, of a kind recognized in public choice theory, faced by policy makers who also faced costly, imperfect, or nonexistent information. In short, politicians demanded immediate information in order to appear proactive during the early stages of the pandemic, which favored particularly calamitous predictions from experts with incentives to oversell their modeling results. The forecasts, produced to satisfy the strong demand of politicians to act quickly, created public and media outcry for comprehensive and highly costly responses that resulted in extensive economic harm. Gulker and Magness show the interactions between information asymmetries, political incentives, and institutional constraints in bringing about massive economic shutdowns, and they draw implications for the path forward. They also point out a paradox in modern public policy: the pandemic knowledge problem was worsened rather than improved by rapid technological and scientific advances that led to multiple voices fighting for scientific and moral authority, resulting in large-scale confusion about the vital trade-offs at hand (see also Bagus et al. 2021).

Part II begins with the fourth essay, by Rosolino Candela and Peter Jacobsen, exploring a rules-based and constitutional approach to reassess the policy measures undertaken to govern the health and economic challenges during the pandemic. Their article addresses a relevant yet neglected question: does the threat of a pandemic justify the sacrifice of legal and constitutional principles for the sake of expediency? They focus on the unintended consequences of price controls through the lens of constitutional political economy. Building on the work of Nobel laureates James Buchanan (see Brennan and Buchanan, 2000 [1985]) and F. A. Hayek (2011 [1960]), they argue that constitutional procedures provide rules for reason. Importantly, they show that the maintenance of constitutional rules is relevant not only to provide constraints on arbitrary discretion, but also to generate the epistemic preconditions that foster individuals' creative powers that are necessary to successfully recover. Their article illustrates this point by reframing price controls as violating the US Constitution, particularly the First Amendment.

Vincent Gelo and Ilia Murtazashvili take the political economy of modern pandemics further in the fifth essay by addressing a fundamental question in the debate over the role of governments in managing pandemics: can governments deal with pandemics successfully? While few economists dispute the claim that governments should have some role in the governance of pandemics, the relevant institutional question that Gelo and Murtazashvili point to is whether governments can actually deal with pandemics. Thus, they shift the emphasis from the 'ought' to the 'can.' They show that there are unavoidable intertemporal trade-offs embedded in providing public health measures since governments provide public goods in a bundle that cannot be disentangled. This means that states with greater capacity to implement coercive and ad-hoc measures might be better able to deal with pandemics in the short run. Such coercive capacity is associated however with a lesser ability to generate economic growth in the long run, thus also less able to provide other crucial health benefits linked to economic development. The authors claim that as a nation's institutions are a bundle, some nations are doomed to deal poorly with pandemics, at least in the short run. The important ideas of institutional bundles and intertemporal trade-offs suggest a critical insight for pan-

democratic economics: despite the positive and normative case for government involvement in public health to govern pandemics, effective governance may be outside governments' range of institutional possibilities.

In the sixth essay, Veeshan Rayamajhee, Shikhar Shrestha, and Pablo Paniagua explore the challenge of how societies can best govern and manage health crises when pandemics are conceived of as nested externalities. Most of the economic literature assumes that pandemics are homogenous and large-scale externalities that need to be addressed by a single and definitive center of power imposing coercive measures upon society. By building on Elinor Ostrom's (2012) work on climate change, coproduction, and nested externalities, the authors challenge the Pigouvian conception of pandemics as unified externalities by showing that they resemble nested externalities, such as climate change. This paradigm shift is critical since it undermines the previous notion that a government must be the only or most important source of governance in managing infectious diseases. The essay shifts the governance focus toward local governments, communities, and individuals as *coproducers* of governance. The authors also present an alternative perspective that views social distancing as a coproduction process; that is, virus containment requires active individual-level participation and a high degree of cooperation. This view suggests a relevant point for public policy going forward: because external costs are difficult to measure and it is nearly impossible to monitor and sanction violations, coercive health measures not accounting for coproduction processes are unlikely to succeed.

Mikayla Novak concludes Section II with the seventh essay, which analyzes pandemics through the lens of entangled political economy (EPE). The pandemic has substantially altered economic, social, and political relationships. The EPE approach recognizes human interactions as generating complex economic-social-political phenomena. Pandemics help clarify the synergies among human, biological, and physical systems for maintaining productive and healthy relations. Novak argues that EPE theory suggests an extensive re-entanglement of relationships that influences the robustness of productive economic exchange. The article emphasizes that the pandemic has increased the significance of healthcare organizations in the modern economy; and it has entrenched health services as a unique site for governmental growth and a catalyst for further entanglement. This framework could enable novel perspectives on the need to adapt, and ultimately mitigate, diseases threatening human life, liberty, property, and happiness.

Virgil Storr, Stefanie Haeffele, Laura E. Grube, and Jordan K. Lofthouse begin Section III with the eighth article exploring the pandemic crisis as a source of social capital formation. By adopting the vision delineated by Tocqueville ([1835] 2000) in *Democracy in America* concerning the propensity of Americans to form voluntary associations and engage in self-governance, the authors explore similar propensities of contemporary citizens to form associations and tap into new sources of social capital to provide bottom-up services and solutions to pandemic challenges. They point out that the scholarship on community responses to crises has tended to overemphasize how community members deploy existent social capital to respond to crises. Meanwhile, the literature has overlooked the potential of crises to engender new social capital. The authors show that after a crisis, community members not only rely on existing networks for aiding themselves, but also deepen relationships and develop new connections and community interactions, ultimately developing new configurations of social capital. Importantly, the authors show that crises such as pandemics can help to adapt existing associations so that they serve new social functions and help people form new associations to meet collective needs. This adaptability can help to reinforce or reinterpret narratives allowing people to overcome collective action problems that are deemed insurmountable through a Pigouvian analysis.

The ninth essay, by Victoria Finn and Mari-Liis Jakobson, delves into an important yet largely unexplored aspect of pandemics: widespread human mobility restrictions and exceptions created varying (im)mobility for different individuals. The essay explores a crucial question for the future: how has the governance of human mobility during the health crisis affected, and will continue to affect, the concepts of borders and citizenship? By drawing on evidence from the European Union and South America, the authors compare states' changes in free movement, sometimes dependent on nationality, for regional and extra-territorial migrants to evaluate how the notions of borders and citizenship have shifted. They find internal borders fluctuated and external borders pushed further into other territories. Finn and Jakobson point out

that by differentiating among people—particularly migrants due to varying legal statuses—and by defining certain forms of essential work, governments deteriorated the rule of law since frequently changed measures undermined individuals’ ability to predict mobility and income. The authors suggest that short-term policy reactions may lead to long-term consequences for human mobility, as ad-hoc exceptions and control mechanisms under expanded Leviathan-style approaches could continue to undermine individual mobility in and between countries.

Otto Lehto concludes the special issue with the tenth essay, which explores how societies can implement a stable and predictable form of permanent crisis management to uphold the rule of law and avoid regime uncertainty. As a palliative to the COVID-19 crisis, governments have turned to various discretionary measures such as ad-hoc cash transfers to certain workers and businesses. The measures have had mixed results and exacerbated discretion and discrimination. Lehto’s essay argues that some form of universal basic income (UBI) could be a more robust form of predictable and permanent crisis management that avoids both discrimination and dominion. He argues that one of the main advantages of UBI, as Nobel laureates F. A. Hayek, Milton Friedman, and James M. Buchanan have argued, is that it does not depend on competent and benevolent government discretion, but rather on preestablished rules. The paper also argues that UBI combines the benefits of fungible resources with the power of independent decision making, thereby empowering millions of crisis-struck individuals. It contends that, compared to discretionary tax-and-transfer schemes, UBI rules are more compatible with polycentric discovery of novel solutions from the bottom up, which are required for effective and decentralized governance during pandemics. Ultimately, in times of crisis, UBI could become a cornerstone of what the author terms “the permanent crisis management framework.” In making his proposal, Lehto also sketches a thought-provoking theoretical model of UBI as a predictable facilitator of polycentric crisis preparedness.

FINAL REMARKS

Undoubtedly, the COVID-19 pandemic has presented several practical and theoretical challenges to economists in particular and social scientists in general. If we analyze pandemics only through a narrow economic or Pigouvian perspective, we run the risk of missing crucial features of pandemic phenomena, such as constitutional aspects, institutional and intertemporal trade-offs, coproduction processes, and the formation of social capital, among other crucial aspects that can help us better govern pandemics and other negative externalities in the future. It is my hope that the special issue that you have in front of you succeeds in delineating an alternative and valuable political-economic interpretation of modern pandemics and that it puts forth a fruitful research agenda for the economics of negative externalities so that we can be better prepared intellectually for future health crises that will again lead us into uncharted territories.

As a guest editor, and on behalf of the editorial team of *Cosmos + Taxis*, it has been my privilege to compile this special issue during my own, rather long and severe, personal quarantine. I am grateful that such a world-leading and multidisciplinary group of scholars have offered to invest their time and energy to provide valuable ideas and reflections so that we can better understand crucial features of modern pandemics and negative externalities more generally. Finally, I hope that this special issue will serve as an enduring contribution and an intellectual catalyst for developing an alternative research agenda applying what Peter Boettke (2012) has termed “mainline economics” to the fields of pandemic and health economics and to the broader question of how to best govern externalities. The time is ripe to follow James Buchanan’s advice to “dare to be different” in understanding global challenges such as migration governance, climate change, and pandemics. I hope that this special issue will convince the reader that such a pursuit is worth undertaking.

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Expert failure and pandemics: On adapting to life with pandemics

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Abstract: In a pandemic, citizens and policy makers must rely on expert opinion. What are the institutional arrangements that allow for the best advice to come forward? Using the framework established by Koppl (2018) on expert failure, we analyze the COVID-19 pandemic to see where missteps in expertise occurred and suggest institutional arrangements to improve expert advice in future pandemics.

1. INTRODUCTION

During pandemics, both policymakers and private citizens depend upon expert advice. The opinions of epidemiologists and public health experts are crucial for devising pandemic responses. Nevertheless, while experts have important specialized knowledge about infectious diseases, they are not infallible. Whether they offer accurate and useful advice will depend in part on the institutional environment within which they produce and disseminate knowledge.

Often, economists who analyze pandemic responses take expert opinion as given. The literature on economic epidemiology and the optimal control of infectious diseases tends to focus on market failures such as infection externalities and posits that the state can act as a benevolent social planner to correct these market failures and optimize according to a social welfare function (Weimer 1987; Gersovitz 1999, 2011; Francis 2004; Gersovitz & Hammer 2003, 2004, 2005; Barrett & Hoel 2005; Rowthorn, Laxminarayan, & Gilligan 2009; Goldman & Lightwood 2002). This approach treats pandemic policymaking as a black box and ignores how the expert advice that guides policy comes about. We fill this gap in the literature, analyzing how institutions, incentives, and social epistemology shape the expert opinion that guides public health policy.

Our analysis builds upon a substantial literature in the political economy of knowledge production.¹ The core of our theory comes from Roger Koppl's (2018) work on expert failure. Expert failure theory emphasizes the contextual nature of knowledge production and how alternative institutional arrangements influence the quality of expert opinion and advice. Using this framework, we show that experts not only shape public policies, but public policies and institutions also shape expert advice. Given the incentive and knowledge constraints faced by experts, they are unlikely to advise policymakers in a manner that allows for the optimal control of infectious disease. A realistic analysis of infectious disease policy requires placing experts within the

model, rather than assuming that idealized experts and policymakers can intervene upon the mere mortals that interact within markets and civil society.

The paper proceeds as follows. The Section 2 explains the theory of expert failure. Section 3 discusses some of the scenarios that contribute to expert failure. Building on Section two's theoretical framework, Sections 4, 5, and 6 analyze expert failure examples during the COVID-19 pandemic and institutional factors that increased the risk of expert failure during this pandemic. We conclude in Sections 7 and 8 by discussing some implications of our analysis and possible directions for future research.

2. INFORMATION CHOICE THEORY AND THE DIVISION OF LABOR

Given the inherent scarcity of time and constraints on actors' computational ability, we face a division of labor and knowledge in society: we do not have enough time or capacity to do or know everything. Expertise develops as a consequence of the division of labor. The division of labor entails specialization and trade with other specialists to maximize the satisfaction of our indefinite wants. Similarly, specialization entails the division of knowledge. As Adam Smith discusses, no one knows how to make a woolen coat (Smith 1981, p. 22). That knowledge is dispersed throughout the entirety of the process. Only through the combination of efforts of many people, each with their own unique and specialized knowledge, does the woolen coat get made and distributed.

Much of the knowledge obtained from specialization is tacit; one cannot centralize, collect, and analyze tacit knowledge like technical knowledge (Polanyi 1951, 1958; Lavoie 2016). It resides in the habits and skills of the individual and it may depend on the particulars of time and place. Experts do not have the advantage of aggregating all knowledge needed for an optimal decision. Some of that knowledge is tacit and difficult or impossible to articulate. Sometimes the amount of relevant knowledge exceeds experts' ability to aggregate in a timely manner or, perhaps, at all. And the experts may not know what knowledge and information to aggregate or where to find all the bits they know to be relevant. Also, it can be hard to draw the right inference from your knowledge, especially when the volume of such knowledge is large. Even the best-trained expert cannot consider all the significant and relevant effects of their advice in a complex system.

The division of knowledge can be deepened and abstracted into categories. Those who master one or more of these categories are colloquially called experts. An economist has expertise on matters economic. Likewise, a welder has expertise in welding. This expertise is developed in a similar manner as the technical skills are developed through the division of labor: repeated interactions with the underlying knowledge base allow for the innovation and development of new ideas. Just as the mechanic who continually works with cars can develop new ways to accomplish their tasks, the division of knowledge allows for innovation. Thus, the social epistemology we are briefly sketching is also a theory of the growth of knowledge.

The mainline economics tradition recognizes that knowledge is dispersed among the participants of a given system (Boettke, Haeffele-Balch, & Storr 2016; Mandeville 1988; Smith 1981; Hayek 1937, 1945). Much of the literature focuses on the tacit knowledge aspect of the knowledge problem (for example, see Lavoie 2016). However, we expand the consideration to include other aspects of the knowledge problem. As elaborated upon by Koppl (2018, pp. 118-122), knowledge may be Synecological, EvoLutionary, Exosomatic, Constitutive, and Tacit, or SELECT for short. Briefly, knowledge is "synecological" if the knowing unit is not an individual, but a collection of interacting individuals. It is "evolutionary" if it emerges from an undirected or largely undirected process of variation, selection, and retention. It is exosomatic if it is somehow embodied in an object or set of objects such as a book or egg timer. It is constitutive if it constitutes a part of the phenomenon. The "knowledge" of Roman augurs studying bird flights was constitutive because it influenced events such as when or whether an enemy was attacked. And, finally, knowledge is tacit if it is not "discursively effable." The acronym SELECT is a memory aid. The "L" in SELECT is meant to represent the L in "evolutionary." Thus, knowledge is Synecological, EvoLutionary, Exosomatic, Constitutive, and Tacit.

While there are these multiple types of knowledge, any given piece of knowledge need not be pigeonholed into a single type. For example, the constitutive knowledge of how to throw a curveball may be tacit as well. Frequently we see great sports players become subprime coaches. Instead, we wish to emphasize the complexity of knowledge itself, and the impossibility of aggregation of the sort experts often need. Knowledge is impossible to aggregate because it cannot be understood outside of the order in which it arises (Buchanan 1982), is subjective (Hayek 1945), and is often inarticulable (Lavoie 2016).

Our definition of an expert is not merely one who possesses specialized knowledge, but one who is paid for their opinion (Koppl 2018, p. 154). Thus, our definition of expert differs from the colloquial one. A forensic scientist is an expert; a race car driver is not. Both possess specialized knowledge, but only the former is paid for their opinion. Additionally, a single person can at times be an expert and, at times, not. An engineer is not an expert when she discusses an architectural problem at the dinner table. However, she is an expert when she is paid to evaluate whether a product was designed poorly and testify in court on the matter. Thus, the commodity we analyze is expert opinion.

We follow the same “analytical egalitarianism” advocated by Levy and Peart (2017), where the same behavioral assumptions apply to participants regardless of which side of the market they are on. The expert responds to incentives, just like the purchaser of opinion does. While there are unique aspects to the market for expert opinion, the market participants are not unique. Likewise, the expert faces many of the same constraints as the consumer of expert opinion; the expert judgment is as much subjective as it is objective. The expert must decide what literature is relevant, how much information to reveal, what relevant models to use. The consumer must also make decisions on whose expert opinion to consume.

Given the kinship with public choice, we refer to the theory of experts we are using as “information choice theory,” since the expert must choose what information they will dispense. Furthermore, given that failure can result when there is a choice to be made, information choice theory includes a theory of expert failure. Koppl (2018, p. 189) provides a purposefully open-ended definition of expert failure as “any deviation from a normative expectation associated with the expert’s advice.” Often, perhaps typically, expert failure is some sort of deviation from the full truth. One or more relevant and important truths may be omitted from the failing expert’s opinion or one or more relevant and important untruths may be included in the failing expert’s opinion.

Analytical egalitarianism is essential for the theory of experts. Previous theorists, such as Mannheim (1936) and Cole (2010), emphasize a hierarchical view of knowledge: experts tend to be reliable in their field, and nonexperts are powerless. Analytical egalitarianism stresses behavioral symmetry among the participants in a given market (in this case, the market for expert opinion). Experts are fallible and need not be perfidious or corrupt to be unreliable, as demonstrated in the case of forensic expertise in Whitman and Koppl (2010). Likewise, in the right institutional setup, nonexperts are not powerless before the expert but may take steps to protect themselves from expert failure.

Analytical egalitarianism means we do not rely on poor motivations of actors to get failure. While expert failure could be caused by lying on the part of experts, it need not be. Akin to market failure, where the focus deals with systemic issues like monopoly, legal restrictions, or improper incentives, expert failure theory relies on institutional and systemic explanations for expert failure. Institutional issues like siloing, monopoly of opinion, and high regulatory barriers to entry help us better understand situations in which expert failure is likely to occur.

3. SCENARIOS CONTRIBUTING TO EXPERT FAILURE

As with other forms of failure (market, government), expert failure is likely to occur in certain types of market structures. Scenarios where there is siloing of opinion and skill, where there exists a monopoly/monopsony on expert opinion, or isolation from dissenting/critical voices all contribute to expert failure.

However, we note that certain market structures in a specific field of expert opinion do not imply that expert failure is more likely in the given field. Just as a monopoly in a market with externalities does not imply market failure is certain, neither does a monopoly in expert opinion imply the expert failure is certain. Instead, the structures and their effect on expert failure we discuss here are *probabilistic*.

Koppl (2018, p. 190) notes two great influences on the risk of expert failure. First, expert failure is more likely if the expert is largely or wholly free of competition. Second, expert failure is more likely if the expert chooses for the nonexpert rather than merely advising the nonexpert. Thus, the highest chance of expert failure exists under the “rule of experts,” in which a monopoly expert chooses for the nonexpert. And the lowest chance of expert failure exists under “self-rule or autonomy,” in which experts compete to provide advice to a nonexpert who chooses for themselves based, perhaps, on the advice they receive.

Expert silos are a further and important contributor to expert failure. Koppl (2018) does not explicitly discuss siloing as a source of expert failure, but it is made explicit in Koppl (2020a). Specialization allows us to all exist within our own silos. There are many benefits to the division of labor and knowledge, as highlighted most famously by Adam Smith, but there are dangers.

In the progress of the division of labor, the employment of the far greater part of those who live by labour...comes to be confined to a few very simple operations...The man whose whole life is spent in performing a few simple operations...has no occasion to exert his understanding, or to exercise his invention in finding out expedients for removing difficulties which never occur (Smith 1981, pp. 781-782).

Hayek put it more succinctly when he pointed out that an economist who is only an economist is a positive danger (1956). Both authors describe siloing, whereby one becomes so engrossed in one’s silo that one fails to consider, or may even be unaware of, other salient issues. As we discuss below, the COVID pandemic is rife with examples of siloing.

Situations where the expert has a monopoly of opinion, either through high start-up costs or through high barriers to entry, can increase the likelihood of expert failure. Certifications, degree requirements, or membership requirements can enforce homogeneity of opinion and contribute to expert failure (Callais & Salter 2020). Indeed, the goal of these barriers is often to create homogeneity of opinion (Azocar and Ferree 2016; Koppl 2018, pp. 56-67). The “role” of the Scientific Advisory Group for Emergencies (SAGE), for example, is “to provide “unified scientific advice” to the British government (The Scientific Advisory Group for Emergencies 2020). SAGE is not charged with conveying the range of scientific opinion to the British government. Its job, instead, is to provide a uniform opinion, “unified scientific advice.” But failure to heed dissenting voices can contribute to expert failure. Just as traditional monopolies may face less incentive to innovate and reduce costs, expert monopolies may be resistant to change in their opinions and even unintentionally squash necessary innovation or adjustment.

Similarly, when monopoly experts have the power to impose their opinion on an unwilling party, expert failure can arise. The “consumer” of expert opinion has no viable exit option, nor can they seek a second opinion. Neither can they effectively voice any objection. Exit and voice are the two primary ways one can signal failure to another economic agent (Hirschman 1970), and imposed expert opinion shuts off that communication avenue. With no practical way to signal, the expert may continue their failing actions, unaware that it is even failing.

Monopsony increases the likelihood of expert failure. When there is a single “Big Player” in the market for expert opinion, experts may shape their opinion (unintentionally or not) to align with the Big Player (Koppl 2002). For example, if a local crime lab is the only buyer of forensic opinion, then experts may be biased in such a way to use tests or theories that better align with the goal of the crime lab, such as a conviction (Whitman & Koppl 2010). Similarly, as a major employer and funder of monetary economists, the Federal Reserve influences the market for scholarly research in economics (White 2005). Even without unconscious bias, experts whose opinions and theories do not align with the Big Player may be excluded from the

market. Absent funding from the Big Player, they may not be able to cover their costs. They may also face fewer benefits to participating in the field due to network effects that increase the benefits of doing work that interests experts employed or funded by the Big Player.

4. EXPERT FAILURE DURING THE PANDEMIC: AN EXAMPLE OF FORECASTING

Experts from various disciplinary silos, including epidemiology, economics, public health, and psychology, have offered their opinions on the COVID-19 crisis. Sometimes they are paid to make quantitative predictions: How many new cases will we see? Will hospitalizations exceed capacity? How many people will die? Sometimes they are asked to explain what has happened so far. In other cases, they are asked to recommend actions that government officials, university administrators, business owners, and individual consumers can implement to reduce harms associated with the pandemic. These formally distinct positive and normative questions are often intertwined, and the same expert offers their opinion on multiple questions.

So far, many forecasts regarding the pandemic have been incorrect. Ioannidis, Cripps, and Tanner (2020) discuss various mistaken forecasts. As stated famously by statistician G. E. P. Box (Box, Hunter, & Hunter 1978), “The most that can be expected from any model is that it can supply a useful approximation to reality: All models are wrong; some models are useful.” COVID-19 modeling is no exception: as what is left out of the model can be as important as what is included. The more complex the behavior under study, the harder it is to model how manipulating a small number of variables—like mask usage and mobility—affects outcomes like deaths. Since social and biological phenomena are complex (Beckage, Kauffman, Gross, Zia, & Koliba 2013), the danger in social and biological modeling is often one of over-simplification.

Experts, in this case, simplify their models to make connections between policy-amenable variables and desired outcomes. One of the primary simplifications in pandemic modeling during the COVID-19 pandemic was to assume that societies are homogeneous. The assumption of homogeneity implies that anyone can infect anyone else with equal probability absent specific behavioral characteristics or regional barriers. On the other hand, societies tend to exhibit tremendous heterogeneity, particularly if one considers the most at-risk demographic during COVID-19: seniors in fragile health. Many of this demographic live in long-term care facilities (LTCFs) set apart from the general population. Visitors and staff comprise the relatively weak link between LTCFs and the general population.

As of January 7, 2021, over 37% of all COVID deaths in the United States were attributed to cases that originated in LTCFs even though less than 1% of the population live in these facilities (Harris-Kojetin et al., 2020). Note that 37% is the reported and not the actual number. For instance, in New York State, fatal COVID cases that originated in LTCFs but resolved in death when the patient was later hospitalized are not counted as deaths originating in LTCFs (Curiskis & Oehler 2021). LTCFs are relatively isolated from the general population, with visitors and staff the only links to patients from the general population. The probability of infection depends primarily on whether infected people are visiting or staffing the facility. Policy measures to reduce deaths in LTCFs would not do much to inform policy on general population transmission and vice-versa.

Similarly, in a report dated December 20, 2020, an average of 1 in 5 prisoners in the United States had been infected with COVID, about double the infection rate of the general population, and in some states, the proportion was sharply higher (Schwartzapfel, Park, & DeMillo 2020). As of the second week of January, prisons’ death rate was about 23% higher than the general population death rate outside LTCFs and prisons. Prisoners are arguably even more isolated from the general population than LTCF patients.

Therefore, assuming society is homogeneous tends to overstate the probability of members of the general population infecting patients of LTCFs and *understate* the protective effect in terms of reduction in deaths of policies targeting protections to LTCFs. By implication, the protective effects of policies like general quarantines will be systematically overstated by studies that assume society is homogeneous relative to targeting protections to the most vulnerable populations.

The lack of attention to heterogeneity may explain why COVID models tend to underperform in terms of predictability. A paper published June 30, 2020 by Chin et al. (2020) tested the accuracy of early models, in particular, the models constructed by the Institute of Health Metrics and Evaluations (IHME) (IHME COVID-19 health service utilization forecasting team, 2020), the University of Texas at Austin, and the Los Alamos National Laboratory, and found that only 10.2% of the predictions fall within 10% of the actual reported numbers. Ioannidis, Cripps and Tanner (2020), using data from many European countries, U.S. states, and Canada, found that early models wildly overshot the risk of infection fatality in populations under 65, particularly in populations under 65 with no underlying predisposing conditions. They note that one of the key wrong assumptions in the models studied was the assumption of homogeneity.

5. EXPERT FAILURE AND THE DYNAMICS OF INTERVENTIONISM

Expert failure directly interfaces with the dynamics of interventionism during a pandemic. (For a broad overview of the dynamics of interventionism literature, see Ikeda (2005)). Traditionally, the focus is on how interventionism within an economic dimension leads to more intervention given the initial interventions (predictably) fail (Mises 2011). Information choice theory helps us explain these dynamics and resolve part of the Misesian paradox of why interventions persist even after the initial failure(s). The experts cannot interpret signals from the catallaxy due to siloing. Indeed, they may not even be aware such signals exist.

Information choice theory and the dynamics of interventionism suggest that expert failure can have contagion effects as well; expert failure in one industry can spill over into other industries, leading to expert failure in those as well. For example, on the advice of the CDC, the Trump Administration invoked the Defense Production Act of 1950 to require firms to prioritize personal protective equipment (PPE) and COVID test kits for governmental contracts regardless of price paid. Additionally, to handle an anticipated shortage of tests, the CDC ordered that COVID tests only be given initially to those exhibiting symptoms or recently returned from China (Murphy 2021). Coupled with price controls, these actions led to the predictable shortage of such equipment in the market. As of September 6, nearly six months after the federal government invoked the Act, many labs face difficulties getting tests (Patterson & Simons, 2020). Additionally, randomized testing, a necessity to determine the spread of a disease through the population, was never conducted, partly due to the CDC's orders. The shortages of testing equipment created by the Defense Production Act's invocation help us explain these two seemingly different failures. Given the Act's goal was to increase the production of necessary equipment, but instead, it led to shortages as prices failed to adjust, we can reasonably claim the Act's invocation was an expert failure as the actual results deviated from the normative results desired by the experts. Nevertheless, testers' inability to get the needed equipment likely led to the decision (or non-decision) to not randomly test the population at any point during the pandemic. Consequently, no reliable data has been collected on the spread of the disease in the United States (Ioannidis 2020; Murphy 2021). Since policymakers use data on cases and deaths to justify lockdowns and their relaxation, the lack of reliable comparison data has, in turn, made these lockdowns arbitrary; the experts on public health do not have adequate information to inform their choices, which is increasing the likelihood of expert failure in those areas. We can see how an initial case of expert failure (invocation of an Act that causes shortages of equipment) can cause other failures in other seemingly unrelated areas (Murphy 2021).

6. FURTHER EXAMPLES OF EXPERT FAILURE IN THE PANDEMIC

We also have issues of expert failure when the expert deliberately misleads to achieve some larger goal. For example, Dr. Anthony Fauci has admitted that he has altered his recommendations to achieve some alternative goal on multiple occasions. His initial statement that masks were unnecessary for the average American, something which he did not believe at the time, was meant to prevent a shortage of masks early in the pandemic (Fauci 2020). Likewise, he has stated he has misrepresented the number needed to achieve herd immunity because he was afraid many Americans were hesitant about the COVID vaccine (McNeil, Jr.

2020). In both cases, we have examples where an expert failed to give proper advice aligning with his expert opinion on the matter.

Furthermore, the two examples just discussed revolve around issues of siloing as well. Fauci acted in the manner he felt was best from his expert opinion, but the issue is not solely an immunological one. Issues of PPE manufacturing and distribution are economic issues. Issues of how the public might react to this or that policy recommendation are matters of sociology, political science, and psychology. As an expert immunologist and advisor to the government, he necessarily had to play amateur economist, sociologist, political scientist, and psychologist. Unfortunately, his siloed knowledge led to undesirable outcomes. From an economic perspective, one way to alleviate shortages and help ensure goods go to where they are most valued is to allow prices to rise. However, price controls, coupled with the explosive demand for masks and other PPE once the recommendation to wear masks went out, guaranteed a shortage. Fauci, lodged in his silo, lacked the necessary knowledge and information to connect these dots.

As discussed above, monopolization of expert opinion can lead to or perpetuate expert failure. In the United Kingdom, SAGE has considerable monopoly power in providing the national government scientific advice on the pandemic. SAGE acts as a gatekeeper on what information and opinion can make it to the decision-makers in this capacity. This monopolization and control of information may be leading to poor decisions made by the British government. Some critics of the government have complained of on-again, off-again policies to fight Covid. Mark Harper, for example, has decried the “devastating cycle of repeated restrictions” (Blewett 2020). The vacillating opinion of a monopoly expert under the “rule of experts” contrasts with the steady regularity and predictability of the “rule of law” traditionally characterizing the Anglo-American legal system (Fallon, Jr. 1997).

7. DISCUSSION

The ultimate question is: how do we prevent expert failure? Given the economic framework we have developed here and in Koppl (2018), the primary method addresses institutional issues. Problems of siloing, monopoly, monopsony, and other conditions of expert failure can never be eliminated, but we can discuss institutional changes that better align incentives, and, more generally, improve outcomes.

The most considerable change that can occur, and occur rapidly, is increased competition among experts. Drawing on Milgrom and Roberts (1986) and others, Gentzkow and Kamenica (2017) show that when competitive experts are introduced into a market, the incumbents improve their information quality even if the newcomers’ information is relatively low in quality. To “win” the “business” of the advisee, experts will divulge more information in the presence of competition. Furthermore, as Bain (1956), Baumol, Panzar, and Willig (1982), Boudreaux and Folsom (1999) and others have shown, the mere threat of competition induces firms to behave as if they face a perfectly competitive marketplace, even if they are nominally a monopoly. In Anglo-American tort law competition among experts comes from the fact that both sides can call expert witnesses. Likewise, experts in the private sphere (like doctors, priests, mechanics) face competition from other expert opinion suppliers and strive to provide as much information as possible. Competition among experts is not totally absent in politics if only because politically opposed legislators may draw seek advice from competing experts. This form of competition among the experts is limited to be sure. But it may have some value in vetting alternative arguments. Unfortunately, the unavoidable monopsony power of a national government makes it impossible for an organization like SAGE to be just one competitor among many in a relatively free market for expert opinion. It seems possible, however, to *simulate* market competition within SAGE as Koppl (2020b) has proposed. A simulated market is not a real market, but it may be better than a system designed to provide “unified scientific advice.”

We have noted above that expert failure is less likely when the consumers of expert opinion can choose among various providers. The element of choice is critical in developing competition among experts. If experts can impose their opinion, the incentive to divulge information and achieve a desirable outcome is diminished. When consumers of expert opinion can decide which advice to follow, the expert will try to be

as helpful as possible. If the consumer cannot choose, the expert may tend to be more arcane. Drawing on Milgrom and Roberts (1986), Koppl and Cowan (2010, p. 254) explain why “Competition turns wizards into teachers.”

Competition is not a silver bullet, however. As Callais and Salter (2020, p. 73) note, “Ideas do compete, but oftentimes on margins unrelated to truth.” Experts may become enraptured with various ideas to the exclusion of others for reasons that may be entirely unrelated to how accurate or truthful they are. Success in the marketplace of ideas does not guarantee that the idea is more truthful than others. But we must avoid the Nirvana fallacy of comparing existing reality to imagined perfection (Demsetz 1969). Your reform may improve things, but it won’t bring on Nirvana. No matter what, experts will still fail. But every market failure also represents market opportunities. In part for this reason, market competition among experts tends to improve the quality of expert advice. The rule of experts makes expert failure more likely and “self-rule” makes it less likely. In other words, reforms that reduce expert power tend to reduce the chance of expert failure. We should value expertise, but fear expert power.

8. CONCLUSION

The Covid pandemic thrust us all into unfamiliar territory, which seems to have increased the demand for expert advice. However, as seen here, the market for expert opinion often features monopoly, monopsony, siloing, and other flaws that give rise to expert failure. These failures can result in inaccurate information, incorrect forecasts, and the implementation of costly and ill-advised policies and adaptations. While experts can help us survive pandemics, expert failure can make a bad situation even worse.

Correctly understanding expert failure during pandemics has several implications. First, it suggests that pandemic response cannot be administered by a benevolent despot that accesses a social welfare function and devises an optimal infection control policy. Experts and policymakers are human beings who interact within an institutional context. Realistic modeling of pandemic response requires placing policymakers and experts within the model and examining how institutions influence their actions and knowledge. Doing so allows us to understand situations where pandemic policy will not reach an optimum and even situations where expert failure and government failure may be worse than market failure.

Second, understanding expert failure suggests a variety of reforms to existing pandemic policymaking. Some policymakers rely on concentrated committees of experts who possess monopoly power and produce “unified scientific advice.” To reduce the risk of expert failure associated with monopoly, policymakers could consult more diverse groups of experts. They may also benefit by employing “red teams” tasked with critiquing the initial experts’ advice. This skeptical expert advocacy can help stress test existing expert opinion, resulting in more robust analyses.

Third, from a more long run perspective, policymakers should consider reforming science funding. When a research network relies heavily on a particular funding source, this may create expert failure through associated monopsony power (Butos & McQuade 2015; Scheall, Butos, & McQuade 2019). In his farewell address on the “military-industrial complex,” Eisenhower (1961) warned “The prospect of domination of the nation’s scholars by Federal employment, project allocations, and the power of money is ever present and is gravely to be regarded.” Future research should examine the market structure of funding for epidemiological and public health research.

Fourth, our theory suggests that disciplinary siloing can give rise to unrecognized expert failure. While familiarity with a specialized field is often necessary to understand, evaluate, and critique research, an expert from another field might recognize a problem that is not apparent from within one’s disciplinary silo. Koppl’s (2020b) suggestions for reforming SAGE include the requirement that competing teams of experts be multidisciplinary. “With multiple areas represented on each team, they would have been forced to deal with the complex interactions linking infection rates to other things that matter, such as joblessness, substance abuse, and suicide rates.” Epstein (2019) reviews evidence that outsiders and amateurs can often solve problems that stump siloed experts. Strategies to mitigate the harms of siloing include contests, crowd

sourcing, and grants requiring cross-disciplinary teams. Disciplines are specialisms. And the gain from specialization come from trade. In the end, then, openness and free intellectual exchange may be the key to mitigating the harms of expert siloing. To achieve such openness and free exchange, however, researchers must resist the call to unity issued by the American Association for the Advancement of Science (American Association for the Advancement of Science 2016). Without irony, they proclaim, “Scientist, unite!”²

A wealth of research questions remains to be answered when it comes to expert failure during pandemics. Future researchers could more closely examine the market structure of epidemiological and public health expert opinion. They could study the bidirectional influence between policymakers and experts to understand better the complex and entangled relationships between expertise and power. After the pandemic concludes, scholars could more closely examine whose predictions seem vindicated and whose do not, and then study the incentives and feedback mechanisms facing successful and unsuccessful experts. The crucial thing to do in all this research is to emphasize that experts are human and carefully study how fallible humans learn, research, advise, influence, and control one another within complex institutional environments.

NOTES

- 1 For example, see Polanyi (1941), Paniagua (2018), and Petracca & Gallagher (2020)
- 2 See timestamp 1:08: <https://youtu.be/Ja1TPIBqiP8>

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A Case Study in the Problem of Policymaker Ignorance: Political Responses to COVID-19

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Abstract: We apply the analysis that we have developed over the course of several publications of the significance of ignorance for decision-making, especially in surrogate (and, thus, in political) contexts, to political decision-making, such as it has been, during the COVID-19 pandemic (see Scheall 2019; Crutchfield and Scheall 2019; Scheall and Crutchfield 2020; Scheall 2020). Policy responses to the coronavirus constitute a case study of the problem of policymaker ignorance. We argue that political responses to the virus cannot be explained by assuming that the interests of policymakers were at loggerheads with those of their constituents at the beginning of the crisis. In order to explain the responses of policymakers, it is necessary to recognize the effects of relevant ignorance on their incentives to pursue different policy objectives. We discuss the knowledge that policymakers required at the start of the pandemic in order to deliberately realize the goal of limiting overall human suffering and the spontaneous forces that could have facilitated the realization of this goal. The problem of policymaker ignorance implies that policymakers have not earnestly pursued the goal of limiting overall suffering due to the novel coronavirus, but have repeatedly resorted to the pursuit of relatively less epistemically burdensome goals. The problem of policymaker ignorance explains why policymakers have focused primarily on limiting one kind of suffering—physical suffering due to the virus—and have mostly ignored related kinds of suffering, i.e., the economic, sociological, psychological, and physical suffering caused by policies to limit physical suffering from the virus. The problem of policymaker ignorance also helps to explain why policymakers relied on the relatively blunt instrument of economic lockdown rather than more focused protection policies, and why they continue to resort to lockdowns, despite the emerging scientific evidence of their ineffectiveness at mitigating physical suffering due to the virus.

Keywords: policymaker ignorance, political epistemology, lockdown policy, focused protection, political theater.

This might be sufficient to convince any reasonable person that as it was not in the power of the magistrates or of any human methods of policy, to prevent the spreading the infection, so that this way of shutting up of houses was perfectly insufficient for that end. Indeed it seemed to have no manner of public good in it, equal or proportionable to the

grievous burden that it was to the particular families that were so shut up; and, as far as I was employed by the public in directing that severity, I frequently found occasion to see that it was incapable of answering the end [...] In the execution of this office I could not refrain speaking my opinion among my neighbours as to this shutting up the people in their houses; in which we saw most evidently the severities that were used, though grievous in themselves, had also this particular objection against them: namely, that they did not answer the end, as I have said, but that the dis-tempered people went day by day about the streets; and it was our united opinion that a method to have removed the sound from the sick, in case of a particular house being visited, would have been much more reasonable on many accounts, leaving nobody with the sick persons but such as should on such occasion request to stay and declare themselves content to be shut up with them.

—Daniel Defoe, *A Journal of the Plague Year*, 1722

1. INTRODUCTION

Over the course of several publications, we have developed an argument that epistemic considerations are logically basic in human decision-making and an analysis of the effects of relevant ignorance on the decision-making process. In “Ignorance and the Incentive Structure Confronting Policymakers,” Scheall (2019) argues that the nature and extent of policymakers’ ignorance—their *epistemic burdens*—with respect to various policy objectives serve to determine what counts as an option worth consciously considering and where options are ranked in policymakers’ incentive structures. In “Epistemic Burdens and the Incentives of Surrogate Decision-makers,” Crutchfield and Scheall (2019) extend this analysis to other surrogate decision-making contexts where some person(s) must decide on behalf and ostensibly in the interests of some other person(s). In “The Priority of the Epistemic,” Scheall and Crutchfield (2020) develop this analysis further and argue that the incentive-determining nature of ignorance is a fully general fact about human decision-making. In *F. A. Hayek and the Epistemology of Politics*, Scheall (2020) considers the methodological significance for political analysis of ignorance, defends a methodology that assumes the ignorance of political decision-makers, and attributes a proto-version of this methodology to the Austrian economists, Ludwig von Mises and F. A. Hayek.

One response that we have occasionally received to this work is that its deeply philosophical (not to mention, psychological) nature somewhat obscures its practical significance. Some case studies are needed that illustrate both the effects of ignorance on decision-making in the real world and, thus, the significance of our analysis. We aim to begin to remedy this deficiency in the present paper.

We apply our analysis to political decision-making during the COVID-19 pandemic. We argue that several of the implications of the problem of policymaker ignorance—“the simple and, once it is first recognized, obvious fact that what can be deliberately achieved through political action is necessarily constrained by the nature and extent of policymakers’ ignorance, and their capabilities for learning” (Scheall 2019, p. 39)—have been on display during the pandemic. In particular, policymakers have aimed at goals that are relatively less epistemically burdensome than objectives that they might have otherwise tried to realize. Rather than trying to minimize *overall* (or *all-things-considered*) human suffering from both the virus itself and policy responses to it, policymakers have aimed primarily to mitigate physical suffering due to the virus and have mostly ignored the economic, sociological, psychological, and physical suffering due to their policy responses. Similarly, rather than adopting a focused-protection policy that would have required the identification and isolation of uniquely vulnerable patient populations, policymakers have opted to try to minimize physical suffering due to the virus via the blunt and comparatively simplistic tool of economic and societal lockdown. If our analysis is sound, then ignorance is an essential part of any explanation of these and other political decisions that have been taken during the pandemic.

2. THE LOGICAL PRIORITY OF THE PROBLEM OF POLICYMAKER IGNORANCE

In order to explain the decisions of policymakers in response to the COVID-19 pandemic declared by the World Health Organization on March 11, 2020, it is important to understand the role that ignorance plays in human decision-making. We have argued in a number of previous works that ignorance is logically prior to moral, prudential, pecuniary, and other normative considerations in decision-making (Scheall 2019; Crutchfield and Scheall 2019; Scheall and Crutchfield 2020; Scheall 2020; Crutchfield, Scheall, Rzeszutek, Brown, and Cardoso Sao Mateus Manuscript).¹ The fundamental problem of politics is not that policymakers may be inadequately motivated to pursue policy objectives in constituents' interests. The fundamental problem of politics is that *even if policymakers' motivations align with their constituents' interests, policymakers may not possess the knowledge necessary to deliberately realize relevant policy objectives* (Scheall 2019; Scheall 2020). This is the *problem of policymaker ignorance*: ultimately, the policy objectives that can be deliberately realized are limited by the nature and extent of policymaker ignorance.² Beyond the limits of policymaker knowledge lie policy objectives that can be realized only if luck, fortune, or other *spontaneous forces* of the appropriate kind(s) intervene to an adequate extent.³

The logical priority of the political-ignorance problem to the political-incentive problem is manifest in the fact that relevant ignorance can distort related incentives, motivations, reasons for acting, etc., but that motivations cannot alter the nature and extent of one's relevant ignorance (Scheall 2019, 2020; Scheall and Crutchfield 2020). The *epistemic burden* of a course of action is all of the missing knowledge, both knowledge-that and knowledge-how, that a decision-maker needs to acquire (i.e., to learn) in order to deliberately realize the goal of the action (Scheall 2019; Scheall and Crutchfield 2020).⁴ Courses of action with respect to which a decision-maker is relatively ignorant, i.e., courses of action that bear comparatively heavy epistemic burdens, either do not appear to her as options worth consciously considering or are discounted relative to courses of action with respect to which she is more knowledgeable. One who recognizes that they lack adequate knowledge to *X* faces a lesser incentive to *X*, other things equal, than one who knows that their knowledge is adequate to *X*; however, a strong motivation to *X* cannot affect one's ignorance regarding *X*. That one does not know how to fly like a bird makes courses of action that require flying like a bird less, if at all, attractive; that one may have many reasons to want to fly like a bird cannot make one any less ignorant with respect to it.

More to the present point, even if policymakers' motivations align with their constituents' interests, the comparative epistemic burdens of constituent-minded policies might be so heavy that such policies either do not appear to policymakers as worth conscious consideration or are discounted relative to other, less epistemically burdensome—and less constituent-minded—policies. Even if policymakers want nothing more than to be constituent-minded, they may not know enough to be constituent-minded, so they will not be (except by accident or spontaneously, as it were).

Policymakers who know that they do not know enough to realize a policy goal are, other things equal, discouraged from pursuing the goal and are incited instead to pursue *other* goals that they take to be more within their ken and control. We have argued elsewhere that when policymakers know that they do not know enough to realize a policy objective in constituents' interests, but know that they know enough to *engage in a media charade to appear to be pursuing constituent-minded objectives*, policymakers will tend to flatter to deceive their constituents (Scheall 2019, 2020). In other words, policymakers will tend to feign or *pretend* to pursue the constituent-minded objective, knowing that many constituents will not be able to distinguish earnest from pretended pursuit of the goal and that, for some constituents at least, *seeming* to pursue the goal is almost as important as realizing it.

If this analysis is sound, then it implies that, inasmuch as policymakers have recognized their ignorance of some relevant knowledge, policy responses to COVID-19 have been more political theater than earnest attempts to realize constituent-minded objectives. Policymakers may have not known enough to limit all-things-considered suffering from the virus (and from their attempts to limit suffering from the

virus), but they have unquestionably known enough to use the media to promote the appearance that they are trying to limit suffering from the virus.⁵ However, even if it is not the case that policymakers have purposefully played at constituent-mindedness during the pandemic, that they have recognized they are too ignorant to deliberately realize the relevant goal implies that they have tended to do *other things* rather than earnestly pursue the constituent-minded objective of limiting overall suffering from both the virus and their policy responses to it. Some of the policy measures adopted have been chosen because they were comparatively less epistemically burdensome than the alternatives and not because policymakers earnestly believed these measures likely to contribute much to minimizing suffering. Of course, that these policy measures may also have appeared to some constituents as earnest attempts to limit suffering is all to the benefit of policymakers.

Like all actors, policymakers are incented to pursue relatively less epistemically burdensome goals, other things equal. In the context of the COVID-19 pandemic, they have mostly acted accordingly. Ignorance is a necessary and is, in fact, we argue, the fundamental factor in any explanation of the policy decisions taken in the wake of the pandemic, especially the near-unanimous decisions of policymakers to lock economies down and to issue *de facto* (if not necessarily *de jure*) compulsory stay-at-home orders for all but “essential” workers instead of engaging in more limited, and focused, virus containment and patient-protection strategies.⁶

3. POLICYMAKER IGNORANCE AT THE START OF THE PANDEMIC

The COVID-19 pandemic would seem to be a case, if there ever was one, where the interests of policymakers were *prima facie* well-aligned with those of their constituents. At least, there is no reason to assume *a priori* that the initial concerns of policymakers regarding the virus and its effects diverged from those of their constituents. It seems reasonable to assume that no one, neither policymakers nor constituents, wished to incur on their watch or otherwise suffer either the direct health effects of the virus, or the deleterious societal aftereffects of policy responses to the virus. It was apparently in the interests of both policymakers and constituents to mitigate all-things-considered suffering from both the virus and policy responses to the virus. However, the problem of policymaker ignorance implies that the relative epistemic burdens that policymakers confronted with regard to this goal, as compared to the epistemic burdens of other possible policy pursuits, served to determine the policies they pursued.

The epistemic burdens of policymakers, such as they were at the time the pandemic was declared, with respect to deliberately realizing the constituent-minded goal of minimizing overall human suffering from both the virus and policy responses to the virus would seem to have been quite heavy, indeed.⁷ What was at stake was not merely the comparatively simple (if still complicated) objective of limiting suffering from the direct health effects of the virus, but the grotesquely complex goal of *both* limiting suffering from the virus *and, at the same time*, limiting suffering from the socioeconomic and other aftereffects of efforts (political or otherwise) to limit suffering from the virus.⁸ In order to deliberately realize this goal without assistance from learning, luck, fortune, or other spontaneous forces, policymakers needed knowledge adequate to the degree of social control required to bring about the constituent-minded result.

In particular, they needed sufficient theoretical knowledge from both the health sciences and the social sciences. Policymakers needed theories and models developed by medical researchers adequate to the kind and degree of social control required to deliberately realize the goal of minimizing suffering due to the direct health effects of COVID-19; and policymakers needed models developed by economists and other social scientists sufficient to minimize suffering caused by policies aimed to minimize suffering due to the direct health effects of the virus.

Of course, this problem was exacerbated by the fact of disagreement in the relevant fields about the adequacy of competing theories and models. As it happened, policymakers had access to various theories of public health and epidemiological models that aimed to predict the health effects of the virus, especially the number of deaths that would ensue.⁹ They also had access to social-scientific theories that implied some, if

perhaps not all, of the societal aftereffects of different policy interventions. However, policymakers would seem to have lacked the meta-theoretical knowledge required to choose appropriately from the rival theories and models in the relevant fields.

Two different, if intimately related, kinds of meta-theoretical knowledge were required. First, policymakers needed meta-theoretical knowledge concerning the predictive adequacy of theories in each field, i.e., they needed criteria for choosing an epidemiological model that yielded adequate predictions of relevant health-related phenomena, as well as criteria for choosing social science theories that yielded adequate predictions of relevant social phenomena, and they needed criteria for choosing models from each field that could be combined to yield theoretical knowledge adequate to the kind and degree of social control necessary to deliberately realize the goal of minimizing overall human suffering. In other words, policymakers needed to know *that* there were theories that could be combined in the required way and which of the extant theories satisfied this requirement. Second, *given* such theories and models from the relevant scientific fields, policymakers needed meta-theoretical knowledge concerning how these theories could be combined to realize the relevant goal, i.e., they needed another meta-theory of how epidemiological and socioeconomic phenomena interact. Policymakers needed to know *how* such theories could be combined in the required way.

If some combination of the extant public-health and social-scientific models was adequate to deliberately realize the goal of mitigating overall human suffering from both the virus and political responses to it, policymakers could not have identified this combination without the required meta-theoretical criteria of choice. It is not obvious where such meta-theoretical knowledge could have been found among the modern hyper-specialized sciences.¹⁰ Policy “experts,” such as they are, tend to be knowledgeable about the phenomena investigated by their respective specialized disciplines, knowledge they have acquired on the basis of *ceteris paribus* assumptions. There are relatively few, if any, policy experts about what happens when other things are not equal, when interaction and integration occur among phenomena as diverse as those investigated by epidemiology and economics. If this is right, then policymakers could only have stumbled upon an appropriate combination of theoretical knowledge from the health and social sciences accidentally, as it were, either via learning or through the intervention of other spontaneous forces.

The epistemic difficulties of policymakers otherwise inclined to aim at mitigating overall suffering from the pandemic did not end at their ignorance of the required (meta-) theoretical knowledge. Assuming all of this theoretical knowledge to be given to policymakers, they still needed empirical *data* concerning relevant phenomena that could be plugged into the given models to yield predictions adequate to the nature and degree of social control required to deliberately minimize overall suffering. Perhaps most important in this regard, policymakers required empirical knowledge concerning the susceptibility of various populations to infection and the variable symptomaticity of different populations. In other words, they needed accurate data concerning who was more or less likely to get the virus, and how patients might suffer from it once infected. Similarly, they needed empirical data concerning the susceptibility of different populations to the societal (and indirect health) aftereffects of various policy options: they needed to know who would suffer economically and along other relevant societal dimensions, and how badly they would suffer from various potential policy decisions.

Beyond this, *given* sufficient theoretical and empirical knowledge, policymakers still required the ability—the knowledge *how*—to manipulate relevant causal factors in such a way as to bring about the desired result. In effect, they needed to know how to control the course of events in the way implied by the predictions drawn from the conjunction of given theoretical and empirical knowledge. Without all of this knowledge, policymakers could not have negotiated a path to the constituent-minded result of minimizing overall suffering without learning, luck, fortune, or other spontaneous forces beyond their ken and control.

The spontaneous forces that might have intervened to either assist or foil the pursuit of the relevant goal would seem to have been of three kinds: 1) forces that might have either improved or degraded policymakers’ epistemic position relative to the required knowledge; 2) forces emerging from the private initiative of constituents, acting individually or collectively, that could have either manifested or prevented the

manifestation of effective means of approaching the constituent-minded goal, such as a vaccine, a convalescent antibody serum, an effective antiviral therapy, improved varieties of personal protective equipment, or methods of selectively protecting those most vulnerable to COVID-19; 3) forces emerging from the natural progression of the virus through the population, i.e., forces that might have either hastened or hindered the emergence of community (or “herd”) immunity.

The question of the relevant knowledge that policymakers actually possessed and of their comparative epistemic burdens at the start of the pandemic relative to the goal of minimizing overall human suffering is left as an exercise for the reader. Unless the reader can convince herself that policymakers possessed all of the required knowledge at the time the pandemic was declared, she must recognize the effect that this ignorance had on policymakers’ incentives, motivations, and reasons for acting and, thus, on their policy decisions. It was not that, at the start of the pandemic, policymakers wanted anything other than to minimize overall suffering. At least, there is no reason to assume *a priori* that their reasons for acting initially failed to cohere with their constituents’ interests. Rather, they did not possess all of the epistemic resources required to make the sort of rational tradeoff between the health effects of the virus and the aftereffects of policies aimed at limiting the health effects of the virus that an effective policy of minimizing overall human suffering required. Policymakers simply did not know how to realize the constituent-minded goal and, recognizing that their epistemic burdens were impossibly heavy in this regard, they mostly opted to aim to minimize only physical suffering due to the negative health effects directly caused by the virus and to largely neglect suffering caused by the aftereffects of their policies, while using the media to endlessly signal their constituent-mindedness.

A complementary explanation, one still in keeping with the priority of the problem of ignorance to that of incentives, is that some policymakers at least believed their own rhetoric and convinced themselves that they did know enough to act effectively in their constituents’ interests. Unlike policymakers who recognize their ignorance and, so, are inclined to pursue other, less epistemically burdensome, goals, policymakers who are ignorant of their ignorance falsely believe that they are knowledgeable enough to realize relevant goals and, thus, are (other things equal) inclined to pursue them (Scheall 2019, 2020). This “pretence of knowledge” (as Hayek [1975] 2014 called it), i.e., ignorance of their relevant ignorance, inclines policymakers to policy pursuits that they would be less inclined to pursue if they recognized their actually deficient epistemic circumstances. That is, policymakers who are ignorant of their ignorance are artificially attracted to policies that, unless spontaneous forces compensate for the goal-defeating consequences of their ignorance, are destined not only to fail but perhaps also to aggravate relevant circumstances.

A similar analysis can be given of the near-unanimous decisions of policymakers to try to minimize physical suffering from the health effects of the virus by mandating compulsory stay-at-home orders instead of by a policy of focused protection. Simply put, the epistemic burdens of a focused-protection policy were much heavier than those of total lockdown. The theoretical knowledge, empirical data, and know-how required to implement and enforce a policy of identifying and protecting individual members of uniquely vulnerable populations were far more extensive than the knowledge required to, as it were, simply turn out the economic lights.

4. POLICYMAKER IGNORANCE IN THE WAKE OF LOCKDOWN

At the time of this writing, we are ten months from the declaration of the pandemic and the subsequent implementation in many countries and locales of compulsory stay-at-home orders, and other lockdown measures. Considerable evidence has emerged over this time that such policies have done little to minimize physical suffering from the health effects of the virus (Chaudhry et al. 2020; Chin et al. 2020; Bendavid et al. 2021).¹¹ Yet, at the time of this writing, policymakers in several countries, states, provinces, and municipalities have implemented new or renewed former lockdowns. An apparent problem for the argument advanced here thus seems to emerge: Why have policymakers not learned that these policies are ineffective means of minimizing physical suffering from the health effects of the virus and adapted accordingly, especially given

the fact—which has always been obvious—of their deleterious societal aftereffects? Why do policymakers continue to try the same lockdown measures over and over again, rather than looking for potentially more effective alternatives?

As suggested above with regard to an earlier context, it is possible that some policymakers have been lulled into a pretence of knowledge concerning the effectiveness of lockdowns and, thus, that they have been more incented to pursue them than they would be if they acknowledged and appreciated the scientific evidence concerning their ineffectiveness. Perhaps some pro-lockdown politicians have come to believe (albeit falsely, if the scientific evidence is sound) that lockdowns are effective means of minimizing physical suffering from the health effects of the virus and their incentives have accordingly been distorted in favor of further lockdowns.

This may be true in some cases, but another explanation, still in keeping with the priority of the problem of policymaker ignorance, suggests itself. Once policymakers commit to a particular policy, the epistemic burdens that are relevant moving forward may be radically different from those that were relevant before a decision was made. Past policy decisions affect present and future epistemic burdens. In particular, unless policymakers *know* how to both alter the chosen policy course and avoid the consequences of acknowledging its ineffectiveness, the alternative of doubling-down on the existing policy is comparatively attractive. Thus, inasmuch as shifting course away from lockdown measures would mean acknowledging their ineffectiveness—and, thus, admitting that policymakers erred in implementing them in the first place, causing (or failing to avoid) more suffering than was necessary—something that policymakers do not know how to do painlessly, the priority of the problem of policymaker ignorance serves to explain the continuing political attractiveness of lockdown policies, despite the evidence of their ineffectiveness.

This problem would seem to have been exacerbated by the near-unanimous and, for all practical purposes, “once-size-fits-all,” nature of the lockdown policies implemented around the world. In principle and perhaps also in practice, policymakers could have used the pandemic as an opportunity to naturally experiment on a variety of virus-containment and patient-protection strategies in order to discover more and less effective means of minimizing human suffering. Instead, those relatively few locales, such as Sweden and South Dakota, that adopted less restrictive policies have been treated by pro-lockdown policymakers and their media cheerleaders as either idiotic grandma-killing pariahs or, more relevant to the present point, too culturally unique for their experiences to falsify the effectiveness of severe lockdown policies.

In effect, once policymakers committed to lockdowns in the spring of 2020, new relevant circumstances emerged and the goalposts shifted. The circumstances that policymakers confronted before committing to lockdown policies were radically altered once they made that commitment. The relevant goal was no longer the relatively simple (if still complicated) goal of minimizing physical suffering from the health effects of the virus, but the massively more complex goal of *minimizing physical suffering from the health effects of the virus while refusing to acknowledge that their past policy decisions failed to minimize physical suffering from the health effects of the virus.*

5. WHAT IS TO BE DONE?

The best explanation of the political decisions taken to confront the COVID-19 pandemic is not that policymakers’ reasons for acting failed to initially cohere with the interests of their constituents. The best explanation of the political decisions taken and, correlatively, of the decisions *not* taken, is that policymakers did not know how to effectively pursue the goal that they initially shared with their constituents: ignorance distorted their incentives to pursue the goal. By and large, as implied by the logical priority of the problem of policymaker ignorance over that of the problem of policymaker incentives, policymakers pursued significantly less epistemically burdensome goals than mitigating as far as possible overall human suffering due to both COVID-19 and its political aftereffects. With few exceptions, policymakers preferred the relatively epistemically simple goal of mitigating only suffering due to the direct health effects of the virus, while ignoring the more burdensome goal of also mitigating suffering due to their policies. Policymakers lacked the

material required to rationally trade off the direct health effects of the virus against the socioeconomic (and concomitant indirect health) effects of policies aimed at limiting the direct health effects of the virus.¹² Understanding that it was beyond their ken and control to both save lives and limit the other deleterious health effects of the virus, while also preserving traditional economic and other societal norms, policymakers opted to sacrifice (for the moment, one hopes) these established conventions.

Unfortunately, many policymakers were ignorant of knowledge required to deliberately realize even the more limited goal of limiting deaths and other sufferings from the direct health effects of the virus. From the array of potential policies aimed at limiting suffering from the health effects of the virus (while ignoring the economic and other societal aftereffects of their policies), policymakers tended to opt for the blunt—and comparatively epistemically simple—policy of economic lockdown and compulsory stay-at-home orders, rather than more epistemically challenging policies that would have required the identification and protection of uniquely susceptible patient populations. Faced with the epistemically burdensome problem of avoiding the consequences of admitting the failure of their past policy decisions, many policymakers continue to pursue such policies, despite the emerging body of evidence of their ineffectiveness.

We have pointed to a problem and argued for its fundamentality in political (indeed, in all human) decision-making. However, we have said nothing about what should be done about the problem. Of course, nothing of a normative nature can be inferred from the positive analysis in isolation, but, if we accept as more or less universal the twin assumptions that minimizing overall human suffering is good and that we ought to pursue the good as far as possible, various normative possibilities suggest themselves.

First, political analysis should proceed not from the assumption that policymakers and constituents are at motivational loggerheads, but from the assumption that policymakers may lack relevant knowledge and abilities (know-how) that constituent-minded policymaking requires, and that their epistemic burdens serve to determine the extent of their constituent-mindedness. As we have put the point elsewhere, apropos of David Hume's famous maxim to treat policymakers as knaves, "All [policymakers] are ignoramuses; the nature and extent of their ignorance serves to determine the extent of their knavery" (Scheall 2019, p. 43).

Second, it would seem reasonable to ask why policymakers are widely believed to be responsible for realizing goals that ignorance may well prevent them from deliberately realizing, like minimizing overall suffering from both a disease and their responses to it. How is it that, over the course of the history of political constitutions, policymakers have come to be assigned responsibilities that seem beyond their ken and control? There would seem to be a case, therefore, for revisiting the question of the social goals pursuit of which is best assigned to deliberate political action and those more effectively realized through spontaneous forces. In this project, political inquiry of the kind suggested in the previous paragraph, political analysis that starts from the assumption that policymakers may lack relevant knowledge and abilities—that it is always an open question in every decision context whether, in what relevant ways, and to what extent, policymakers are ignorant—would seem to be essential.

The nature and extent of policymaker ignorance with respect to constituent-minded goals like minimizing overall suffering from both some public-health danger and political efforts to mitigate its harmful effects serve to determine how much constituent-mindedness we get from policymakers.

NOTES

- 1 We offer two arguments for the thesis of the logical priority of the epistemic. According to the first, introspection reveals that the options persons consciously consider in any given decision context have been pre-consciously filtered and sorted according to the nature and extent of their relevant ignorance. According to the second, philosophers (and others) are presumably interested in determining the correct logical relationship between *ought* and *can*, at least in part, because knowledge of the correct relationship could be put to work for practical purposes, i.e., to segregate potential obligations (potential “oughts”) from non-obligations. We argue that, if this is right, then whatever the logical relationship between *ought* and *can*, if knowledge of this relationship is ever to be put to use for practical purposes, it must be that “can” means *deliberately can*. However, “deliberately can” just means *knows enough to*. Thus, the criteria of potential oughts and non-oughts is ultimately epistemic.

In addition to these introspective and philosophical arguments, in Crutchfield, Scheall, Rzeszutek, Brown, and Cardoso Sao Mateus (Manuscript), we offer empirical evidence from two psychological experiments that supports the thesis of the logical priority of the epistemic.
- 2 We use *incentives* and *motivations* synonymously to indicate persons’ *reasons for acting*. For our purposes, *policymakers* include everyone directly involved in the processes of deciding, designing, implementing, and administering policies, including elected and unelected officials, and the so-called “experts” that often advise them. *Constituents* are those persons in whose interests policymakers ostensibly make *policies*, which are sets of rules enacted (ostensibly) for the sake of constituents, who are supposed to conform to them, ostensibly in their own interests. A policy can thus be anything from, say, the ordinances of a local homeowners’ association to a constitutional plan for interplanetary government. Policymakers can be constituents: as far as the rule of law obtains, they are subject to the policies they make. In democracies, constituents can be policymakers to the extent that their votes figure in the policymaking process. Nothing of substance for the present analysis hinges on the fact that the relevant categories are not mutually disjoint.
- 3 A policy goal can be realized only if 1) at the time the policy is designed and implemented, and at every moment in its subsequent administration, deliberate realization of the goal falls under the ken and control of policymakers, i.e., policymakers possess all of the knowledge that deliberate realization of the goal requires, or 2) in the process of trying to realize the goal on an initially epistemically-deficient basis, deliberate realization of the goal comes under the ken and control of policymakers, i.e., policymakers *learn* whatever relevant knowledge they happen to lack, or 3) the required kinds of spontaneous forces beyond the ken and control of policymakers intervene to compensate for the goal-undermining consequences of their ignorance, i.e., the goal emerges despite policymaker ignorance. The latter two possibilities are not mutually exclusive with respect to each other, though each is mutually exclusive with respect to the first: the goal might be realized through a combination of improved policymaker knowledge or through the intervention of other spontaneous forces, but only if policymaker knowledge is not already adequate, in which case the goal can be realized directly and deliberately, without the need for learning or for the intervention of other spontaneous forces. Given that we can never know in advance the content of what we might learn in the future (or we would already know that content), the acquisition of new knowledge is guided by spontaneous forces. In other words, policymakers cannot *plan* or *design* to learn the absent knowledge required to realize a policy goal.
- 4 The epistemic burden of a course of action should not be confused with the *epistemic costs* of an action. Epistemic costs are incurred in the process of attempting to overcome epistemic burdens, i.e., in the process of trying to learn or acquire the missing knowledge, but there is no necessary or direct relationship between epistemic burdens and epistemic costs. Just as a given distance might be traversed in a more or less costly fashion, so might a given epistemic burden.
- 5 We are all by now familiar with the phenomenon of televised briefings in which presidents and prime ministers, state and provincial governors, and an array of their respective health advisors, glorify their efforts to combat the novel coronavirus and endlessly signal their exclusive, and all-encompassing, care for their constituents.

- 6 Such as the policy of “focused protection” associated with the, by now, infamous Great Barrington Declaration. See <https://gbdeclaration.org>.

It is telling that a common objection to a policy of focused protection is the allegedly greater difficulty, as opposed to blanket lockdown measures, involved in implementing and enforcing it (See <https://www.theguardian.com/world/2020/nov/03/chris-whitty-decries-great-barrington-plan-to-let-covid-run-wild>; <https://www.bbc.com/news/uk-politics-54802129>; <https://uk.reuters.com/article/us-health-coronavirus-britain-whitty-idUKKBN27J2CQ>). It should be noted that, from the perspective of the problem of policymaker ignorance, all of the difficulties that policymakers confront with regard to such a policy are ultimately epistemic in nature. There may be, for example, apparently logistical or legal constraints that seem to complicate a focused-protection policy. However, if policymakers *knew how* to remove or otherwise avoid them, such constraints would not complicate a more focused policy. All constraints on policies that policymakers *do not know enough* to remove or avoid are ultimately epistemic constraints, due to relevant policymaker ignorance. If policymakers *knew how* to deal with them, they would not be constraints.

Nothing in the present paper should be construed as a normative defense of a policy of focused protection. Our interest is to explain why certain kinds of policies were chosen and why other kinds of policies were mostly ignored, not to defend any of these policies as either uniquely appropriate to relevant circumstances or morally defensible.

- 7 We will simply note in passing the obvious part that policymaker ignorance played in failing to prevent the transmission of the virus from a localized event to a global pandemic.
- 8 On the aftereffects of policy responses to the pandemic, especially economic lockdowns and stay-at-home orders, see <https://collateralglobal.org>. That victims of economic dissolution are susceptible to negative health effects and to further deleterious consequences beyond the narrowly pecuniary is well-documented. Job loss correlates with higher rates of depression, suicide, substance abuse, homicide victimization, and poorer overall health-related quality-of-life (Milner, Page, and LaFontaine 2014; Pharr, Moonie, and Bungum 2012; Blakely, Collins, and Atkinson 2003; Lin and Chen 2018; Brugera, et al 2018; Kposowa and Johnson 2016; Norström et al 2019; Martikainen and Valkonen 1996; Brand 2015). The suffering of the unemployed relates not only to concern for their livelihoods, but relates also to concern for their lives.
- 9 On these models, see <https://www.nature.com/articles/d41586-020-01003-6>. For criticism of many such models, see <https://forecasters.org/blog/2020/06/14/forecasting-for-covid-19-has-failed/>
- 10 The complexity of the problem that policymakers confronted in trying to minimize overall suffering is manifest in the fact that the relevant meta-theories are not independent. The epidemiological model that is most predictively adequate in isolation, may not be predictively adequate, when integrated with the economic model that is most predictively adequate in isolation, and *vice versa*. Policies built on a particular epidemiological (economic) model might lead to societal (public-health) consequences that necessitate the choice of a different economic (epidemiological) model than would be appropriate were only societal (public-health) considerations pertinent. The meta-theoretical criteria of an appropriate epidemiological (economic) model might depend on the economic (epidemiological) model chosen. Similarly, adequately integrating two given epidemiological and economic models might depend on the compatibility of the models chosen and, thus, on the criteria of their choice.
- 11 For a list of over thirty papers showing little, if any, positive effect of lockdown policies, including the papers cited in the text, see https://inproportion2.talkigy.com/do_lockdowns_work_2021-01-15.html.
- 12 For a preliminary, if only partial, comparison of relevant costs and benefits, see Jenkins, Sikora, and Dolan (2021).

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The Other Knowledge Problem: Public Choice and the Marvels of Modern Medicine Shut Down the World

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Abstract: While the global COVID-19 pandemic of 2020 was far from unprecedented in severity relative to prominent historical outbreaks, its arrival in the wake of explosive growth in scientific understanding, epidemiology, information and communications technology has led to unprecedented political, economic and social disruptions. At the heart of the disruptions were problematic political incentives well-documented in public choice theory when faced with a classic knowledge problem of costly, imperfect, and nonexistent information. Politicians demanded immediate information in order to appear proactive, favoring particularly dire predictions from experts incentivized to oversell or be overconfident in their results. Resulting forecasts, most notably from the Imperial College London model, created public and media outcry for comprehensive and highly costly responses resulting in extensive global economic harm. While this fraught nexus of uncertainty, dispersed knowledge, and problematic political incentives has complicated government responses to many modern issues, three factors in particular magnified the resulting harm. First, the rapid spread of the virus spurred decisive government responses without the usual time for debate. Second, real-time mass and social media back-and-forth between responders, politicians, commentators, and individuals created their own ever-spiraling web of incentives and recrimination. Finally, and perhaps most importantly for future response to crises, the knowledge problem was likely worsened rather than improved by technological and scientific advances that presented a fast-moving scenario in the grey area between routine and historically catastrophic that resulted in large-scale confusion over the trade-offs at hand. In this study, we will investigate the interaction of information asymmetries, political incentives, and institutional constraints in bringing about the COVID-19 shutdown, and the implications of the same for our path forward.

JEL Keywords: B53 (Austrian), D04 (Microeconomic Policy), H00 (Public Economics).

1. INTRODUCTION

An emergency global initiative to tightly control movement outside the home at state/provincial or a national level is an effort that would have been impossible for governments to seriously attempt until quite recently. Advances in medical and scientific knowledge were necessary to treat disease and ultimately immunize populations. But more recent develop-

ment of computational methods in social sciences, communication, and information technology allowed government policy to lead and even dominate societal response to the Covid-19 pandemic.

If many of the achievements in fighting and treating Covid-19 are enabled by modern science and technology, many of the unprecedented political, social, and economic disruptions observed are inevitable consequences of the same complex, technology-driven society. Pennington (2020) for example highlights potential problems with government response to what Hayek (1967) classified as complex rather than simple phenomena.

At the heart of the disruptions were problematic political incentives well-documented in public choice theory when faced with a classic knowledge problem of costly, imperfect, and nonexistent information. Moreover, the advances in science and technology that enabled attempts for governments to act so quickly and comprehensively, as this paper argues, often created or exacerbated the disruptions experienced worldwide.

Many assume the primary constraint on even lower Covid-19 case rates and deaths is human compliance with government guidance or mandate. But the Covid-19 pandemic, as a case of 21st-century governments attempting to govern quickly, actively, and based on expert advice, demonstrates the limits to top-down attempts at control of complex societies.

We fortunately cannot observe any counterfactuals of things done differently in 2020, and this paper makes no claim to the superiority of any type of response especially with respect to cases and deaths. In the aftermath of Covid-19, it is the authors' hope that we can learn from successes, mistakes, and failures and do better in the lamentable event of a next time.

This article proceeds in five sections. Section 2 more specifically describes examples of recent scientific and technical advances along with an idealized version of the type of response many did and do think they make possible. The next sections then demonstrate how the same knowledge created or worsened problems at every stage. Section 3 discusses the Covid-19 pandemic's first observation and planning, with an emphasis on the well-known problem of government and experts. Section 4 discusses government implementation and maintenance of nonpharmaceutical (NPI) responses such as shelter-in-place orders (SIPOs) and business closures. Section 5 discusses issues arising in the ongoing unwind of these responses, concluding with their implications for pandemic policy.

2. A TECHNOLOGY-ENABLED GOVERNMENT RESPONSE

The Covid-19 pandemic of 2020 might be characterized as the first pandemic in history where mitigation efforts and response were first and foremost treated as matters of government policy. Governments, acting on the advice of epidemiological experts (discussed below) attempted to reduce the number of cases and deaths by actively controlling the movement of people outside the home through various direct and indirect channels (see section 4 below).

Social distancing and other SIPOs did not figure heavily into governmental or societal responses to the global influenza epidemics of 1957 and 1968-1970. Neither was the response to either pandemic heavily politicized, despite both killing millions worldwide and at least 80,000 and 100,000 in the United States (Hohnsbaum 2020).

Some recent scholarly works have attempted to discern the effectiveness of NPIs during the 1918 Spanish Flu pandemic by comparing them with precursor measures, including quarantines and school closures. While initial investigations of this type asserted the effective deployment of parallel policies at the local level in 1918 (Markel et al. 2007), ongoing research into this subject spawned a long-running dispute about whether modern analyses have accurately interpreted historical records (Barry 2007). Other case studies of the 1918 outbreak in Canada found that quarantine measures were largely ineffective (Sattenspiel and Herring 2003).

Remarking on this literature, medical historian John M. Barry (2009) conducted a comparative analysis of quarantines in military camps during the 1918 outbreak as a precursor to SIPOs. He concluded that

“Historical data clearly demonstrate that quarantine does not work unless it is absolutely rigid and complete...If a military camp cannot be successfully quarantined in wartime, it is highly unlikely a civilian community can be quarantined during peacetime.” More recent empirical analysis by economist Robert Barro (2020) concluded that NPIs in 1918 may have “flattened the curve” for peak influenza deaths in specific cities, but also had no statistically significant effect on overall influenza mortality—i.e. they were either insufficient to reduce death itself, or merely delayed rather than prevented it.

As a result of these prior experiences as well as regional data from smaller epidemics in more recent decades, a large body of epidemiological literature explicitly cautioned against SIPOs and similar heavy-handed lockdowns prior to the Covid-19 outbreak. A 2006 study by leading epidemiologists at Johns Hopkins University (Inglesby et al. 2006) strongly advised against “large scale quarantine measures”—a term they used synonymously with the modern SIPO measure. Reviewing the evidence from previous influenza pandemics, they concluded “There are no historical observations or scientific studies that support the confinement by quarantine of groups of possibly infected people for extended periods in order to slow the spread of influenza.” “The negative consequences of large-scale quarantine are so extreme,” they continued, “that this mitigation measure should be eliminated from serious consideration.”

A 2019 report on NPI measures for pandemic influenza (WHO 2019) offered conditional support for border restrictions, but strongly advised against “home confinement of non-ill contacts of a person with proven or suspected influenza.” “Most of the currently available evidence on the effectiveness of quarantine on influenza control,” they continue, “was drawn from simulation studies, which have a low strength of evidence.” When combined with the lack of empirical evidence and the high social costs of such measures, the WHO deemed them “not recommended.” The same report offered a conditional recommendation on optimally timed regional school closures, but similarly noted that “the quality of evidence [for such measures] is very low.”

A September 2019 report by the Johns Hopkins Center for Health Security (Nuzzo et al. 2019) reached similar conclusions on the effectiveness of NPIs. “In the context of a high-impact respiratory pathogen, quarantine may be the least likely NPI to be effective in controlling the spread due to high transmissibility,” they noted. Such measures would likely delay the spread of the disease, but not prevent it. Difficulties with localized quarantines during recent outbreaks of Ebola and SARS further attested to the “added difficulty of implementing such measures on a large scale.” Perhaps most notably, they warned that “implementation of some NPIs, such as travel restrictions and quarantine, might be pursued for social or political purposes by political leaders, rather than pursued because of public health evidence,” and urged the WHO to “clearly articulate its opposition to inappropriate NPIs.”

Likely reflecting this pre-2020 epidemiological literature, top US infectious disease administrator Anthony Fauci even cautioned against SIPO-style measures after China implemented them in the Wuhan region to control the Covid-19 outbreak (Kaufmann 2020). Speaking to CNN on January 24, 2020, Fauci remarked, “That’s something that I don’t think we could possibly do in the United States, I can’t imagine shutting down New York or Los Angeles...Whether or not [China’s lockdown order] does or does not is really open to question because historically when you shut things down it doesn’t have a major effect.”

By March 2020, Fauci had come to support the very same SIPO measures he deemed unlikely and ineffective less than two months prior in the context of China. Fauci’s changing position reflected a sudden and sharp shift in epidemiological opinion. By late March, large scale SIPOs became the preferred policy response to Covid-19 in almost all developed nations with only a few notable holdouts such as Sweden. The shift reflected the rapid ascendance of the previous minority position noted in the 2019 WHO report wherein the epidemiological benefits of such measures were calculated from simulation studies rather than tangible evidence (WHO 2019). The most influential of these simulations by far was the epidemiological model produced by Imperial College London (ICL), which directly induced the governments of the United Kingdom and United States to shift their policy responses over to large scale lockdowns (Adam 2020).

If large-scale, active, government-led social distancing was not a feasible option until quite recently, one reason is likely that neither governments nor any group in society had developed the combination of scien-

tific and technical know-how to observe the disease near its origin point in China, consult with each other and experts in a matter of days, and instruct entire populations to drastically alter their lives, again, in a matter of days.

Advances in hospital-based medical care required to treat the worst cases of Covid-19 are a mostly modern development. Modern ventilator-based intensive care, for example, is a development of the 1950s (Wunsch 2020). The capacity-constrained nature of the US Healthcare system with respect to ICU beds and ventilators was a frequently used justification for shelter-in-place orders (SIPOs) and the closure of businesses and other public gatherings (Gavin 2020).

Many would cite advances in the field of epidemiology as a top factor making active government response possible. As an empirical social science and influencer of policy, the development of epidemiology has mirrored economics. Both fifty years ago already made extensive use of mathematical modelling, but neither could incorporate significant amounts of real data until advances in computing.

Epidemiology, like economics, is also highly prone to expert failure. Epidemiological modeling of large, complex systems requires the modeler to make strong assumptions about the nature of the disease, the effectiveness of specific NPIs, and the likely course of transmission—all in the context of a high-uncertainty environment. If correctly calibrated to appropriate inputs, a model could theoretically anticipate the course of a pandemic with reasonable precision. Each uncertainty reduces the accuracy of the model though, and in the case of a novel virus the necessary inputs may amount to little more than guesswork.

The influential Covid-19 modeling out of ICL (Ferguson et al. 2020) is highly illustrative of this problem. Adapted from a 2006 influenza model by ICL team leader Neil Ferguson, their March 2020 model purported to predict the effects of a suite of NPIs at reducing transmission and mortality rates from Covid-19. NPI effectiveness in this model, however, is determined by its own assumptions about the rates at which specific measures such as school and business closures, social distancing guidelines, and ultimately sheltering at home alter the rate of daily contacts within the population and thus the chance of transmission. As ICL lacked observational data about these measures, their assumptions amounted to little more than rough guesswork.

To further complicate the matter, ICL's modeling derived from an earlier paper that omitted what would become a crucial context for Covid-19 transmission: nursing homes. As Ferguson's paper (Ferguson et al. 2006) from which the model derived noted, "Lack of data prevent us from reliably modelling transmission in the important contexts of residential institutions (for example, care homes, prisons) and health care settings." As we've now observed from Covid-19, such facilities represent an acute vulnerability for transmission. After one year of the pandemic, nursing homes account for almost 40% of all Covid-19 deaths in the United States (Covid Tracking Project 2020; *The New York Times* (McKinley and Ferre-Sadurni 2021) reported that this figure is likely an undercount due to inconsistencies in reporting from New York state, one of the hardest-hit locales). Similar patterns have been observed in other countries, and early data returns from the first wave of the pandemic confirm that country-level mortality patterns varied widely based on how successful they were at shielding their nursing home infrastructure from outside contacts (Ioannidis 2021).

Viewed in this context, the lack of a mechanism to account for nursing home transmission represents a significant expert failure in the ICL Covid-19 model, deriving entirely from mistaken or missing assumptions about the nature of its spread. Empirically tested performance of subsequent ICL model releases for other countries has painted a similar picture of predictive bias that severely overestimated weekly mortality (Friedman et al. 2021). While other models used more conservative parameters resulting in better, or at least more cautious, predictive ability, the experience with ICL as well as its preeminent role in shaping the global policy response directly attests to the intrinsic limitations presented by the rise of the modeling approach in epidemiology.

Also of crucial importance to government responses were even more recent advances in information and communication technology, broadly characterized as the suite of technology available to any home-based computer or smartphone user. Honigsbaum (2020) notes that in the 1950s and 1960s scientists were

unable to observe influenza viruses developing in Asia. Information technology was central to this first and every following step in 2020.

Fast communication between and among governments, experts, media outlets, and people was essential for the large-scale lockdowns first recommended by Ferguson et al in their paper released March 16, 2020 and implemented especially in the Spring of 2020. Some, including the Imperial College authors well-connected to governments, believed that millions would die if authorities waited merely days or weeks.

This suite of technology was also necessary for individuals to communicate and inform themselves while their movement was restricted to the home, and allowed some individuals to work. Without the practical and comfort-based benefits of technology, the costs of lockdowns would have been even higher, perhaps to the point of infeasibility.

This wide array of scientific and technological developments created an orthodox set of tactics to respond to the virus, including aggressive SIPOs or lockdowns of individuals at home except for pre-approved “essential” tasks, closure of businesses and most public gatherings, and individual behavior outside the home including mask-wearing and maintaining six feet of distance from others. For the most ardent supporters of this strategy, compliance and leadership appeared to be the main hurdles.

But the global response to Covid-19 was implemented in a complex world of heterogeneous individuals, dispersed and incomplete knowledge, politics, and social media. For example, building on the work of F. A. Hayek (1967), Pennington (2020) argues that: “while government action may be a justifiable response to the pandemic, there may be few systemic mechanisms that enable policymakers to avoid large scale errors and to assess the effectiveness of alternative policy measures.”

As the next sections discuss, many of the above technological advantages were at the heart of limits to implementing such tactics in the real world.

3. EARLY 2020: PLANNING AND EXPERT ADVICE

As noted in the previous section, the original ICL model for the US and UK presented a range of scenarios for the Covid-19 pandemic tied to the implementation of specific NPIs. Its baseline projections revolved around an admittedly unlikely but also catastrophic “do nothing” scenario in which an unmitigated pandemic ravaged both countries. Although ICL’s report stressed that even mild interventions could avert this outcome, press coverage as well as Neil Ferguson’s own public comments tended to stress its headline-grabbing death tolls. The unmitigated UK model projected over 500,000 deaths, whereas the United States model projected 2.2 million. As late as March 20th, Ferguson repeated the 2.2 million figure to a *New York Times* columnist and stressed that a “best case” scenario could perhaps halve that to 1.1 million (Kristof 2020). Although Ferguson did not specify mitigation scenario projections for the US in his published report, it too repeated an expectation of “1.1-1.2 million [deaths]” under a general mitigation scenario, barring a rapid increase in hospital capacity. Daily deaths in both countries were projected to peak around June 2020. One year after the Imperial model’s release, the US had recorded about 550,000 deaths and the UK had reached 125,000.

The political appeal of the ICL models came from a combination of this alarm and their prescriptive simplicity. By enacting successively stringent NPIs—social distancing, school and workplace closures, and ultimately successive levels of home quarantine—the death count projection in both countries could be dramatically reduced. Both the American and British governments adopted these recommendations, ultimately leading to the widespread adoption of SIPOs for most of late March and April.

The premise of these policies was their assumed effectiveness at reducing mortality, as neatly described and projected by the models. Execution presented challenges, but intuitively derived from the lockdown orders themselves. Governments can directly enforce a shelter-in-place order with varying degrees of cost, effort, and stringency. In theory, a government could post an armed soldier at every door in an attempt to make the lockdown almost “complete,” likely with both monetary and political costs too high to bear. The Wuhan region of China adopted extreme and militarized implementation that approached this level of

stringency. A greater amount of policy variation was observed in East Asia and the Pacific. Australia and New Zealand paired strict border closures with heavy-handed lockdowns. South Korea, Taiwan, and Japan used border measures, but otherwise avoided or strictly limited the use of lockdowns. Lockdowns became a preferred policy in most of the United States and Europe, albeit with one caveat. These western governments chose a markedly lower level of direct enforcement than China's Wuhan region, ordering populations home other than for "essential" reasons, then compiling lists of what "essential" businesses and other activities were.

Governments choosing to enforce SIPOs primarily through indirect means employed tactics including limiting the potential benefit of individuals leaving the home by forcing closed businesses not on "essential" lists and banning other public gatherings. Though governments may have had the ability to monitor and physically force individuals in their homes, they largely did not do so, and in fact generally expected people would leave their house regularly for "essential" activities. Businesses and public gatherings, fewer in number and far easier to observe than the movements of every individual, could be enforced by governments far more effectively and at lower cost.

With everyday businesses like grocery stores and gas stations often on "essential" lists, and "front-line" workers at these establishments and healthcare facilities cheered as heroes, SIPOs were never intended to be 100 percent complete—a fact underscored by the phrase "flatten the curve" to justify the orders.

This complicated mixture of government recommendations and orders to individuals, shutdowns of businesses and gatherings, and individual choice resulted in what in aggregate might be characterized by a percentage reduction in individuals' trips outside the home. Multiple factors contributed to these reductions:

1. Individuals might seek to avoid direct government or law-enforcement reprisal, perhaps in the form of ticketing or arrest.
2. Individuals might agree with governments' advice rather than being coerced by them, choosing to reduce trips outside the home.
3. There might be fewer places individuals wish to travel due to business and public closures.
4. Individuals may wish to avoid social reprisal, fueled indirectly by government action as well as the mass and social media climate.

Among the newly-imposed costs of leaving the home, the first—potential for reprisal by authorities directly on individuals for their decisions—is rendered next to impossible by the "essential" clause found in most SIPOs. Home-based SIPOs as constructed by governments in the United States and most of Europe could not and were not intended to eliminate all travel outside the home.

These governments were therefore left mostly with blunt-instrument tactics to enforce SIPOs indirectly. Regarding the second tactic, governments can serve as reliable repositories, curators, and broadcasters of information. They are also vulnerable to pitfalls such as their interaction with experts, discussed above, and due to the same advances in information and communication technology, will inevitably face both well- and poorly-intentioned competitors for the dissemination of information.

Indirect enforcement through mandatory closures of businesses and public spaces—more directly enforced—proved among governments' most reliable tools in reducing their populations' number of trips outside the home. Such closures came at phenomenal economic cost, which two economists estimated to be \$16 trillion (Cutler and Summers 2020). Contrary to the view of many, these costs were not wholly "unavoidable," and more decentralized and voluntary tactics by governments might have significantly reduced these costs, while, unlike the "do nothing" scenario of the Imperial College, also mitigating disease spread.

Suppose governments had not issued orders on business closures at all, and instead created voluntary guidelines for individuals to dramatically reduce their trips outside the home. On the disease mitigation side, outcomes could in theory be identical—a targeted percentage reduction in individuals' trips outside the home. But the economic costs, while remaining large, might have been substantially lowered.

Such a voluntary and decentralized approach would put to use the knowledge dispersed among individuals. Presumably, the trips outside the home individuals decide to take are those with the greatest benefit. Such decisions might have looked very different than they ended up in the Spring of 2020, when authorities mostly made those decisions for individuals through forced closures. In the alternative approach, business owners could observe demand and reduce their hours, even cooperating with communities on logistics that reduced people out and about while still allowing more of the economy to run.

Political incentives, however, prevented such tactics from authorities, even if lowering economic costs while delivering the same outcome in terms of Covid-19 cases and deaths. As the pandemic continued, opposing politicians would reap great gains from accusing an incumbent using the voluntary approach of not “doing enough.”

Such pressures would be magnified by the scientific, government, and media climate of the early 21st century, where people can read new cases and deaths every morning like sports scores and social media can quickly weave narratives that blame the severity of the pandemic on whoever one politically opposes.

Therefore, unlike 1957 and 1968-1970 where governments worried more active responses would scare populations (Honigsbaum 2020), the overall climate in 2020 was conducive to governments presenting the threat of the pandemic as starkly as possible and arresting economic activity to avoid or minimize factional criticism of not taking an active enough role. In the United States, a confused and misleading depiction of fatality rate estimates by Dr. Anthony Fauci in congressional testimony on March 11, 2020 likely led to an exaggerated perception of the disease’s deadliness, paving the way for a political response that catered to panicked emergency measures (Brown 2020).

4. UNWINDING PANDEMIC RESPONSES

Authorities implemented extraordinary measures that promised to drastically reduce the number of Covid-19 cases and deaths. Given that these measures were fundamentally limited by the knowledge and technology required to implement them, there exist strong incentives for leaders not to be first in rolling back the most visible responses. For example, the return of public gatherings, no matter how well managed, will inevitably cause at least some spike in cases. With major media outlets like the *New York Times* virtually shaming states with the largest weekly-moving-average increases in bright red as part of a prominent infographic, what governor would invite such criticism?

When governments did begin to roll back perhaps the most draconian and costly steps taken, the forced closure of most businesses and workplaces, the emphasis was once again on presenting themselves to the public as active and capable leaders as opposed to mitigating either virus spread or economic cost. Evidence of this bias may be found in public approval ratings of state governors from the start of the pandemic through the summer of 2020. Approval ratings in this period showed little discernible connection to successful public health performance at containing the pandemic—indeed, somewhat counterintuitively, a weak positive relationship appeared between higher mortality rates in a state and a governor’s approval rating for these months (Magness and Earle 2021). One possible explanation is that approval numbers reflected an action bias toward policy interventions, whether those interventions worked or not.

Most US states adopted phased reopening plans where selected categories of businesses were allowed to reopen on earmarked dates across weeks or months. Many of the selections of businesses for earlier or later dates appear arbitrary. For example, in Massachusetts, barber shops and pet grooming businesses were allowed to reopen in late May, while tattoo parlors and tanning salons were shut down until well into June (Gulker 2020). Similar arbitrariness afflicted the design and enforcement of specific SIPO policies. In Michigan, big box retailers were instructed to rope off “nonessential” product aisles such as gardening, sporting goods, and entertainment, while these items remained freely available in neighboring Ohio. In California, some local authorities began ticketing pedestrians on public beaches and even arrested a lone paddleboarder for entering the ocean during the early weeks of the SIPO policy. Far from basing their enforcement decisions on scientific evidence, police appealed to a newspaper interview in which a biologist speculated that

storm drain runoff had carried Covid-19 particles into the ocean where it could be stirred up by seaside breezes (Fry 2020).

In a final twist, public officials in several states began relaxing their second wave of lockdown measures in January and February 2021 amid signs of faltering political support for these policies, rather than evidence that the pandemic itself was waning. California Governor Gavin Newsom relaxed his state's prohibition on outdoor dining while facing the growing threat of a recall election, while New York Governor Andrew Cuomo announced the lifting of dining restrictions while facing a breaking scandal about his state's underreporting of nursing home fatalities the previous spring. In both cases, California and New York were posting significantly higher daily Covid-19 fatality counts at the time these orders were relaxed than they displayed several months earlier when they were first imposed (Palmieri and Court, 2021).

A final example of seeming arbitrariness occurred in late January 2021 when the Centers for Disease Control implemented an executive order requiring mask-wearing on interstate modes of transportation. Although the order was heralded at the time as a science-based policy, its actual effects were almost entirely redundant. Every major airline in the United States as well as Amtrak had existing policies requiring their customers to wear masks, dating to the previous spring. As an added complication, the epidemiology model invoked by the National Institutes of Health to justify the mask order was premised on an outdated survey from the early months of the pandemic, erroneously suggesting that fewer than half of all Americans regularly wore masks in public. More recent data placed the actual number at 80%, causing the model in question to severely overestimate the claimed benefits of the policy (IHME 2020 and Magness 2020).

Far from a carefully executed and science-based plan, these and other policies suggested a combination of political pressures, human error, and unwarranted pretensions of knowledge amid uncertainty became dominant factors in government decision-making. In general, governments made no attempt to cast such distinctions as anything more than a general feeling of what might be more and less risky, if not indeed completely arbitrary as part of slowing the overall process and flattening the curve. Although presented as science-guided policies, the arbitrary nature of state and local edicts, their inconsistent enforcement, and their changing justifications amid political pressures each gave the appearance of veering far astray from any grounding in scientific evidence or data.

But what appeared arbitrary to government planners may have dramatically increased the economic costs of the Covid-19 response. Again, the complete lack of allowance for heterogeneity along any dimension or local knowledge by business owners and customers was primarily to blame. Just like the shutdowns, governments could instead have worked with populations to limit trips outside the home with businesses learning, cooperating, and adjusting through a combination of public information campaigns, voluntary safety measures, and a preponderance of caution against hastily enacted measures that lacked clear scientific evidence.

It is difficult to avoid the conclusion that government overreliance on modeling for SIPOs and other NPI measures created a political path dependency around faltering projections. The central influence of the ICL model, as noted in the foregoing sections, is illustrative. The first clear signs of problems with the underlying design in ICL's approach appeared in mid-April when a team of researchers at Uppsala University in Sweden adapted Ferguson's US/UK model from March 16th to their own country's population and policy responses (Gardner et al. 2020). The Uppsala adaptation was intended to spur the Swedish government into following the route taken by the US, UK, and most of Western Europe by imposing stricter NPIs including a SIPO order. Their results—released on April 15—predicted a catastrophic scenario in which Sweden could exceed 80-90,000 deaths by the summer under its present course without a lockdown. Immediate adoption of these stricter measures, the authors continued, could dampen mortality to a best case scenario of just over 20,000 deaths.

Sweden did not alter course, thereby setting the stage for a natural experiment to test the Uppsala adaptation of the ICL model. Although Sweden experienced a severe Covid-19 outbreak, its mortality pattern fell well beneath even the strictest NPI scenario of the model. The country had just under 6,000 deaths by

mid-summer rather than the projected 80-90,000. After a year, Sweden had experienced 12,000 deaths, placing it below even the “best case” scenario anticipated under a lockdown.

Although the ICL team later distanced itself from the Uppsala adaptation of their model, their own subsequent forecasts continued to display a similar pattern of severely overstating expected mortality in the absence of SIPOs. On May 21, Ferguson’s team published a second model to approximate state-level reopening in the United States. Using five states chosen because of their populations and early outbreaks, the ICL model compared three scenarios: (1) retaining lockdowns in place, (2) a moderate reopening with a 20% increase in public space mobility from the SIPO baseline, and (3) a more aggressive reopening that increased mobility by 40%. In all five states their scenarios predicted a rapid spike in mortality by mid-July. New York, Florida, and California were each projected to exceed 1,000 deaths per day in the 40% scenario, and possibly even 3 to 5 times that amount on the upper confidence band (Unwin et al. 2020). The projections proved wildly inaccurate for all 5 states, not only during the summer but also the pandemic’s stronger second wave in the fall and winter months.

Despite the repeated real-time failures of their predictions, the ICL modeling scenarios remain a primary framework for NPIs almost a year after their release—including in several states that reimposed lockdowns in the fall, as well as subsequent nationwide lockdown cycles in the United Kingdom.

Values that honor human life as priceless are important and decent ideas underlying many societies, but we are used to expressing those values on a small scale, through medical treatment and research, for example. When the number of lives in question tragically pushes its way into the millions, some peoples’ instinct is to ignore the costs and impacts of measures taken to save lives, potentially causing even more harm.

Cost estimates vary wildly and must, like epidemiological projections, be approached with caution. In terms of pure economic output, the United States Congressional Budget Office predicts a loss of \$7.6 trillion over ten years in the US alone. Separating the impact of voluntary measures taken by individuals to Covid-19 versus SIPOs and business closures mandated by the government will be a matter for ongoing research. Devereaux (2020) finds evidence consistent with government measures adding substantially to economic damage, over and above the occurrence of the virus.

Even more difficult to measure but no less devastating are the costs stemming from the billions of individual disruptions worldwide. Bianchi et al (2020) project an unemployment shock two to five times greater than the average US recession. Mulligan (2020) predicts deaths of despair, stemming from suicide, drug abuse, and other mental health crises to increase 10 to 60 percent (Mulligan 2020). Preliminary statistics from the Centers for Disease Control already portend a troublesome pathway to recovery. Substance abuse deaths spiked at an unprecedented rate during the first three months of the Covid-19 pandemic and accompanying lockdowns (CDC 2020).

As one drills down from high-level data to ground-level human experience, it appears virtually everyone has experienced a unique disruption from policy decisions related to Covid-19. Family budget constraints have been altered, with parents forced to stay home with children, while outcomes from the virus can also be added to the tragic litany of problems that have impacted poor and underrepresented minority groups disproportionately.

5. CONCLUSION

Scholars and practitioners of public policy generally think in terms of trade-offs—the costs and benefits of proposed government actions. For most of human history, those trade-offs were less relevant with respect to medicine and public health—very little could be done. The bitter irony is that the development of science alongside other technology at last with Covid-19 presented societies with trade-offs for which they lacked the governance institutions, cultural values, and understanding of complex systems to process in a manner that wouldn’t ensure tremendous economic and social cost, while cases and deaths from the virus nonetheless rocketed to a level of historic tragedy.

The standard view on responding to Covid-19 seemed to mirror how a country would approach a major war—mobilization of resources, compliance, and sacrifice. A large number of those who believe the death toll could have been significantly reduced will likely blame a lack of such unity, enabled by opportunism and amplified by social media.

This article puts forth a different view—that the modern developments in science and technology that enabled these trade-offs any degree of feasibility also ensured governments doing tremendous economic damage to their countries, an overheated social-media climate that prevented sober discussion, and experts with the computing power (but not the understanding of the world) to give governments the badge of approval.

As the dissemination of vaccines reduces public concern and provides political incentives to end NPIs, there remains much to be learned that might help create more effective and less costly responses to inevitable future pandemics. Researchers will study these events for decades, an unprecedented and profound picture of governments and their people forced to create, implement, maintain, and unwind responses to a deadly crisis.

In today's climate, many are likely to take for granted that future improvement hinges on more and better government control and citizen compliance. Instead, we may have seen the breaking point for this model. With time and education, it is imperative that more people understand issues like dispersed knowledge and expert failure. Tragedies such as pandemics on the level of Covid-19 can never be fully eliminated—the challenge is to prevent understandable efforts to reduce lives directly lost in future pandemics from imposing side effects of grave cost on individuals, communities, and economies.

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The Rules of Reason: COVID-19, Buchanan, and Hayek

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Abstract: This paper presents a reassessment of the policy measures taken to combat the effects of COVID-19. It addresses the following question: does the threat of pandemic justify the sacrifice of legal and political principles for the sake of expediency? We do so by filtering the unintended consequences of price controls through the lens of constitutional political economy as understood by James Buchanan and F. A. Hayek. We argue that constitutional rules provide *rules for reason*. The reason for constitutional rules is not only to provide constraints on arbitrary discretion, but also to provide the *epistemic* preconditions that harness and guide the creative powers of individuals required for recovery from pandemic. We illustrate this point by reframing price controls as a violation of the U. S. Constitution, particularly the First Amendment. Thus, if prices are understood to be a form of communication across individuals, then upholding constitutional principles should not be abandoned but reinforced during times of crises.

JEL Classification: B31; B53; H11; H12

Keywords: COVID-19; F. A. Hayek; James M. Buchanan; Constitutional Political Economy.

INTRODUCTION

The COVID-19 pandemic ushered in an era of passing and utilizing already-existing “price gouging” laws to punish sellers of medical supplies, disinfectant wipes, food, and other commodities. On March 23rd, 2020, President Donald Trump issued the Executive Order on Preventing Hoarding of Health and Medical Resources to Respond to the Spread of COVID-19 (Exec. Order No. 13910, 2019). Two days later, on March 25th, the Department of Health and Human Resources issued the Notice of Designation of Scarce Materials or Threatened Materials (2020). These new laws accompanied a large list of already-existing state-level regulations including those in 36 different states (Ondeck and Tarr 2020).

Economists are familiar with the consequences that these laws will have in the real world. Standard supply and demand analysis reveals that when there is a shock of increased demand or decreased supply, prices are bid up to economize on a good for which the relative scarcity has increased. While said analysis is invaluable for describing the prediction of increasing relative price, it does not communicate the importance of the process of moving from the old

price to the new price. An examination of the importance of this process is a key contribution of Hayek (1945) who points out that changing relative prices act as a form of communication. For example, if the supply of tin falls for some reason, the subsequent rise in price leads the users of tin to know “that some of the tin they used to consume is now more profitably employed elsewhere and that, in consequence, they must economize tin” (Hayek 1945, p. 526). Since prices serve this function, Hayek argues, “we must look at the price system as such a mechanism for *communicating* information if we want to understand its real function” Hayek (1945, p. 526, emphasis added).

Despite the insights of Hayek, the United States judicial branch remains seemingly unconvinced or unaware of this Hayekian interpretation regarding the communicative role that prices play. The First Amendment of the United States Constitution declares that “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances” (U.S. Const. amend. I). In spite of this clear declaration that people should be able to communicate freely without legal repercussion, politicians have passed laws, like those enumerated above, which prevent individuals from communicating the knowledge embedded in prices.

If it is in fact true that price controls are effectively a violation of the First Amendment, what should be made of this? The main question we seek to answer is whether the threat of a global pandemic is a sufficient reason to ignore constitutional rules in the pursuit of mitigating the harm caused by the crisis. In order to answer this, we consider the role of rules and how undermining those rules can affect that role. We argue that rules play an important role in enabling individuals to use reason, aided by market prices, to generate plans and, therefore, violations of those rules inhibit the ability of individuals to solve the problems presented by the crisis.

In making our arguments we contribute to two distinct literatures. First, we contribute to the literature on the relationship between market interactions and communication as it relates to the law. We draw on various contributions to this literature including Alchian (2006 [1966]), Boettke (1998, 2018), Coase (1974, 1977), Lavoie (1986), and Sowell (1980) as well as legal cases in order to make a unique argument that price controls prohibit communication and, therefore, are in direct contradiction to the First Amendment. Similar to Lieberler and Alchian (2006 [1993]) we find incompleteness in the opinions of the Supreme Court which stem from incomplete definitions. Second, we contribute to the literature on the importance of rules from the lens of constitutional political economy, drawing from the work of Brennan and Buchanan (2000 [1985]) and Hayek (2011 [1960]). We do so by using the case of price controls during the COVID-19 crisis to illustrate how violations to constitutional rules can stymie attempts to plan and generate creative solutions to crises. In making this case, we are emphasizing the *epistemic* function of rules, specifically by generating the institutional precondition necessary for the context-specific knowledge that emerges only through voluntary exchange, and hence, the generation of exchange-ratios (i.e. prices) to facilitate plan coordination (see Boettke 2018). This also allows individuals to harness, guide, and adjust their creative powers in a manner that is effective for recovery from pandemic. The implication here is that following rules is *even more important* in the context of crisis when compared to “normal” times.

The paper will be structured as follows. In Section II we review the limited extent to which communication via prices is respected by the law, and we will argue that prices are, in fact, a form of communication which fall under the jurisdiction of the First Amendment. In Section III, we discuss the importance of having stable, predictable rules, especially in times of crisis, and apply this to our case of free communication via prices during the COVID-19 pandemic. Section IV concludes with implications surrounding the importance of freedom of expression in the marketplace for goods in future policy and research.

SECTION II: PRICES AS COMMUNICATION

Review of Literature and Judicial Precedent

At first blush, it may seem that our claim regarding the inherent relationship between the First Amendment and market pricing as a form of speech seems misplaced. However, by understanding first and foremost the *preconditions* of market pricing, our point will become clearer. Market prices are, first and foremost, an exchange ratio, or the terms in which two goods are exchanged. Such exchange ratios in a market economy take the form of money prices. However, the fundamental precondition for the emergence of such exchange ratios is private property, which is nothing more than a social relationship defining an individual's expected ability to exercise choices over goods and services in interaction with other individuals, including *the ability to exchange* (Alchian 1965). Implicitly, the formation of exchange ratios is protected by "the right of the people peaceably to assemble," since exchange behavior gives rise not only to communication in the form of prices, but its prerequisite, voluntary exchange, also embodies a peaceful form of social interaction. Though our claim seems to follow logically from a perusal of the First Amendment, we are not the first to observe an inconsistent application of the First Amendment.

Coase (1974) tries to explain a puzzle associated with two types of markets which he labels "the market for ideas" and "the markets for goods and services." The main point of interest in this paper relates to why the former market enjoys freedom from regulation under the First Amendment whereas the latter seems to be vulnerable to many different kinds of regulation efforts. Although Coase does not argue that the market for goods and services *should* fall under the First Amendment as communication, he does expand on his paper (1977) wherein the legal precedents surrounding the First Amendment and advertising are discussed extensively. These cases provide an important foundation for modern interpretations of the relationship between speech and prices, and, consequently, discussing them will be important for making our argument that prices are a protected form of speech.

Before we move into cases, it's important to note we are not the first to write on the epistemic role of prices as communication in the vein of Hayek. Horwitz (1992, p. 193, emphasis original) points out how the price system, "*extends* the range of social communication beyond the limits of language and the physical senses." Paniagua (2018) expands upon this point by arguing that money creates a new system of social relations which leads to the generation of complex, relational knowledge which acts as a guide for the generation of economic plans.¹ Likewise, we build off a growing literature which examines the relationship between institutions and disaster response. Pennington (2020) focuses on how the state has few systemic mechanisms to communicate the success of policies relative to the market. Candela and Geloso (2021) argue countries with more economically free institutions can more flexibly adapt to pandemics and illustrate this with 20th century influenza epidemics. Geloso and Murtazashvili (2020) examine how pandemic policies affect institutions and how this can change the effectiveness of pandemic response. We also build off of past literature which focuses on the difficulty of government institutions to respond to disasters such as Hurricane Katrina (Boettke et al 2007; Chamlee-Wright and Storr 2010; Sobel and Leeson 2006, 2007).

It's also important to point out that we are not arguing about the constitutionality of price controls based on the clause associated with compensation for regulatory takings. Drobak (1986) lays out that certain price controls, such as those associated with utility companies, have led to the judicial branch ruling that the regulated parties would need to be compensated under the regulatory takings clause of the Fifth Amendment. However due to variations in three conditions, "(1) the justification for the price regulation; (2) the duration of the regulation; and (3) the ability of a firm to withdraw from the regulated business" (p. 100), the judicial branch has argued most price regulations do not qualify as a regulatory taking. However, our argument centers more on speech than this related set of cases on regulatory takings.

The first case of significance is *Valentine v. Chrestensen* (1942), wherein the Supreme Court ruled that commercial speech was not protected speech and therefore could be prevented in public spaces. This precedent, if it had persisted, would be drawing a very clear line between the market for ideas and the market

for goods. Interpreted this way, there's certainly no clear case that price determination falls under First Amendment protections because *no commercial speech* would fall under its purview. In fact, Mr. Chrestensen even tried to avoid his prohibition by attaching an informational pamphlet to his advertisement. The Supreme Court ruled that although the information distribution would normally be protected, in this case it was not since the motive behind distributing it was to avoid the law against advertisement.

The precedent allowing regulation of commercial speech was chipped away over several cases. In *Bigelow v. Virginia* (1975), for example, the editor of a newspaper sold in Virginia advertised abortion services in New York. Virginia claimed this violated a law against encouraging procurement on abortion. The Supreme Court ruled against Virginia, claiming that, while it would not comment the extent to which advertising was protected by the First Amendment, it was a mistake for the Virginia Supreme Court to presume no advertising was protected. Since Bigelow was just making information available, the speech was protected.

The final case which struck down the precedent that commercial speech was an exception to First Amendment protections was *Virginia State Pharmacy Board v. Virginia Citizens Consumer Council* (1976). In this case the court ruled explicitly that commercial speech was indeed protected by the First Amendment. Justice Blackmun, writing the majority opinion argued against the “paternalistic” view of needing to regulate advertisement and offered an “alternative” view, which “is to assume that this information is not in itself harmful, that people will perceive their own best interests if only they are well enough informed, and that the best means to that end is to open the channels of communication, rather than to close them” (*Virginia State Pharmacy Board v. Virginia Citizens Consumer Council* 1976).

While commercial speech being protected is an important step towards prices also being protected, the Supreme Court still explicitly denies this possibility. The most relevant case for our discussion here is the case of *Expressions Hair Design v. Schneiderman* (2017). Expressions Hair Design challenged New York Attorney General Eric Schneiderman on, “law §518 [which] provides that ‘[n]o seller in any sales transaction may impose a surcharge on a holder who elects to use a credit card in lieu of payment by cash, check, or similar means.’” The challenge was based on the premise that the law prohibited merchants from advertising their price in a specific form, in this case being the advertisement of the price as “price plus surcharge.” By preventing this, New York prevents a form of expression. The majority opinion written by Justice Roberts makes this clear in stating:

What the law does regulate is how sellers may communicate their prices. A merchant who wants to charge \$10 for cash and \$10.30 for credit may not convey that price any way he pleases. He is not free to say “\$10, with a 3% credit card surcharge” or “\$10, plus \$0.30 for credit” because both of those displays identify a single sticker price—\$10—that is less than the amount credit card users will be charged. Instead, if the merchant wishes to post a single sticker price, he must display \$10.30 as his sticker price.

Even though the Court is ruling in favor of freedom in pricing here, it is made clear that this is done *in spite of the fact* that price controls are acceptable forms of regulation. In making our case, we will focus on what we consider to be the problems with the arguments made in favor of price controls by both majority opinion writer Justice Roberts as well as a concurrence by Justice Breyer.² In order to do so effectively, we will first highlight how prices are forms of communication.

Protection for Prices

Hayek’s aforementioned paper (1945) provides the basis for which we argue that prices are not only a form of communication, but, rather, prices are *the* form of communication for specific types of knowledge. Hayek rightly describes prices as:

[A] kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement (Hayek 1945, p. 527).

The change in prices which occur throughout an economy convey the knowledge of buyers and sellers in the system. In fact, the telecommunication is so effective that the individuals in any given transaction need not even know all the information which the system itself communicates. That is, the explosion of an oil rig isn't information that consumers would have to know when filling their tank. The higher price communicates the additional importance of economizing the increase scarcity caused by the shock. However, unlike a text or a phone call, the price system is a means of communication with no obvious substitute. There are two reasons why this is the case.

First, the knowledge communicated by the price system does not exist absent the use of the price system. When a seller sells or a buyer buys, they are revealing their preference for what they receive from the transaction over what they gave up. If someone buys a bottle of hand sanitizer for \$20, they communicate that they value it at least more than the \$20 used—else the transaction would not occur. The knowledge of revealed preference cannot be communicated in any other fashion. Imagine, instead, a price control has forced stores to sell hand sanitizer for no more than \$5 a bottle. Assuming this price control is below the equilibrium price, there will be a shortage. You can imagine a scene of a manager deciding who among the several customers to sell the last bottle to. You could ask them to communicate what their willingness to pay would be, if there were no price control, but it seems clear this will not yield the same knowledge. Since customers pay \$5 regardless of their willingness to pay, it seems clear there would be an incentive to overstate what your willingness to pay would be. This makes our point clear. The knowledge of willingness to pay is created simultaneously with its communication during the process of a transaction. Preventing this process via price controls makes this communication illegal.

In response to the potential for price allocation to determine the distribution of 3M masks, an *Economist* article from April 2020 argues that, “there is no doubt now that [3M] masks are most essential for medical workers” (Many Economists Defend 2020). While it certainly seems true that medical workers will value masks more (and this will likely be reflected in hospital's willingness to pay for masks) it seems unclear, on the margin, whether a person who has a high risk for death from contracting COVID-19 would get less value from avoiding COVID-19 than a hypothetical medical worker with low mortality risk. It seems that for someone to have no doubt, they would need to be able to make interpersonal utility comparisons. The price system, however, avoids this issue by allowing individuals to communicate willingness to pay, rather than leave it up to speculation.

Second, as Hayek argues, market prices are important due to their ability to communicate, “the knowledge of the particular circumstances of time and place” (Hayek 1945, p. 521). There exists knowledge in the world, sometimes referred to as tacit knowledge, which is characterized by the fact that it is unable to be codified. For example, the knowledge needed to ride a bike is not something that is clearly transmittable. Although instructions can be written down for how to ride a bike, the actual riding involves knowledge beyond listing simple steps.³

To return to our previous example, exactly how could a store manager determine the weight of concern that the son or daughter has for an elderly parent when they seek to buy hand sanitizer? Insofar as this tacit knowledge exists, buyers and sellers account for it in their purchasing decisions. As such, the price of a good communicates the tacit information associated with thousands of buyers and sellers of the product. An individual who has tacit information which makes acquiring hand sanitizer more urgent can bid up the price, and in doing so they communicate the knowledge without having to codify it. Again, we see that price controls make communication of a specific form of knowledge illegal. Since this tacit knowledge cannot be codified, it cannot be communicated with language, spoken or otherwise. By preventing prices from adjusting, price control laws serve as a violation to the First Amendment.

With these two examples in mind, we can consider the shortcomings of the written opinions of the Supreme Court Justices to argue that price controls are not violations of freedom of speech. In Justice Roberts's argument in *Expressions Hair Design v. Schneiderman* (2017, p. 8-9), he states:

§518 is not like a typical price regulation. Such a regulation—for example, a law requiring all New York delis to charge \$10 for their sandwiches—would simply regulate the amount that a store could collect. In other words, it would regulate the sandwich seller's conduct. To be sure, in order to actually collect that money, a store would likely have to put "\$10" on its menus or have its employees tell customers that price. Those written or oral communications would be speech, and the law—by determining the amount charged—would indirectly dictate the content of that speech. But the law's effect on speech would be only incidental to its primary effect on conduct.

However, Justice Roberts does not contend with the fact that such a price control would directly regulate communication. This is because, as mentioned above, conduct and communication via the market telecommunication system dovetail. Both communication of revealed preference and the tacit knowledge embedded in that revelation are directly regulated by price controls. Justice Roberts's argument falls short because it views market conduct not as a form of telecommunication device, but as no more than the conduct associated with goods and money changing hands. Yet, even under this stricter interpretation, conduct associated with exchange is nevertheless protected by the First Amendment under the right of the people to peaceably assemble. Ironically, earlier in his opinion Justice Roberts cites the District Court which ruled in the favor of the merchants saying, "draw[ing a] line between prohibited 'surcharges' and permissible 'discounts' based on words and labels, rather than economic realities" (581 U. S. ____ [2017], p. 4). Whether or not Justice Roberts appears to be labeling the market process as conduct rather than acknowledging the economic reality of its communicative nature, both interpretations would still fall under the protection of the First Amendment.

Interestingly, this conduct verses speech dichotomy problem was also addressed indirectly by Alchian (2006 [1966]), where Alchian argues that government cannot protect a person's right to say something without some reference to property rights. That is, in order to guarantee the right to communicate in a place, individuals must have property rights associated with that place. In a public space, that means granting individuals the exclusive right to use public property in some manner (conduct) for communication to be possible. Alchian points out public authority "can always declare some particular speech to be an inappropriate use of its property" (1966 [2006], p. 597). Sowell makes a similar point to distinguish what the First Amendment can grant in saying that "[f]ree speech' in the sense of speech free of governmental control does not imply *inexpensive* message transmission, any more than the right of privacy implies subsidized window shades" (1980, p. 241, emphasis original). Since speaking requires certain conduct with reference to property, Alchian continues out succinctly that the only true denial of free speech is allowing, "no restriction against individuals using resources *other than their own* for the purposes of communication" (p. 595, emphasis original). Like Alchian, our argument points out that communication requires conduct of a certain type, and in this unique case such communication emerges out of context of exchangeable private property.

The conduct vs. speech dichotomy, however, is not the only bases by which Justices argued against First Amendment protections for pricing in *Expressions Hair Designs v. Schneiderman*. Justice Breyer concurs with Justice Roberts, but for explicitly different reasons. Justice Breyer argues that regulations of speech should avoid being made on the basis of the conduct versus speech dichotomy. Instead, he argues in his opinion that regulations should be judged according to how closely they interfere with the interests primarily protected by the First Amendment. Justice Breyer makes this clearer by arguing, "[if] a challenged government regulation negatively affects the processes through which political discourse or public opinion is formed or expressed (interests close to the First Amendment's protective core), courts normally scrutinize that regulation with great care" (581 U. S. ____ [2017], p. 14). On the other hand, Justice Breyer points

out that, since legislation about commercial transactions “does not significantly affect the interests that the First Amendment protects, we normally look only for assurance that the legislation ‘rests upon some rational basis’” (581 U. S. ____ [2017], 15).

However, it is clear from previous discussion that price controls do, in fact, negatively affect the process through which public opinion is formed or expressed. The opinion of American citizens about how they desire resources to be allocated is transmitted through the price system. Further, the price system is not just a communicative tool that is chosen among many. It is *the* tool through which the citizens communicate their tacit knowledge in the market process. In that respect, it could perhaps be argued that protection from pricing regulations is even more important than protection of some other form of speech, such as picketing, because the process which is impacted by price controls has less substitutes. Protests communicating dissatisfaction with politicians can often take spoken, written, or even silent forms. Communication about tacit knowledge relevant for resource allocation does not have these alternative channels, since it is *only* in the context of exchangeable private property rights that such knowledge can emerge and be communicated via the creation of exchange ratios (i.e. market prices).

It’s important to point out that this argument has both a positive and normative element. We contend that, given a proper understanding of the communicative role of prices and the comments made by Justices in previous cases, that *consistent* interpretation of the Constitution implies that price controls are a violation of free speech. This is a positive claim. It’s possible that someone who does not understand or agree that prices are a form of communication could disagree with this positive claim. However, we recognize that attached to this positive claim is a normative assumption that Justices should apply their logic consistently from case-to-case. As such, our argument is a positive case resting on this normative foundation.

Taking now, as our point of departure, that price controls are, in fact, violations of the First Amendment of the U.S. Constitution, we turn to the primary question of importance of the paper. Given that price controls are violations of legal principles, are violations of this nature desirable for expediency’s sake when crises occur?

SECTION III: THE RULES OF REASON

Rules’ Role in Reasoning

In order to decide if violation of rules can be warranted, we must first have a good understanding of the purposes and benefits of rules to those who live under them. As Hayek (1958, p. 241) states, the “intelligent use of reason in the ordering of human affairs is that we learn to understand what role it does in fact play and can play in the working of any society based on the co-operation of many separate minds.” This requires us not only to understand the reason for rules, but more importantly for our purposes here, the rules that aid and facilitate the use of reason in a peaceful and productive manner. Brennan and Buchanan (2000 [1985], p. 17) offer two different reasons to have rules. The first reason is that rules allow individuals not only to act without intentionally harming each other, but also “provide to each actor *predictability* about the behavior of others” (emphasis original; 2000 [1985], p. 10). The rules of the road are a good example here. A world where everyone drove on both sides of the road as they saw fit would be chaotic. In such a place, individuals would have neither the incentive nor the knowledge necessary to avoid accidents. Even if someone, for some reason, prefers a world where the rule is to drive on the left side of the road, that person will still be better off with a right-side rule when compared to no rule. The rule gives information about the behavior of others which is used in making plans. Hayek (1960 [2011]) echoes this sentiment in saying:

The rationale of securing to each individual a known range within which he can decide on his actions is to enable him to make the fullest use of his knowledge, especially of his concrete and often unique knowledge of the particular circumstances of time and place. The law tells him what facts

he may count on and thereby extends the range within which he can predict the consequences of his action (pp. 224-225).

The second reason pointed out by Brennan and Buchanan is that rules enable individuals to harness their creativity to their benefit as well as to the benefit of those around them. Imagine, for example, a road characterized by driving on the right side of the road where someone turning left must yield to oncoming traffic. In such a world, left turns are slower and more dangerous. Frequent drivers who are in vehicles especially prone to tipping, such as mail carriers, may experience significantly higher cost in turning left. In this case, it may be valuable for mail carriers to plot their routes such that they only engage in taking right turns rather than taking left turns. If these routes are successful, not only do the mail carriers' lives improve due to saving on medical and mechanical issues, their customers also experience the benefit of their packages being delivered on an optimized route. Without rules concerning the right of way, for example, the benefits of this creativity are never unleashed. Hayek (1960 [2011], p. 62) also echoes this sentiment. "Freedom" Hayek explains, "presupposes that the individual has some assured private sphere, that there is some set of circumstances in his environment with which others cannot interfere." In other words, freedom rests on assured rules. Hayek goes on to argue that freedom has enabled individuals to utilize their unique knowledge to make achievements possible which are, "greater than any single mind can foresee" (Hayek 1960 [2011], p. 82).

Rules, then, serve the important function of providing members of society with information. They aid individuals in their use of their reason through the formation of plans using that information. Therefore, as Buchanan and Brennan (2000 [1985], p. 13) point out, "it follows that any change in the rules *destroys* information" (emphasis original). Any rule subject to frequent and arbitrary change will obviously cease to be a rule at all, mitigating the purpose of rules. More importantly, however, since freedom of action is predicated on the ability to adapt and adjust to unforeseen circumstances, this also implies that "we will rarely know what we lose through a particular restriction of freedom" (Hayek 1973, p. 56) that results from a violation of rules.

Constitutional Rules

Despite the clear benefit of rules, what is the nature of political decision-making that creates a bias towards expediency over rules? First, the fact that rules must be created and are not automatically adopted seems to imply an accompanying cost of enforcement as well as pre-commitment to enforcement of such rules. This represents a concentrated cost upon political officials, the benefits of which are dispersed across the masses of the population, applied without any foresight as to which particular individuals or which particular groups of individuals will benefit from such rules. As highlighted by Olson (1965), the nature of political decision-making, however, is to pass legislation that creates concentrated benefits among well-organized and well-informed special interest groups, the costs of which are dispersed and, therefore, remain largely unknown to the ill-organized and ill-informed masses of the population. The logic of political decision-making, therefore, creates a tendency towards expediency, since the "direct effects of any interference with the market order will be near and clearly visible in most cases, while the more indirect and remote effects will be mostly unknown and will therefore be disregarded" (Hayek 1973, p. 57). Moreover, because political officials are not residual claimants in their use of discretion, "[w]e shall never be aware of all of the costs of achieving particular results by such interference" (Hayek 1973, p. 57).

Because of the benefits associated with the expediency gained by breaking the rules, Brennan and Buchanan (2000 [1985], p. 82) illustrate the need to pre-commit to behaving a certain way in the future. They do this with the illustration of Ulysses having himself bound to the mast of his ship. He knows he will be unable to resist the urge to break the rule of not jumping off the ship to go to the sirens, so he creates a sort of "constitution" which binds him to follow his rule.

Another way to think of the issue is with a sort of two period game. In this game a student has the ability to take a difficult class (Class A) which will be valuable to any future employer but could result in failure, or an easy class (Class B) which will provide less additional value but will be impossible to fail. In the first period the Student must choose between A and B. If the student chooses B, the class is guaranteed a payoff of 20, because the student is guaranteed to pass no matter how many hours are spent studying. Class A, on the other hand, is more complicated. If the student chooses to take Class A and study, a payout of 100 can be received. However, it's also possible that the student will choose Class A but will then spend studying time watching Netflix instead. The student, realizing weakness of will, can perhaps only succeed at obtaining the payout of 100 by allowing his or her parents to temporarily change the Netflix password, for example. The more certain the student is that taking and passing Class A is possible, the more likely it is that "investment" (in the form of taking the more difficult class) will take place.

The importance of committing to constitutional rules in collective decision-making becomes even more clear when we consider the last example. In the example, the decision to take on beneficial long term plans was dependent on the likelihood that the individual would succeed once Class A was selected. And, although the probability of succeeding at A is certainly less than the 100% chance of succeeding at B, the student still ultimately has some degree of control which allows them to make passing likely enough that the long term planning is worth it. However, with regards to public choices, the same does not hold. As Brennan and Buchanan (2000 [1985], p. 90) point out, individuals are "less capable of predicting the collective response to the choice options predicted to be confronted in future periods than of predicting private, personal reactions."

This same principle can be extended even one step further to answer our paper's ultimate question. Brennan and Buchanan continue on to say, "as a general principle, rationality precepts should dictate an inverse relationship between the predictability of future period 'choices' and the desirability of constraining the set of future-period options" (Ibid). This is simply an extension of the previous logic. As uncertainty about the future increases, the value of assurance that constitutional rules will be followed also increases. Following the rules allows for the clear communication of how the game will be played in the future, helping individuals plan and unleash their creativity. It's difficult to imagine something that contributes to an increase in unpredictability more than a global pandemic. The fear and heightened calls for expediency threaten the information about the patterns of social interaction that are generated by rules. However, it is during an uncertain time like a pandemic when individuals need the ability to plan more than ever. Stability in rules leaves individuals free to adapt and adjust to such unforeseen circumstances according to their own particularized knowledge of time and place. As our aforementioned inverse relationship dictates, not only should we uphold constitutional rules when a crisis increases unpredictability, reliance on rules should also be reinforced even more clearly than before.

In the case of the United States during the COVID-19 pandemic, upholding our constitutional rules means literally upholding our rules framed in the U.S. Constitution—namely the First Amendment. Prices transmit knowledge, which individuals use to economize on scarce resources. The conduct of buying and selling is a form of communication that transmits knowledge that can only be transmitted in the process of exchange itself. Individuals rely on this knowledge to not "crash into" one another. They participate in the system where each person communicates the urgency of their wants such that others don't take goods they more urgently desire. Access to prices also allows individuals to be creative. If a particular food or resource is becoming more heavily demanded, the increase in scarcity (and therefore price) will signal to others that they need to create alternatives by adjusting within their budget.

But this system of rules requires adherence to the rule of law. If U.S. legislatures and judiciaries are granted the privilege of arbitrarily enforcing of rules at their whim, or ignoring them altogether for the sake of expediency, the ability of individuals to form plans and reliable expectations about the behavior of other individuals is called into question. In this case, it would make sense for rational choosers to substitute from longer term decision-making into shorter term decision-making. Hayek (2011 [1960], p. 337) goes further than claiming price controls violate a particular constitution and argues that price controls cannot permit

a functioning free society while maintaining the rule of law. He gives two reasons. First, prices cannot be fixed to a long-term rule, which will guide production in an everchanging world. Second, the shortage created by price controls involves choosing another method to supply goods, which would be necessarily ad hoc. As such, limiting the damage caused price controls requires a deviation from the rule of law. Powell (2020) shows an example of this with reference to the federal government's use of the Defense Protection Act. In order to make up for local governments' closing of meat processing plants, President Trump used executive power to keep them open. However, this blanket order does not use the economic knowledge firm owners have on whether or not to stay open. Legislators must choose between unadaptable clumsy rules or arbitrary deviations.

Another way this could be conceptualized is by considering the externalities generated by these policies. When constitutional rules are in danger of being changed, this uncertainty can lead individuals to substitute into a plan they would prefer less than the plan they would select with no uncertainty. In this way, the potential for interference with the rule of law imposes a cost on individuals in the form of causing them to substitute away from their preferred longer-term plans. Beyond just the potential for violation of rule of law, the implementation of a policy which violates the rule of law leads a failure of plans to dovetail. If the central authority declares that driving can occur on either side of the road, it seems likely this grant could lead to more accidents as some try to live by the new rule while others maintain their old plans. The cost of these accidents can be thought of as an externality imposed by interference with the knowledge generated by the now-violated rule of law.

In order to make the loss from deviating from constitutional rules in times of crisis clearer, we'll highlight a thought experiment of an individual facing uncertainty over rules during the COVID-19 pandemic. We'll demonstrate how allowing First Amendment violating price controls disrupts the ability of individuals to obtain the highest possible payoff.

Thought Experiment

A simple thought experiment can be used to illustrate the importance of rules for planning during the pandemic. Let's imagine a single, working mother during the pandemic. Let's say she lives in a rural area, somewhat far from the convenience of frequent grocery store trips. In order to have a successful trip to the grocery store that fits in the hours she isn't scheduled to work; she must hire a babysitter to watch her kids. As a result, it makes sense for her to take trips to the grocery store on a monthly basis rather than more frequently. Given that free pricing allows for market clearing of goods and services, taking larger, more infrequent trips provides the largest payoff. The upfront planning for a month's worth of groceries can be thought of as longer term decision-making behavior which requires a significant amount of planning but results in a lower cost of food over the course of a year (due to less babysitter charges, the savings from planning meals with bulk-buying, etc.) This can be thought of as a simple decision tree. Planning for monthly grocery trips provides an overall payoff of 500 if followed through on, whereas going weekly provides a final payoff of 50. Figure 1 summarizes the situation.

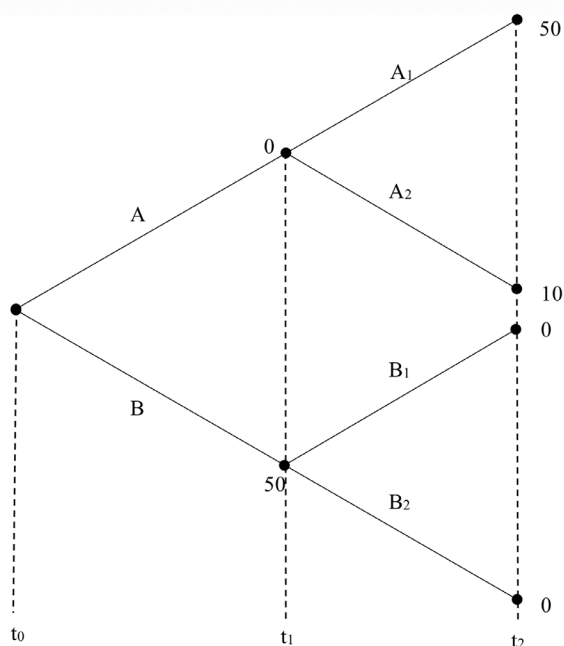


Figure 1

Figure 1, modeled in a similar way to Brennan and Buchanan (2000 [1985], p. 88), shows our decision-maker facing two options over two time periods. Decision A is planning a month's worth of groceries and B is not planning.⁴ However, at the grocery store, she always has the option to take it easy and only buy one week of groceries. This is represented by A_2 in the decision tree, whereas carrying out the plan is represented by A_1 . On the other hand, not planning at all yields a guaranteed payoff, because it is assumed buying one week of groceries will be executed either way.

To this point, we've assumed in our discussions that markets tend to clear. But the reliability of market pricing is based on the fact that individuals can plan ahead and *expect* that prevailing market prices are communicating not only the scarcity, but also the *availability* of goods and services being demanded, given that sellers will tend to hold inventories as a buffer against unexpected demand shocks (Alchian 1969). This is represented by the fact that the decision at t_1 is whether or not to follow through on the plan to buy one month of groceries. Given the inability for sellers to predict the decision at t_1 , priced into the good and service being sold is the cost of holding inventories, leaving the mother (or anyone for that matter) free to decide how to pursue and adjust their plans.

If, on the other hand, there is a shortage (or several shortages) for goods at the grocery store, it is conceivable that whatever meal plan our decision-maker originally created is no longer feasible. The absence of a single staple good, milk for example, could potentially disrupt the entire month's meal plan. In this case, if our working mother chose to spend time planning for a month-long meal plan, it's possible to imagine her being forced to follow through with only getting one week of groceries (path A_2), despite this being the lowest possible payoff. As the probability of this outcome increases, the benefit for our decision-maker to take on the activity of long-term meal planning falls.

When an exogenous shock, such as a global pandemic, occurs, it's reasonable to suspect other individuals will go to the grocery store to stock up on essentials. In this case, it's possible that the grocery store won't have enough inventory to handle this increase in demand without raising prices. However, so long as economic actors receive a net benefit from following path A_1 which exceeds the cost of the higher prices, they

will be able to maintain their plans. The uncertainty of the pandemic is mitigated by the market rules which enable communication. In other words, the rules of the market and the ability to communicate urgency of want become even more important in the face of the pandemic.

However, the ability for prices to adjust and markets to clear is not a given. As has been pointed out, a large collection of laws have been passed or activated during the COVID-19 pandemic, which legislate that markets not be allowed to clear. If individuals could rely on the Supreme Court to uphold the First Amendment and declare price controls to be unconstitutional, this would decrease uncertainty associated with being able to successfully accomplish A_1 instead of being forced to abandon the previously made monthly plan and accept A_2 . Since the Supreme Court cannot, in fact, be trusted by individuals to do so, they will be more likely to substitute from longer-term plan-based decisions like decision A into shorter term plan-based decisions like decision B. By prioritizing expediency over rules, lawmakers actually exacerbate the uncertainty individuals face, causing them to take on second-best plans.

By ignoring rules, we lose the two advantages associated with them. First, they cause individuals' plans to "run into" each other more frequently, analogous to the disruption of traffic signals at a road intersection and the subsequent car accidents that would follow from such disruption. For example, grocery stores may, in light of their inability to raise prices, enforce quantity limits in order that they minimize the number of customers who go home angry with zero food items. However, these sort of quantity limits are overly simplistic and run into plans which involve a longer time horizon. A limit of five cans of corn per visit, for example, disrupts grocery store trips meant to get food for more weeks. If person A wants to get 10 cans of corn per month, while person B plans on getting five cans per week, it's clear that person B contributes to the clearing of more items off the shelves than person A. However, because the plans of person A cannot be communicated with urgency via the price system, they are ignored by more blunt means of communicating scarcity—quantity limitations.

Since some plans now are more likely to fail due to these new regulations, we also lose the advantages associated with human creativity. Our single mother, in the face of increased scarcity and higher prices, may be able to lower the family's consumption of milk by creatively planning (through use of substitutes, freezing premade meals, etc.) to use three gallons of milk over a month rather than four. However, a quantity restriction of two milks per trip renders this creativity useless. If she judges that her family should have at least three gallons of milk in a month, she'll have to make a second trip to the store regardless. If the price remains unchanged relative to before the pandemic due to price controls, the quantity limit is two, and she must make two trips to get her desired amount, there is no need to think of a way to economize into using only three milks. The non-price restriction on milk causes the advantage of creatively limiting consumption to be stifled. Ultimately, any uncertainty over the rules associated with pricing is going to disadvantage long term planners. As plans become longer-term and more complex, it is necessary to be able to rely on stable rules. Thus, replacing rules with discretion punishes long-term planners.

Although shortages have manifested in quantity limits in our discussion, this isn't a necessary feature of our argument. A shortage where quantity is distributed on a first-come-first-serve basis will still fall short of the price system's communicative abilities. Where quantity limits bias against plans which involve large quantities of groceries to be used over large time periods, a first-come-first-served system may be biased against plans which involve shopping on days other than the day suppliers deliver groceries. Regardless of the way the shortage is distributed among individual planners, the unwillingness to enforce Constitutional rules during emergencies stymies the benefits associated with planning which enable behavior which has a longer time horizon. While disrupting the grocery plans of a single individual may seem like a relatively small cost, this is only one example of how a single individual can be impacted. Price controls disrupt the communication and plans of every individual involved in the markets where they are imposed. When considering the thousands or millions of small plans invisibly interrupted by favoring expediency over rules, the potential downside of price controls becomes clear.

CONCLUSION

In this paper, we've argued that since rules provide the conditions necessary for individuals to plan, their importance increases in times of uncertainty and crisis. We've argued this specifically with reference to the First Amendment and the COVID-19 crisis. In order to do so, we first highlighted the fundamental communicative role of prices. Our analysis leads to three conclusions worthy of consideration.

First, judges and politicians interested in making economic regulations that do not violate the rule of law would be benefitted if they better understood the reason for rules, but also how such rules aid individuals in the use of their reason. In our case, if Justice Roberts or Breyer understood the price mechanism's function in the economy, it would seem their arguments in favor of the constitutionality of price controls would bring them to exactly the opposite conclusion of what they have come to on the basis of their misunderstanding of the market process. If a technology is not recognized as a communication device, it seems an obvious conclusion that destroying it does not violate freedom of communication. Such is the case with market prices.

Second, international crises like COVID-19 increase uncertainty and therefore increase the returns to predictability. Constitutional rules and laws which guarantee the ability to communicate allow for better long-term planning and unleash the human creativity necessary to handle unpredictable crises. Recognition of the importance of the rules of reason makes a strong case that rules should be favorable over expediency in times of crisis.

Third, during the time in which this article was written, governments around the world have taken measures, such as lockdowns, business closures, and travel restrictions to mitigate the spread of COVID-19. But a true reopening of the economy would require that government officials commit themselves to rules, which also serve as the preconditions of a market economy, including private property and freedom of contract under the rule of law. Such a reopening of the economy would imply a freeing of markets from price gouging laws and other controls that predated the outbreak of the pandemic. This requires, fundamentally, placing the protection of market exchange and market pricing under the purview of constitutional constraints embodied in the First Amendment of the U.S. Constitution, which restrict impediments to freedom of expression and freedom of speech.

NOTES

- 1 This relates to work by Ganssman (1988) which also suggests the role of money and prices in society involves, but is not limited to, its communicative role.
- 2 This is done because it appears Justice Breyer agrees with the decision made by Justice Roberts although explicitly disagrees with the reasoning.
- 3 OĞUZ (2010) argues that Hayek uses both the ideas of tacit knowledge and “knowing how” indiscriminately. “Knowing how” is the conception of tacit knowledge communicated by the example of riding a bike above. This stands in contrast to Polanyi (1969, p. 147) who argues that tacit knowledge is fundamentally about the “power of the mind, which creates explicit knowledge, lends meaning to it and controls its use”. On this point, see also Lavoie (1986).
- 4 We assume, for the sake of simplicity, that buying a week's worth of groceries require no planning.

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Can Governments Deal with Pandemics?

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Abstract: While few economists dispute that governments should have some role in dealing with pandemics, the relevant institutional question is whether governments *can* deal with pandemics. In this article, we argue that there are trade-offs embedded within the provision of public health measures. States that are better able to deal effectively with pandemics require a great deal of capacity to implement coercive measures such as economic lockdowns or quarantines. Such capacity is associated with lower ability both to generate economic growth, and to harness the palliative effects of that growth with respect to other health dimensions. Since a nation's institutions come in "bundles" (i.e. one takes the wheat with the chaff), there are nations doomed to deal poorly with pandemics, at least in the short run. Despite the positive and normative case for government involvement in public health, effective measures may be outside the range of institutional possibilities.

1. INTRODUCTION

The spread of COVID-19 in the first half of 2020 sparked intense debates over government responses to the crisis. All involved parties implicitly accepted that the state needed to play a role.

Standard public economics suggests that when there are differences between social costs and private costs, the state has a corrective role to play (Pigou 1912). With the COVID-19 outbreak, one could argue that infected persons impose a negative externality upon others, while those who take precautions produce a positive externality which goes unrewarded. Even public choice theorists, who tend to be skeptical of the efficiency of government solutions to such problems, seem to share this viewpoint. For example, James Buchanan used the control of disease-carrying mosquitos as an example of a public good that would be somewhat underprovided absent a state (Buchanan 1968). Indeed, economic historians interested in the long run consequences of malaria eradication in the Americas point to large-scale government interventions as both a public good and a significant contribution to productivity (Troesken 2004; Bleakley 2010). Thus, there is something approaching a consensus among economists.

Although there are reasons to be skeptical of the ability of markets to deal effectively with such problems (Cheung 1973; Coase 1974; Carson 2016; 2020; Candela and Geloso 2018; 2019a, b), it is appropriate to leave those aside to first

ask another question of greater importance: even if governments *should* deal with the externalities posed by infectious diseases, is it really the case that they *can*?

In this paper, we argue that many states are unlikely to be able to deal with pandemics because of the trade-offs inherent to some institutional bundles. We say “bundles” because we deny the conviction held by many that institutional features can be picked individually. Any institutional feature comes bundled with other features. If government X can produce public good A, it is unable to produce public good B because A and B are mutually exclusive choices. Individuals are aware of the opportunity cost when they select the institutions that produce A (Allen 2011; 2013; Piano and Rouanet 2018; Leeson and Harris 2019).

This mutual exclusivity is particularly relevant in the case of dealing with infectious diseases. Their minimization and eradication require the use of a certain tools: quarantine, curfews, mandatory tests, mandatory vaccination, mandatory disclosure of health status, mandatory acquisition of certain items, etc. To employ these tools, coercion is required. While there is a case to be made for the use of coercion in this situation, a government that can use coercion for good can also use it for less enlightened purposes (Troesken 2015). When governments are less constrained in their ability to use coercion, they can use heavy-handed tools to act as predators (Buchanan 1975; Vahabi 2016); they can seize assets, erect barriers to entry to favor rent-seeking firms (and then share in the spoils), create legally sanctioned monopolies, impose heavier tax burdens, etc.

Governments that can do such things cannot foster economic growth and development as easily as those that are constrained from doing so, and they can also be expected to be less democratic and will more frequently be found violating human rights. For these reasons, we argue that—other things being equal—liberal democracies will have fewer available policy options for dealing with pandemics. As such, we can expect them to be less able to act on the public good/externality justifications suggested by standard public economics. While depressing at first sight, this fact should not be viewed as fatal since there are strong positive and normative cases that these conditions can generate superior outcomes.

Our aim with this paper is simple: to set the stage for research on the political economy of pandemic response. What we propose in the present paper is therefore laid out in an exploratory form to invite future research centered around the axes we define. We divide the paper into five sections. Section 2 illustrates our claim that institutions are bundles using the historical example of smallpox eradication in the United States provided by Troesken (2015). Section 3 shows how that example still carries to the present with regard to COVID-19. Section 4 highlights how the trade-offs associated with the different bundles are still preferable—even from a purely health-oriented perspective—and that there are ways to make those trade-offs less costly. Section 5 concludes.

2. INSTITUTIONS AS BUNDLES AND THE SMALLPOX EXAMPLE

To illustrate our contention that institutions are bundles that require taking the good with the bad, we employ the historical example of smallpox eradication in the nineteenth and early twentieth centuries. Economic historian Werner Troesken (2015) started from the simple observation that the United States was a rich country *circa* 1900. It was also a country with high rates of infection and death from smallpox, rates that were noticeably greater than those observed in poorer countries. In other words, America was rich *and* prone to smallpox, which appears paradoxical.

The argument that Troesken makes is simple once one understands how the interactions between smallpox and institutions generate incentives. To combat smallpox, given the tools and means of the time, significant efforts had to be deployed. Most notably, this meant large vaccination campaigns in which state officials could impose penalties on recalcitrant free riders. These were not costless endeavors, as there was considerable resistance from local populations.¹

In the United States, the problem was that constitutional constraints on state and local governments frequently led courts to invalidate certain public health measures meant to deal with smallpox, with the re-

sult that these governments could do little to combat the disease. This led to high levels of mortality compared with countries like Prussia, France, Denmark, Sweden, and Norway (Troesken 2015, p. 99).

However, while tying the hands of local governments in the fight against smallpox, these constitutional restraints also limited their ability to encroach on property rights, significantly reducing their capacity to cater to distributional coalitions (i.e., rent-seekers, see Tullock 1967; Krueger 1974; Tollison 1982). Distributional coalitions expend resources to acquire rents stemming from redistribution of income towards their members (a part of which they then share with politicians). These rents are secured through a multitude of mechanisms: tariffs, entry barriers, subsidies, patronage, tax privileges, price controls, etc. All these mechanisms, however, reduce the pace of economic growth and development, and lead to a society which is poorer overall.

Thus, there was no paradox *because* institutions are bundles. The institutions that made Americans exceptionally rich *circa* 1900 (Lindert and Williamson 2016) by preventing collusion with distributional coalitions also made Americans more likely to be infected by (and to die from) smallpox.

In order to tie Troesken's smallpox example to more generalizable findings, we picture institutions as bundles of public goods and assume that the bundles are mutually exclusive so that as soon as a marginal input is allocated to one bundle, no input can go to producing elements of another. In other words, choosing bundle X produces public good A at the optimal level, but none of public good B, while bundle Y offers the opposite mix: only public good B and no public good A. For the sake of illustration, imagine that A is "secure private property rights" and B is "efficient smallpox mitigation." Finally, we also assume risk-neutral individuals. Obviously, both assumptions are exaggerations, but they are made for the purpose of simplification and our reasoning survives very well when they are moderated.²

In a society with very low probability of a smallpox outbreak, bundle X is more appealing because A is the preferred public good. However, an increase in the likelihood of infection leads to a marginal benefit from adopting bundle Y. In extremely contagious environments with recurrent outbreaks, bundle Y becomes far more appealing because of public good B, even though little or no A is produced.

This simple way of analyzing the choice between material wealth and smallpox infection explains a series of recent empirical findings very well, particularly those of Murray et al. (2013). Regions suffering from higher prevalence of disease-causing pathogens tend to have more authoritarian governments—something that is also reflected in the general attitudes of the population. In those regions, the greater risk of catching a disease makes bundle Y more appealing, despite the tradeoff that reduces production of public good A. Considering that the empirical literature on economic freedom and political freedom suggests a broadly positive relationship between these variables and development, selection of bundle Y—all else being equal—implies poorer societies.

This finding of Murray et al. (2013) should convince economists who have relied on the work of Acemoglu et al. (2001) regarding the colonial origins of development, as their structures essentially boil down to the same thing that Troesken (2015) and Murray et al. (2013) are stating. Acemoglu et al. (2001) proposed that high rates of settler mortality (mostly due to malaria) meant that colonizing powers adopted different institutions in their conquered realms. Where mortality was low, property rights were secured and governments were constrained in their ability to extract and share rents. Ultimately, this created wealthier societies that enjoyed faster growth. Where mortality was high, colonizing powers set up extractive institutions that were not conducive to development. To rephrase in the terms we use above, in low mortality societies, a different bundle of public goods was selected than in high-mortality societies. The choices, constraints and pay-offs are different, but the analytical framework is the same as in Troesken (2015) and Murray et al. (2013).

Analytically speaking, our argument about bundles can be translated in terms of the "rules versus discretion" debate. Think of bundle X as also coming with a commitment to rules imposing both *de jure* and *de facto* constraints on governments (which limit the room for discretion), while bundle Y offers rulers much more room to exercise discretion. When bundle X is selected and an exogenous shock such as a pandemic hits the economy, rulers are constrained in their ability to react. When bundle Y is selected and the same

exogenous shock hits the economy, rulers have more room to exercise discretion and respond to the shock. Keen readers will have noticed that bundle X can be relabeled as “liberal democracy” and bundle Y as “authoritarian/illiberal.” Thus, the trade-off between them entails something of crucial importance: by their very nature, we should expect economically free democracies to be limited in the range of policy options available to deal with a pandemic, whereas illiberal regimes will have more options.

3. INSTITUTIONS AS BUNDLES AND THE COVID-19 OUTBREAK

Can we apply this reasoning to the COVID-19 outbreak? The answer is an emphatic “yes” if we consider the types of policy responses that are recommended to effectively deal with the outbreak. Lockdowns, curfews, limits on the size of assemblies, mandatory use of masks and contact tracing are the main methods advanced by health experts. All of these require significant quantities of resources to be deployed for enforcement, and there are important costs associated with each measure, as we have witnessed with the magnitude of the economic downturns and large government deficits that have followed their implementation. Because of these costs, there is bound to be some reluctance to comply from local populations, as some of the measures are quite intrusive and require a degree of heavy-handedness.

Thus, the countries that are able to take these steps easily can be expected, on average, to be less democratic and less free. Consider the countries whose responses were lauded in the early stages of the crisis for allocating tests and medical treatment: South Korea, Taiwan, Singapore, Vietnam and Germany. Of these, only two score ten points on the Polity Index (Germany and Taiwan) while two are considered politically unfree (Vietnam and Singapore) and one recently became a democracy (South Korea which had scores of below zero on the Polity Index pre-1987, and which is still not considered a “full” democracy since that requires a score of ten on the index).³ This illustrates who is best able to use the tools suggested by health experts to deal with the pandemic: undemocratic regimes are better able to ignore political protestations, and due to their wider discretion, they have more policy options than full democracies.

On the economic freedom side, the main econometric effort available is provided by McCannon and Hall (2021) who tested whether stay-at-home orders were issued earlier in more economically unfree American states. Controlling for the timing of the first COVID-19 death and other factors that facilitated disease propagation, McCannon and Hall (2021) found that states that were less economically free issued their stay-at-home orders much faster than the freest states. This relationship held under different econometrics meant to account for partisan politics and less obvious factors determining the prevalence of the disease. Their reasoning is quite similar to the argument we have highlighted above: economically unfree states have already imposed barriers that infringe upon property rights to some degree. Thus, the marginal cost of an additional unit of infringement is relatively lower than elsewhere.

There is a way for us to expand on these elements using simple econometric tools. An illustration of our point can be seen in the simple regressions we use below. These are very basic ordinary least squares (OLS) which are essentially all we can do for now because many of the relevant variables for such an important test are not yet available since the final *dénouement* of the outbreak is still in the future at the time of writing. As there is bound to be some delay before more complete data allowing for more robust forms of testing becomes available, we are constrained to the simple methods for the time being.

Nevertheless, we examined the stringency index of policy response produced by OurWorldInData.org and how institutional variables such as the Polity index and the Economic Freedom of the World (EFW) index relate to it. The stringency index measures the strictness of the policies adopted by government, with zero being the total absence of action and 100 the most rigorous. We used the value of the stringency index for July 29, 2020.⁴ We also included income per capita as measured by the Maddison Project Database as a control variable.⁵

Table 1, below, shows the descriptive statistics for this exercise, and Table 2 shows the results of the OLS. As can be seen, the results point in the direction we stipulate: both the Polity and EFW scores are

inversely related to the stringency index. Both are significant above the 10% level and EFW is significant above 5%.

Table 1: Descriptive statistics

VARIABLES	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Stringency Index	157	55.24	20.25	11.11	96.30
Log of GDP per capita	174	9.277	1.182	6.428	11.85
Economic Freedom	162	6.795	0.884	2.881	8.972
Polity Index	162	4.284	6.133	-10	10

Table 2: OLS regression of stringency index to COVID response and institutional measures

VARIABLES	(1) Stringency	(2) Stringency
Polity	-0.568* (0.299)	
Economic Freedom		-8.285*** (2.229)
Log of GDP per capita	-1.197 (1.506)	1.578 (1.697)
Constant	68.72*** (13.87)	97.02*** (14.48)
Observations	128	133
R-squared	0.038	0.109

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

While these results should be taken with a grain of salt, they suggest that Troesken’s story of institutional trade-offs with respect to smallpox mitigation also applies to COVID-19 today. Economically free democracies are less able to apply stringent measures to deal with the outbreak in part because they are constrained from doing so. At first glance, this entails a depressing implication, i.e., that economically free democracies are doomed to fall short. The constraints that make them free and democratic also make it impossible (or unlikely) for them to apply the ideal solutions proposed by health experts.

4. AN ACCEPTABLE TRADE-OFF?

Our paper suggests, sadly, that economically free democracies have fewer options and will be unable to apply the ideal policies recommended by public health experts. One is tempted to sigh and just accept the idea that, *ceteris paribus*, liberal democracies are doomed to suffer higher mortality rates.

However, a closer look exposes that sigh as inappropriate. Despite the constraints and the resulting paucity of governmental options for fighting the disease, liberal democracies actually offer incentives that improve health outcomes in the aggregate.

First of all, there is another trade-off that takes place between the different types of health problems. Up to this point, the only trade-off we have considered is between faster economic growth and lower death rates. Readers will have realized that we were referring *only* to death rates in pandemics. But novel infectious diseases such as COVID-19 are not very sensitive to the incomes of the people they harm and kill.

Certain diseases, in contrast, are more easily combatted in situations of economic prosperity (either directly or indirectly) (Preston 1975; Harris 2004; Bloom and Canning 2007). This applies especially to water-borne diseases which require large capital outlays for water treatment—outlays that are more likely in more affluent societies. Another example is nutrition-related diseases, in which greater incomes lead to better nutrition and better overall health (Fogel 1994). The World Health Organization (WHO) refers to such maladies (to which we can also add dental decay, intestinal parasites, tuberculosis, cardiovascular diseases, and schistosomiasis) as “diseases of poverty,” and their reduction is strongly related to economic growth (Deaton 2013). The WHO contrasts these “diseases of poverty” with the “diseases of affluence” that result from higher standards of living, cancer, diabetes and Alzheimer’s being some good examples. However, although the prevalence of such diseases increases with income, it does so only for a limited time, as further increases in income allow for investment in new methods of treatment and care (see notably Lichtenberg 2014 on the role of pharmaceutical innovations in increasing life expectancy at 65). In other words, economic growth also has palliative effects.

Troesken (2015) again provides a good illustration. He highlights that while the United States had higher rates of disease from smallpox during the nineteenth century, the nation’s constitutional and ideological constraints created an environment favorable to economic growth. This limited deaths from other diseases and created incentives to fight problems such as the water-borne typhoid fever. Troesken notes that the enshrinement of private property rights in the United States prevented cities from defaulting on their debts and, by virtue of reassuring financial markets, this encouraged numerous investments in water treatment facilities. In many cities, where franchise contracts for the privately-owned water companies were respected and not subject to political holdups, the incentives to filter water supplies were strong. This was the channel through which typhoid fever was combatted. Overall, this meant that the United States was efficient at combating this type of disease despite the trade-off in which its institutional framework afforded policy-makers fewer options in dealing with smallpox.

Thus, there is a second trade-off that happens, but this one occurs over time. Selecting bundle X (in which property rights are protected, but these same rules constrain discretion) implies higher incomes *in the future*. If these incomes later lead to improvements in health outcomes, the palliative effects will only materialize *even later* in the future. Thus, the value of bundle X depends on the discounted value of future income and health gains. Depending how far in the future, or how high the discount rate, bundle X might be shunned in favor of bundle Y (which includes more discretion for rulers in fighting pandemics) if it offers large and immediate gains in terms of reduced mortality.

This second trade-off is why we state that there is no reason to despair over the fact that economically free democracies are limited in terms of policy response. Sacrificing government’s discretionary powers produces more wealth in the long run which, in turn, yields further improvements in health outcomes. It comes as no surprise to us that unfree regimes are better at combatting certain diseases, usually infectious, against which violence and coercion are comparatively superior tools, however, these are but a small subset

of all health problems. The Global Burden of Disease Study (GBD) 2017 provided estimates of cause-specific mortality for 282 causes in 195 countries from 1980 to 2017 (Roth et al. 2018). Non-communicable diseases accounted for the vast majority of fatalities (73.4% in 2017). Of the remaining deaths, a large share was attributable to other causes including violence, accidental injury, self-harm and maternal mortality. Most of the potential gains in life expectancy involve diseases that are inversely associated with economic growth. With this element in mind, it is easy to see that bundle X's disadvantage relative to bundle Y is minimal.

Moreover, it is important to point out that the granting of wider discretion to rulers to deal with pandemics does not necessarily map to effective use of that power. Indeed, up to this point in the article, we have implicitly assumed that rulers would use their discretionary powers wisely. This was because we wanted to highlight the limitations faced by liberal democracies in terms of policy options and we have saved consideration of “results” for the present section. However, relaxing this assumption shows that liberal democracies can perform just as well despite their policy limitations. The ability to use discretion to deal with pandemics, if it comes with wide latitude in other policy areas, makes it likely for an illiberal regime to be captured by distributional coalitions which, in turn, may prevent implementation of the best policies. Thus, discretionary powers and increased policy options of governments do not automatically produce better results.⁶

Finally, it is worth pointing out that economically free democracies are also the best placed to adapt to, and learn from, infectious disease shocks. There are three reasons for this.

The first relates to the work of Geloso and Bologna Pavlik (2021), which provides a good illustration of adaptation. The economic costs of influenza pandemics have been falling gradually between each episode. The flu pandemic of 1918 imposed economic costs equal to 6% of GDP (Barro et al. 2020). Direct estimates of the economic costs of the 1957 and 1968 flu pandemics are unavailable, but Keogh-Brown (2010) estimated that if these pandemics had happened in the twenty-first century, the cost would have represented 0.58% of GDP, which suggests a minimization of economic effects. The work of Geloso and Pavlik (2021) suggest that high levels of economic freedom are instrumental to this reduction in costs. They argue that pandemics are shocks to which economies must adjust by changing the allocation of resources. High levels of taxation and regulation make it harder to achieve this reallocation and thus extend and deepen the shock. When economic freedom is high (i.e., when regulation and taxation are low), reallocation is easier. Using the flu pandemic of 1918, they confirm econometrically that economic freedom mitigated the damage, thus supporting the hypothesis that freer economies adjust more easily to shocks.

The second reason is that we can expect richer economies to better cope with temporary shocks. Poorer societies with low incomes and limited wealth stocks can ill afford self-quarantine—the opportunity cost of avoiding the disease (i.e., *not* working) is too high. Thus, we ought to expect that poorer individuals will have little choice but to bear the risks of getting sick. Richer societies, where households can be expected to have greater wealth stocks to draw from in a shock, can better cope with not working. The cost of avoiding the disease in richer societies is thus lower. The global pace of economic growth over the twentieth century helps explain why death rates from influenza epidemics and influenza-related deaths (i.e., outside of epidemics) have also been falling over the period (Viboud et al. 2006; Potter 2001).

The third reason is that economically free democracies are better able to learn from pandemic episodes. This springs from the association of economic freedom with polycentrism, which arises from the relationship between political autonomy at the local level and commitment to market institutions (Weingast 1995). Such commitments have a cost: they reduce the ability to clamp down on pandemics. They also have benefits: the encouragement of innovation in policy responses, as well as provision of greater incentives and opportunities for public sector entrepreneurs to address policy problems while accounting for local conditions and constraints (Aligica 2018; Aligica, Boettke, and Tarko 2019).

The wealth-creating effects may undermine coercive suppression, but to the extent there is policy choice in an economically free democracy, polycentrism is likely to contribute to innovations that improve a society's response to the challenge. Pennington (2020) explains that the coronavirus pandemic is an example of what Hayek called a complex policy problem, with uncertainty arising from the epidemiology of the vi-

rus, its interaction with political, economic, and cultural arrangements that affect its spread, and the differing attitudes, time horizons, and belief systems that influence the spread of the disease. A consequence is the need for experimentation to address challenges. While economically free democracies may be less able to control the spread of pandemics, their advantages in experimentation promise to reduce the resulting ratchet effect (in which crises breed larger government), as well as to address the epistemic challenges by accepting the importance of modest experimentation in the generation of solutions.

5. CONCLUSION

The claim we put forward in this paper is simple enough: economically free democracies are bound to fall short of the ideal policy response to a pandemic. In order to secure political and economic freedoms, governments must be constrained in their ability to use coercion, yet coercion offers the most efficient tools for dealing with pandemics. As such, economically free democracies are institutionally designed to prevent the use of these tools.

In essence, we conceive institutions as bundles whose components cannot be separated. The notion of trade-offs between institutional bundles is something that is often missing in the existing literature. Two of the most comprehensive and sweeping economic histories of the modern world illustrate the importance of considering institutions as bundles. Greif (2006) suggests that adoption or non-adoption of the best institutions determines wealth or lack thereof. Kuran (2011) asks us to think of two economies, each with an institutional frontier—the regions (cities) where the institutions are most closely associated with creation of wealth. Economic development or underdevelopment depend on a comparison of those institutional frontiers. Each offers an insightful history, but something is missing: the institutional trade-offs. The same can be said for the great theories of extension of the franchise (Acemoglu and Robinson 2006), which reflect on economic inequality. Democracy too is a bundle; the very aspects of democracy that make it appealing, such as providing more people with opportunities to participate in collective decisions, create disadvantages in responding to pandemic disease. Thus, while Acemoglu and Johnson (2005) famously declared the importance of unbundling institutions, there is much to be gained in terms of understanding pandemics and how nations respond to them by bundling them up again.

Using the analysis of Werner Troesken (2015), we noted that, in the case of communicable diseases and their prevention, the institutional trade-off leads to a desirable result. Economically free democracies tend to enjoy faster economic growth which, in turn, leads to better health outcomes with respect to non-communicable diseases.

Thus, it is clear that the institutional frontier of economically free democracies is a bundle of institutions that have costs on certain margins, including fighting disease. The large-scale institutional changes that make nations rich make them less able to address communicable diseases, at least in the short run. Understanding these trade-offs is the first key to analyzing *any* pandemic.

NOTES

- 1 Michael Bliss (1991) provides a potent example of such reluctance in the case of the smallpox outbreak of 1885 in Montreal. There, French-Canadians were strongly resistant to vaccination drives which caused high mortality rates and the spreading of the disease elsewhere in the province of Quebec.
- 2 This type of argument regarding mutual exclusivity should not too surprising to economists as it embodies the crux of the argument that led to Ronald Coase's Nobel prize. In his Nobel address (1992), Coase explicitly mentions that institutions come with different costs, and thus we have institutional opportunity costs and institutional trade-offs associated with selecting one set of institutions over another in order to deal with problems of economic organization.
- 3 We downloaded the Polity Data from OurWorldInData.org
- 4 We selected this date because dates after this one are missing data for large countries such as Canada.
- 5 The results here are illustrative of the key relationships implied by a theory of institutional bundling. Other possibilities include individualistic cultures (less support for stringent measures), political decentralization (less ability to implement stringent measures), trust (less stringency because individuals are able to mitigate through behavioral change).
- 6 This point is particularly relevant when we consider the costs of individual pandemic policies. If a government selects a given policy that is suboptimal (assuming away institutions) because of pressures from interest groups, then the performance of illiberal regimes relative to liberal democracies worsens. We thank the editor for this point.

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Governing Nested Externalities during a Pandemic: Social Distancing as a Coproduction Problem

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Abstract: Containing the spread of a virus during a pandemic requires citizens to self-discipline and adopt precautionary measures. This paper focuses on one such measure: social distancing. Governments can force citizens to comply with social distancing by imposing mandates and increasing penalties. However, constitutional restraints prevent governments in democratic societies from utilizing extreme measures. Thus, a pandemic presents an extreme case in which the goals of security (virus containment) and individual freedom appear irreconcilable. Moreover, a pandemic presents collective action problems, because a few defectors, who can remain undetected, can impose incalculable costs on a society. This predicament leads many to make a case for draconian measures to force compliance. We present an alternative take that views social distancing as a coproduction process; that is, virus containment requires active participation and a high degree of cooperation from citizens. Because external costs are difficult to measure and it is near impossible to monitor and sanction violations, coercive measures that do not account for coproduction processes are unlikely to succeed. Instead, strengthening existing mechanisms for mutual monitoring and sanctioning that are consistent with the norms and values of the populace may yield more favorable outcomes.

JEL Codes: H4, O3, Q2, Q5, Q54, Z1

Keywords: pandemic, collective action, Ostroms, coproduction, social distancing, polycentricity

1. INTRODUCTION

COVID-19 was first reported in early December 2019. After the first outbreak—in the city of Wuhan in China—it spread throughout the world, resulting in a global pandemic by March 2020. COVID-19 has an estimated reproduction number (R_0) of 2.87, which means that each infected individual infects another 2.87 individuals on average (Billah et al. 2020). This number can be much higher in areas with high population density.¹ COVID-19 infection is characterized by fever, shortness of breath, coughing, loss of smell, headache, fatigue, nausea, and diarrhea (Mao et al. 2020). However, it takes another 5.1 days after infection² for the symptoms to manifest, during which time the infected individual may infect other individuals (Lauer et al. 2020). COVID-19 primarily spreads through close contact via respiratory droplets, but some studies indicate that spread can also occur through contaminated surfaces (Bai et al. 2020; Tindale et al. 2020). Research suggests that social distanc-

ing³ of one meter or more can reduce the risk of infection by 10.2 percent (Chu et al. 2020). Other effective preventative measures include mask wearing (14 percent risk reduction) and hand washing (Saunders-Hastings et al. 2017; Chu et al. 2020). Although much of our analysis also applies to mask wearing, hand washing, and other preventative measures, this paper focuses only on social distancing.

Effective social distancing reduces the overall transmission rate significantly (Anderson et al. 2020). Greenstone and Nigam (2020) estimate that the mortality benefits from social distancing are about \$8 trillion in the United States, or \$60,000 per household. However, the reduction—commonly referred to as “flattening the [infection] curve”—comes at the steep cost of an inevitable recession (Gourinchas 2020; Saez and Zucman 2020). At the micro level, the costs are job losses, reduced income and spending, impaired health, and human capital losses. Any roles that for-profit firms, nonprofit organizations, civil society, governments, and private citizens play in pursuing social-distancing goals come with economic trade-offs. Furthermore, social isolation causes lasting psychological harm (Brewer 2005; Coyle and Dugan 2012; Klinenberg 2016). Importantly, people’s beliefs, biases, and political affiliations influence their social-distancing behavior (Allcott et al. 2020; Brzezinski et al. 2020). Thus, varying trade-offs and belief systems result in different incentives for citizens to comply with social-distancing guidelines. Therefore, the forms of policy tools employed to attain social-distancing goals are critical (Briscese et al. 2020; Chen et al. 2020). Specifically, how well a given policy addresses heterogeneities in trade-offs and beliefs determines the rate of citizen compliance.

Most studies conceptualize social distancing as a social-planner problem (for example, Fenichel 2013). Although some have accounted for behavioral heterogeneity (Reluga 2010; Fenichel 2013) and micro factors that influence compliance (Briscese et al. 2020), these approaches underemphasize the central role that citizens play in the provision of social distancing. Because a pandemic, by nature, is a global externality problem, the conventional intellectual and policy approaches call for national or global solutions. Cross-country comparisons mostly focus on successes and failures of national governments and international organizations.⁴

However, social distancing, which is key to flattening the curve, is very much a local solution adopted by users at the micro level. Thus, this paper argues that, for a couple reasons, the dominant conceptualization of social distancing as a policy tool to be implemented through stay-at-home orders and to be enforced through top-down surveillance, monitoring, and sanctioning is misleading and potentially pernicious. First, the state lacks the ability to closely monitor infections without cooperative citizens. Second, steeper penalties to increase compliance can backfire in that would-be cooperators may defect in response to the coercion. Thus, these factors add challenges to implementing top-down solutions.

Countries deal with infectious diseases by using various policy measures, such as quarantines, curfews, mandatory tests, mandatory vaccinations, and contact tracing. It is often assumed that, in order to implement these measures, more coercion is required. Social scientists and policy makers find themselves trapped in an institutional dilemma: keep embracing liberal institutions and constitutionally constrained governments, and leave it to nonstate actors to take preventative measures, or capitulate to Leviathan to expedite the pandemic response (Geloso and Murtazashvili 2021). This narrow way of framing the problem is guided by the presumption that liberal democracies are less equipped to handle a pandemic than autocracies. That is, the advantages that liberalism offers—economic growth, protection of our liberties, and improved health outcomes—come at the price of the state’s ability to handle collective challenges such as pandemics. This paper argues that this is a false dilemma that stems from misconceptions regarding the nature of the externalities in a pandemic and the ability of governmental actors to internalize them. These misconceptions result in an overemphasis on the effectiveness of coercive measures and an underemphasis on the role that citizens play in *coproducing* social distancing from the bottom up.

By building on the works of Vincent and Elinor Ostrom and the Bloomington school, this paper breaks from those purporting mutual exclusivity between liberty and effective pandemic response by conceptualizing social distancing as a coproduction problem. The coproduction of social distancing requires inputs from citizens and government (Parks et al. 1981; Ostrom 1996). Instead of the production model commonly

used in microeconomics, in which all relevant inputs are commanded by a single producer that decides the combination of inputs based on their relative prices and marginal substitutability, the coproduction model emphasizes a synergy (or complementarity) between what a government does and what citizens do in the provision of local public goods and services (Ostrom et al. 1961; Ostrom 1996).⁵

Such a synergy is possible when the inputs from governments and citizens are complementary; when they are not, government input can crowd out citizen engagement (Ostrom 2000a). We discuss various roles that a government can play to encourage citizen input as well as those that can crowd out citizen input. Understanding pandemic response in this way sheds light on the fundamental, yet neglected, issue that the production of various public health services relies more on decisions and actions at the micro level and less on government policies. Preventative measures such as social distancing, self-isolation, and even quarantines require coproduction, wherein the role of social capital is crucial. Individuals, families, local communities, and businesses can foster new forms of social capital and reconfigure old forms to solve large-scale social dilemmas in a pandemic (Storr et al. 2021). While some coercive measures may be necessary, only those that are built on *ex ante* self-commitment are likely to be effective (Ostrom 1990).⁶ Where self-commitment is lacking, coercive measures can crowd out citizen engagement. Thus, we emphasize the vital role of civil society and nonstate actors in addressing many pandemic challenges from the bottom up, and thereby better matching the scale of the externality at hand.

Like the economic literature on other collective dilemmas, the literature on pandemics is broadly Hobbesian: it assumes that without governments imposing coercive measures from the top down, individuals cannot rise above their parochial interests to internalize large-scale externalities or solve social dilemmas. This view persists despite theories and evidence that suggest that bottom-up alternatives are not only feasible but also more efficient given favorable institutional conditions. Elinor Ostrom (2009, 2012), for instance, shows that global externalities are best framed as “nested externalities,” wherein small- to mid-scale institutional efforts have a vital role to play in the coproduction of nested and overlapping solutions. Like Ostrom, we do not argue that citizen efforts alone are sufficient. In certain cases, expedient and large-scale efforts such as surveillance of disease transmission, limiting risky cross-border travel, and facilitating research into treatment and vaccines require the government to take a direct role. This paper provides an Ostromian framework for understanding pandemics as nested-externalities challenges in which preventative measures such as social distancing are viewed as coproduction problems.

Framing pandemic response as a nested collective action problem helps us identify the limits and capacities of central authorities in dealing with a pandemic. While scholars generally agree that governments *should* deal with pandemic externalities, the relevant institutional question is whether governments *can* deal with them (Geloso and Murtazashvili 2021). This paper sheds light on the latter question by highlighting that top-down efforts by central authorities alone are not sufficient and may even be counterproductive in dealing with pandemic externalities. Our central thesis is that a government’s role in the coproduction of social distancing should be to disseminate accurate scientific information and to create and maintain general trust and a sense of solidarity conducive for citizen participation. We argue that social-distancing policies that do not foster mutual trust may create public resentment and produce detrimental results. The purpose of this paper is to underscore the centrality of the coproduction relationship between citizens and governments in attaining social-distancing objectives.

The remainder of the paper proceeds as follows. In section 2, we examine the nestedness of collective action problems associated with social distancing during a pandemic. We discuss various costs and considerations that present additional challenges in the provision of social distancing as a global or large scale public good. We argue that the central planner aiming to provide such a good faces insurmountable challenges. Section 3 presents social distancing as a coproduction problem. Producing any amount of social distancing requires active engagement by and coordination between citizens and the state. That is, the state and citizens are coproducers of social distancing. In section 4, we discuss the theoretical and policy implications of viewing social distancing as a coproduction problem. The final section concludes with some suggestions for future research on the governance of pandemics.

2. AN OSTROMIAN VIEW ON PANDEMICS: NESTED EXTERNALITIES AND GOVERNANCE CHALLENGES

The literature recognizes that social distancing can be characterized as a collective action problem (Cato et al. 2020; Meizen-Dick 2020). The divergence of the private and social costs and benefits of social distancing is particularly severe, with considerable heterogeneity based on sociodemographic and health factors (Glover et al. 2020; Hur 2020; Malkov 2020). Hur (2020), for example, points out that “young workers engage in too much economic activity relative to the social optimum” (p. 1), which increases overall infection and death rates. Because healthy cohorts do not pay the full costs of their actions, it is argued, they over-engage in productive and leisure activities. Meanwhile, the benefits of social distancing—low infection and death rates—cannot be denied to those who do not engage in it. They are dispersed across society, with the elderly demographic being the primary beneficiary group. Thus, social distancing is underprovided.

Building on similar analyses, economists conclude that the collective action problem associated with social distancing can be classified and addressed as a public good problem (Bethune and Korinek 2020; Hur 2020). Although the problem of achieving social distancing is similar to many public goods problems, classifying social distancing as a pure public good is not appropriate. Collective action problems can vary tremendously based on how costly or difficult it is to devise mechanisms for excluding individuals or fostering cooperation (Ostrom 1990; 2003). Consider the difficulty of exclusion, which is commonly considered a defining feature of public goods (Olson 1965). Ostrom (1990, 2000, 2003) notes that this attribute is also shared by common-pool resources (CPRs). Not only are CPRs and public goods theoretically different classes of goods, but individual behaviors in free-riding situations associated with the two classes of goods are markedly different (Ostrom et al. 1994; Ostrom 2003). For example, in CPR games, a participant’s non-cooperative actions have a big effect on others’ behavior, which is not the case in public goods games. Thus, it cannot be assumed that pandemics pose a pure public good challenge. This distinction is critical because the public good rationale is a principal justification for calling on central authorities to provide certain goods (Rayamajhee and Paniagua 2020).

To correctly identify the type of the collective action problem at hand, one needs to factor in institutional and demographic details of the subpopulation under consideration. Attributes of the virus itself, such as reproducibility, mutability, and contagiousness, chiefly but not wholly determine the problem. Pandemic problems, in fact, are social and economic dilemmas marked by nested governance challenges as much as they are biological problems. How humans individually or jointly respond to the global challenge matters a great deal in defining the nature of the problem. Various institutional factors can interact with the biophysical attributes of the virus to change the type of collective action problem (Rayamajhee and Paniagua 2020). Recognizing the institutionally contingent nature of the problem is the critical first step for effective policy design. In what follows we briefly analyze various considerations that present additional challenges in the provision of social distancing as a public good and in framing pandemic responses as a single central-planner dilemma.

a. Is Pandemic Response a Social-Planner Problem?

Standard economic models treat pandemic response as a social-planner problem (Gersovitz and Hammer 2004; Gersovitz 2011; Fenichel 2013; Alvarez et al. 2020). They assume, for instance, that a benevolent social planner is equipped with the knowledge and tools to act swiftly and is able to directly control “all preventative and therapeutic actions” (Gersovitz and Hammer 2004, p. 3). Because infectious diseases, by definition, are rife with externalities that are unlikely to be fully internalized through voluntary processes, modelers argue that decentralized solutions are not social welfare maximizing (Toxvaerd 2020). Thus, the planner’s role is to intervene, often coercively, to control the spread of the infectious disease so as to maximize the

social welfare function. This approach presupposes that preventative measures such as social distancing, quarantines, and curfews (and their associated outcomes) are produced from the top down.

While useful as the first step toward a more realistic policy analysis, the optimal-planning approach suffers from too many serious epistemic and public choice problems to generate any useful policy proposals for social distancing (Coyne et al. 2020). Because risk calculus and the size and scope of externalities are constantly evolving, the planner faces epistemic challenges in gathering relevant information with which to optimize (Pennington 2020). Moreover, the governance of large-scale externalities requires bundling different services produced at different scales. This poses severe challenges to forms of government that rely on top-down measures (V. Ostrom 2008). Indeed, as the seminal work by Vincent Ostrom, Charles Tiebout, and Robert Warren (1961) shows, “a consolidated, hierarchical administration would unavoidably lead to massive inefficiencies because the administrative units operate at rigid scales, while the scale of public issues are varied and always changing” (quoted in Tarko 2017, p. 40). Thus, any administrative unit confronts numerous challenges that do not fit its scale: some challenges require scaling up, whereas others require scaling down.

Moreover, a central planner, even a benevolent one, dealing with a pandemic often faces incentives and lack of information that lead it to make choices that could have malignant consequences. This is because complex phenomena such as pandemics entail interacting components (for example, attributes of communities, rules-in-use, and biophysical conditions) at various nested levels at which the direction and magnitude of the impacts of external policy change are difficult to determine (Pennington 2020). A great degree of subjective interpretation, differences in opportunity costs and discount rates, and a wide range of assumptions about contextual factors enter into any cost-benefit analyses in a pandemic, which makes precise predictions highly unreliable.

Thus, a pandemic response that is motivated by the theoretical predictions of the optimal-control framework, in which a benevolent planner designs and implements policies at zero transaction cost, is likely to overestimate the competence of governments and underestimate the possibility of policy blunders. After all, the optimal solution may be, in practice, outside the range of institutional possibilities for any government that uses a hierarchical approach to deal with externalities (Ostrom 2008). This holds true even if governments are able to implement coercive measures effectively.

b. Nested Externalities at Multiple Scales

The framework of nested externalities at multiple scales provides a more suitable foundation to analyze global challenges, including pandemics (Ostrom 2012). For large-scale externalities, a global or top-down policy response is frequently seen as the only strategy required. Yet we intuitively recognize that helpful actions can be taken at multiple smaller scales to mitigate externalities. As Elinor Ostrom reminds us, this overemphasis on top down solutions is, in part, because we have not made adequate scholarly investments in developing a more appropriate and realistic theory of global change “that offers a better explanation of micro-level incentives and outcomes” (p. 353). A productive step in this direction is to frame global challenges as nested externalities. Trying to solve cross-national or global externalities as if political units were organized at the exact levels at which externalities can be most efficiently internalized is misguided; it downplays the challenges of scale, heterogeneity, and institutional matching, which were centerpieces of the Ostroms’ analytical framework (Tarko 2017).

Nested externalities occur when “actions taken within one decision-making unit simultaneously generate costs or benefits for other units organized at different scales” (Ostrom 2012, p. 356). The COVID-19 pandemic has made it abundantly clear that the spread and containment of infectious diseases follow this pattern. Many actions and decisions taken at multiple scales—from those of the residents of Wuhan, China, to those of the World Health Organization—have directly affected the spread and control of the contagion at different times and places.

Whether social distancing yields intended results (diminishing the speed and rate of contagion) depends on the actions taken at various levels—counties, cities, states, regions, countries, continents, and the world. Decisions at each level, including those taken individually and within families, have spillover effects that permeate across all levels. In other words, the nodes of authority governing social distancing lie at all levels and are organized in a nested manner. Strategies and policies adopted by a city mayor generate costs and benefits for other cities and for states, regions, countries, and the world. At an even more micro level, decisions taken by families and businesses generate externalities within and across communities, regardless of macrolevel decisions. Thus, the high level of dispersion of nodes of authority governing social distancing implies that the problem is better viewed as one of achieving multilevel collective action than one of providing a national or global public good through implementing an optimal policy. Thus, the production of social distancing is more likely to emerge through bottom-up processes involving different levels of authority.

Moreover, the guiding assumption behind the centralized provision of social distancing as a national or global public good—that the service is nonexcludable and nonrivalrous—also needs to be reevaluated. To be sure, social distancing shares an important feature with public goods—namely, the benefits of social distancing are nonsubtractable. For instance, if county A is able to reduce infection rates as a result of successful social distancing, the benefit from the lowered risk⁷ that one resident receives from it does not subtract from the net benefit that another resident receives. However, social distancing cannot be deemed as a pure public good.

The *degree* of excludability in the provision of social distancing varies across scales of analysis; that is, authorities at all levels have different capacities and costs of exclusion. For instance, exclusion may be more feasible at the national level, with effective immigration restrictions already in place, than at the county or state level (Finn and Jakobson 2021). On the other hand, the literature on public goods shows that excludability is institutionally contingent and determined to a large extent by geography, technology, and other factors (Rayamajhee and Paniagua 2020). For instance, jurisdictions separated by a major river or sea (compared to those separated by land boundaries) or geographic regions under multiple political jurisdictions (compared to those under one political jurisdiction) have different degrees of excludability.

Thus, the challenges in providing social distancing are complex and nested in multiple scales with feedback loops and externalities between scales. This complexity poses insurmountable obstacles to the task of optimal policy design and implementation, which assumes a single node of authority and no coordination problems. Next, we discuss different costs incurred in the optimal production of social distancing.

c. Different Costs Incurred in Social-Distancing Policies

i. Exclusion/Boundary Costs

Establishing clear boundaries is the first step in organizing successful collective action (Ostrom 1990). Without well-defined boundaries, creating technological and institutional devices to exclude nonmembers or nonpayers can be prohibitively costly. In the case of COVID-19, jurisdictional boundaries have a discernable but limited ability to reduce infection rates. Although travel can be restricted to an extent, complete restriction is infeasible because it entails high political and economic costs. Moreover, for a couple reasons, simply closing the borders does not stop the spread. First, there are no clearly defined boundaries applicable to infectious diseases. Second, restricting movement between jurisdictions does not stop intrajurisdictional spread, which poses significant challenges in heterogeneous communities with diverse beliefs and risk perceptions. The pandemic thus presents a problem of shifting boundaries (Finn and Jakobson 2021). The so-called hotspots change over time, requiring relaxing and tightening of restrictions, which further complicates the task of implementing a single policy.

With regard to social distancing, political boundaries matter only to the extent that citizens trust their political leaders. A high level of trust is essential in fostering the collective action that is necessary to meet

social-distancing goals (Ostrom and Ahn 2008; Rayamajhee and Bohara 2020). Thus, the suitable scale of political boundaries lies at the level that citizens trust the most. A provincial or national authority with a history of betraying public trust is unlikely to effectively implement social-distancing policies. A mayor's office may be a more fitting scale in such a case. Meanwhile, if nongovernmental organizations such as churches and civic associations are able to promote public trust, their jurisdictions are more suitable both in analyzing and in fostering social distancing (Storr et al. 2021). Moreover, smaller organizational units such as private businesses may be better able to create and enforce boundaries to generate higher compliance, but the exclusion costs they incur are determined by the larger jurisdictional units within which they are nested. For example, a city ordinance encouraging social distancing in public spaces can reduce a grocery store's costs of excluding violators. With enough social capital, a weak form of exclusion can also be introduced through social norms that do not strictly follow spatially organized geographical or political boundaries.

Thus, the suitable jurisdictions and associated boundary costs incurred in providing social distancing cannot be determined *ex ante* by the policy maker (or planner) in an institutional vacuum. A simple model with one node of authority that maximizes a given social welfare function with a predetermined policy tool is inadequate to deal with nested pandemic externalities and may be counterproductive. A wide variety of institutions and associations influence social-distancing behavior. Thus, our choice of the suitable institution (including the governance structure) is crucial in determining how costly or cheaply violators can be excluded (Rayamajhee and Paniagua 2020).

ii. Decision Costs

Collective action taken to provide social distancing requires that individuals expend substantial effort to reach an agreeable decision (Buchanan and Tullock 1962). That is, collective action entails individual decision costs. An individual will enter the collective unit if she determines that doing so will increase her utility by sufficiently reducing external costs or increasing external benefits relative to the decision costs. In the case of social distancing, decision costs vary significantly depending on the level under consideration. At a smaller collective unit, it may be feasible to achieve unanimity (voluntary social distancing), thereby eliminating external costs. However, as the level of the political unit rises and the size of the populace increases, decision costs increase.

In the political domain, decision-making authorities exist at different levels (for example, local, state, and federal), and different levels correspond to different decision costs. But informal associations also have considerable authority in the pandemic response and can influence decision costs. Churches and religious leaders influence people's beliefs about the right course of action and set expectations necessary for collective action. For example, Chamlee-Wright and Storr (2009) document important roles that Father Vien and the Mary Queen of Vietnam Church played in reducing decision costs that could have precluded successful community return after Hurricane Katrina. Similarly, social entrepreneurs and civic leaders also play crucial roles in reducing decision costs.⁸ Rayamajhee et al. (2020) find that local entrepreneurs, Dhurmus and Suntali, played a decisive role in fostering citizen participation in post-earthquake reconstruction and rebuilding efforts in Nepal.

Of course, one could, in theory, rely solely on a benevolent despot to implement social distancing nationally or even globally by decree. This would reduce decision costs substantially and swiftly. However, it is not clear how effective such a decree can be in motivating a behavior that entails significant monitoring costs. While it can solve coordination problems for potential compliers, it may motivate potential violators to defect. Antilockdown protests witnessed across the world testify to that fact.

iii. *Monitoring Costs*

High levels of self-governance are required to resolve any social dilemma in which temptations to shirk are copious (Ostrom 1990). Because human prosociality stems from reflexive, and automatic processes, temptations to shirk on social distancing are ever present (Wilson et al. 2009; Zaki and Mitchell 2013). Thus, to have any hope at obtaining social-distancing goals, effective mechanisms for mutual monitoring must be in place. Without mechanisms for monitoring and achieving accountability agreeable to most actors, the potential for conflict can escalate in micro situations in which deep-seated human prosociality is suppressed.

Studies of CPR systems tell us that monitoring is prohibitively costly when central agencies force resource users to comply. Only when incentives for mutual monitoring are present—when “everyone is watching everyone else” because they all have skin in the game—can the costs of monitoring be made manageable (Ostrom 1990, p. 74). In other words, who is doing the monitoring directly affects monitoring costs because the participants’ sense of fairness and their level of compliance vary with the trust they have in the monitoring authority. Monitoring costs, in turn, can determine whether solving the collective action problem is feasible. For instance, because the health effects of COVID-19 are heterogeneous, those who expect minimal symptoms and low fatality rates, such as cohorts of fifty years of age and below, have weaker incentives to adopt preventative measures. Thus, communities can better monitor such subgroups through built-in social mechanisms and civil associations at relatively lower cost compared to distant central authorities.

Recognizing the centrality of monitoring problems in implementing social-distancing policies leads us to conclude that the focus should be directed away from central, coercive authorities and toward building and strengthening social capital (Storr et al. 2021). When social capital is high—that is, when individuals share bonds of trust and reciprocity with one another—the necessity (and associated costs) of external monitoring is greatly reduced. As Rayamajhee and Bohara (2020) find, this is essential in enabling self-governance and fostering resilience in crises in which collective action is needed.

iv. *Sanctioning Costs*

The presence and efficacy of sanctioning mechanisms determine whether a prescription is a rule or a norm (Crawford and Ostrom 1995; Ostrom 2005). A prescription can be considered to be a rule only if effective sanctioning mechanisms are present (Crawford and Ostrom 1995). Without sanctioning, the relevant authority can encourage an action but cannot enforce it. Violations are likely to go unpunished. Certain norms, if internalized, can act as ethical prescriptions and influence behavior even without direct sanctioning mechanisms (Basu 2000). But such norms often take years, or even generations, to form and are not in the policy maker’s toolkit. Moreover, norms supporting social distancing are not likely to be internalized broadly. Even if a small subpopulation internalizes them to an extent, they are not likely to propagate to the broader community. Thus, sanctioning violations of social distancing is not a trivial task.

There are additional factors that determine sanctioning costs. Sanctioning a social-distancing behavior requires a form of *quasi*-voluntary compliance, which is built on an explicit or implicit self-commitment to comply with established rules in a repeated-interaction setting (Ostrom 1990). If such conditions exist, violations are punishable because each party values compliance and understands that her violation can result in other parties violating the rules, which will have devastating consequences. Therefore, all parties agree *ex ante* to be sanctioned. Universities, hospitals, and even grocery stores in most urban centers are better able to impose sanctions when violations occur because they can formally or informally incorporate sanctions into their terms of service. In the absence of quasi-voluntary compliance, imposing nongraduated sanctions unilaterally can lead to violations escalating uncontrollably.

Indeed, when one begins to examine the intricacies of collective action problems in a pandemic and starts to identify the various costs and challenges in enacting different pandemic policies, one quickly realizes that elegantly optimized planning problems have very little to do with reality. They do not adequately account for the various costs and challenges of the central-planning approach. Additionally, they do not

consider potential crowding out, perverse incentives, and public resentment caused by top-down policies. As we argue, such ill-conceived approaches tend to overestimate what governments are able to achieve and underestimate potential policy blunders, which can have devastating consequences.

3. Social Distancing as a Coproduction Problem

Although the concept of coproduction appears frequently in the public-administration literature, it has garnered relatively little attention in economics and related social sciences.⁹ Nonetheless, the concept remains useful in describing the role of civil society and the “third sector” in delivering public services (Ostrom 1996; Brandsen and Pestoff 2006; Pestoff 2006; Aligica and Tarko 2013). In a study closely related to ours, Rayamajhee et al. (2020) use the concept to describe the role of citizen engagement in postdisaster recovery. They contend that postdisaster reconstruction and recovery requires the coproduction of goods and services that cannot be provided solely by either the state or markets; that is, they require efforts from citizens and civil society. Therefore, coproduction provides a better foundation to analyze the delivery of many goods and services in such contexts.

Our discussion thus far has shown that many preventative measures to contain the spread of infectious diseases require a great deal of citizen compliance and participation. We argued, for instance, that without mechanisms of mutual monitoring and sanctioning, social-distancing goals cannot be attained. Thus, efforts from the “regular” producers (that is, governments) do not amount to much if citizens’ input is missing. We also showed that a pandemic poses nested-externalities problems, similar to the case of climate change (Ostrom 2009, 2012). Because many of these externalities are dynamic, the optimal scale of administrative unit to internalize them is difficult to determine. This problem gets more severe once the administrative hierarchy gets multilayered and entangled (Rayamajhee and Paniagua 2020). Therefore, optimal coercive interventions by central or regional authorities might be “outside the range of institutional possibilities” during a pandemic (Geloso and Murtazashvili 2021). Thus, an alternative approach to theorizing pandemic policy is needed.

Our core argument is that the concept of coproduction is a more useful tool with which to analyze pandemic response. The concept was originally developed by scholars at the Workshop in Political Theory and Policy Analysis at Indiana University to describe the relationship between the regular producers of public services (for example, police officers, college professors, health care professionals) and their clients (for example, citizens, college students, patients) (Parks et al. 1981; Brandsen and Pestoff 2006). Unlike consumer goods, many services (both private and public) require significant input from clients; that is, “the person being served is inevitably part of the production process” (Parks et al. 1981, p. 1001). Most preventative measures we discussed, including social distancing, fit this description. Thus, we argue that social distancing is best described as a coproduction process that requires efforts from both the regular producers (government authorities) and consumer-producers (citizens).

Coproduction theory stipulates that coproduction is technically feasible¹⁰ when either of the two types of relationships exist between regular-producer and consumer-producer inputs: substitutive and complementary. When inputs are substitutable, either the regular producer or the consumer-producer can independently produce the service, whereas both inputs are required when they have a complementary (or interdependent) relationship.¹¹

Many preventative measures in a pandemic require both substitutive and complementary inputs. As for social distancing, it can, in theory, be produced by citizens alone, but governments, no matter how omniscient, cannot produce it alone. If governments use inputs that are substitutes for citizen engagement, they are likely to crowd out the latter (Ostrom 2000a). Moreover, dependence on national or federal government can also crowd out efforts at regional and local levels (ibid.). Top-down efforts by the central government such as military intervention, policing, mass surveillance, and severe sanctioning are examples of government inputs that can be thought of as being substitutes for mutual monitoring and sanctioning. However, while these inputs can increase the private cost of violations, they will fail if many citizens are unwilling to

comply.¹² Even when citizens are moderately compliant, the resources expended to achieve monitoring and sanctioning goals will be far too great and the societal costs of overreaching too devastating to justify such strategies. Furthermore, such strategies can have retaliatory effects such as mass protests and civil unrest. In short, even when we ignore its crowding-out and retaliatory effects, coercion alone is insufficient to provide social distancing. Thus, the popular presumption that authoritarian regimes are better able to cope with pandemics is built on the false premise that citizens' compliance (their coproductive role) is given or irrelevant.

However, governments can also employ noncoercive inputs that are complementary to citizen engagement. With such measures, both crowding-out and retaliatory effects can be avoided. Unsurprisingly, in employing such inputs, governments must include nonstate actors such as thought leaders who inspire and entrepreneurs who find novel ways to enhance citizen participation and compliance. After all, the coproduction of social distancing is not merely a matter of effective policy design and implementation. Nonstate actors such as artists, pundits, and social media influencers can all play critical roles in providing messaging. For instance, to curb a COVID-19-induced rise in online bullying, the New Zealand government deployed adult-film stars in a successful "Keep It Real" online media campaign (Graham-McLay 2020). Thus, in thinking about effective complementary strategies, it is important to consider the pivotal role of the third sector in the coproduction of social distancing.

At the onset of the pandemic, because of the virus's rapid spread, overwhelmed health systems in hard-hit places, and uncertainty regarding the virus's effects on humans, more restrictive nonpharmaceutical interventions (mrNPIs) such as mandatory-lockdown orders seemed justified (Bendavid et al. 2021). However, as Bendavid et al. (2021) note, once we discovered a host of potential detrimental effects of mrNPIs, such as increases in rates of hunger, opioid overdose, domestic abuse, and suicide, and the dire economic consequences of such measures, these justifications were no longer valid. They find that mrNPIs, relative to less restrictive NPIs (lrNPIs), do not significantly reduce case growth in any of the ten countries included in their study. They further conclude that any reductions achieved via mrNPIs could have been achieved with less restrictive interventions. In fact, Gupta et al. (2020) find that a substantial share of the decline in people's physical mobility was a result of private responses—that is, voluntary social distancing—based on the available information about risks, and they also find that mobility declined before states adopted stay-at-home mandates. Thus, even though stringent measures were followed by a decline in case growth in many instances, much of this effect is likely due to private and endogenous civic responses to the perceived threat.

Even though more research is needed to evaluate the relative efficacy of voluntary and mandatory preventative measures, we have shown that government and citizen inputs have an interdependent relationship in the coproduction of social distancing. That is, the scope, scale, and intensity of government involvement directly determine citizen participation. The works of the Ostroms and other Bloomington scholars show that most public services can be provided only when citizens willingly engage in their production, delivery, and maintenance. This is more likely to occur when local agencies and authorities work closely with citizens and less likely to occur with national or federal mandates enforced by central agencies through coercion.

4. Policy Response: A Comparative Evaluation

Social distancing, as we have argued, requires well-defined complementary inputs from local authorities and agencies playing context-specific supporting roles such as monitoring and coordination. A central authority also has an important role in dealing with a pandemic. Social distancing can be effectively coproduced only when governments at all levels adopt strategies that are complementary to citizen engagement and remain vigilant so as to not crowd out bottom-up efforts. In this section, we briefly examine three broad types of roles that governments play to influence social-distancing behavior: (a) restrictions and mandates, (b) information generating and sharing, (c) interagency and interjurisdictional coordination. We then discuss their effectiveness given the highly coproductive nature of social distancing.

a. Restrictions and Mandates

Imposing severe restrictions is a policy approach that disregards the coproductive character of social distancing. To be sure, such measures may result in increased compliance rates in the short term. The fear of punishment deters many would-be defiers from violating social-distancing rules. Furthermore, such measures can also encourage conditional cooperators—that is, individuals who would defect if their neighbors did not comply—to conform. However, if the state lacks the capacity and willingness to continually impose harsh punishments, the effects are likely to dissipate over time. In the long run, as pandemic frustration and related psychological effects set in among citizens, the costs of monitoring (for example, surveillance costs) and sanctioning will increase proportionately. As illustrated in table 1, panel A, as the rates of citizen engagement in social-distancing efforts diminish over time, harsher restrictions are not likely to remain effective. The state can prolong the period of compliance by imposing even harsher punishments, but without effective monitoring mechanisms in place, they are also likely to fail.

In a balanced scenario, we argue, restrictions are limited and consistent with ex ante self-commitment (discussed in section 2). That is, citizens engage at the collective-choice level, at which they self-commit to mutual monitoring and sanctioning rules, because they understand the risks and costs of noncompliance. In this scenario, the role of the state is equivalent to that of a third-party mediator that facilitates the collective choice agreement or that of a third-party enforcer that implements it. The collective-choice process may involve diverse methods in different jurisdictions. One way is for a state to solicit citizen input regarding the acceptable level of restrictions.

Table 1. Social-distancing coproduction matrix

Coproduction (citizen participation) ➔	Low	High
Government policies ↓		
A. Restrictions/mandates		
High restriction	Short term: uptake of social distancing Long term: social distancing not followed, as surveillance and policing not possible	Short term and long term: Uptake of social distancing
Low restriction	Limited social distancing, failure to contain the spread of disease	Balanced outcome: social distancing implemented when necessary Consideration needed when disease latency is high and there is high chance of asymptomatic transmission
B. Information sharing		
Trust-enhancing role	State's ability is diminished because of lack of citizen participation Citizen coproduction may increase over time	Maximum coproduction of information
Trust-depleting role	Government distrust leads to limited adherence to preventative measures	Ideal case: strong nonstate actors/agencies can mobilize citizens Non-ideal case: citizen coproduction declines
C. Coordination across organizational units		
Effective coordination role	Low compliance Significant discontent ensues when citizens are unwilling to comply	High compliance because govt role complements citizen engagement
Ineffective coordination role	Failure to achieve goals Lack of accountability	Pockets of successes in the short term Long-term success is questionable

Of course, where citizens have strong proclivities toward noncompliance, light restrictions will not yield favorable results. A high level of noncompliance and the resulting rise in case numbers in such a jurisdiction can impose negative externalities on neighboring jurisdictions. This is particularly problematic in the case of diseases that have long latency periods (time between exposure and appearance of symptoms) and high mortality rates. In the case of COVID-19, despite high transmission rates, mortality rates are relatively low, which leads to nonconformers downplaying the threat of the virus. Thus, nonconforming citi-

zens are likely to view light restrictions as nuisances and are likely to find ways to circumvent them. Thus, when citizens fail to comply, the state's (limited) restrictive role serves little to no purpose.

b. Information Sharing

Both states and citizens have critical roles in sharing information related to the transmission and severity of a disease. A state, through its various agencies, can compile and present accurate information to the public that can complement citizens' own knowledge generation and transmission. It can effectively communicate vital information regarding the etiology of the disease, preventative measures, treatment methods, and reporting mechanisms to local authorities and complement their information-transmission efforts. Effective communication of evolving conditions and new knowledge can help dispel myths and conspiracies that tend to take shape during crises. Meanwhile, citizens play an important information-sharing role by reporting incidences of exposure and infection to local health authorities.

It is helpful to think of a state's information-sharing role as either trust enhancing or trust depleting (see table 1, panel B). When state actors effectively and accurately communicate known facts and evolving conditions, citizens can have confidence in them. In such cases, citizens are more likely to reciprocate by reporting cases, exposures, and violations of rules. This creates a positive feedback loop, wherein the state is more likely to gather accurate information and provide better estimates of disease prevalence and risk that can inform appropriate guidelines. In contrast, when state actors deliberately misinform the public by downplaying or exaggerating risks, citizens' confidence in them is low. Citizens then have limited incentives to report cases and violations or to adopt appropriate preventative measures (Han et al. 2020). This leads to inaccurate estimates and uninformed policy guidelines.

c. Coordination across Organizational Units

The third role that a state can play—related to the above two—concerns coordination among businesses, agencies, and jurisdictions. When markets are present, the price mechanism serves to coordinate. Through decentralized mechanisms that allow both competition and cooperation, prices serve to allocate goods and services by signaling producers and consumers to adapt to changes in preferences and resource availability. However, for preventative measures such as social distancing, the price mechanism is unavailable. Thus, to attain social-distancing goals, different organizational units (for example, businesses) need to be able to coordinate their plans and decisions.

This is important for two reasons. First, unlike during nonpandemic times, when differences in individual behavior are cherished or at least tolerated, pandemics create conditions wherein consumers and citizens need to be able to set uniform expectations about people's interactive behavior. In the absence of clear behavioral expectations—for example, if university students are unsure whether their classmates will socially distance in classrooms, laboratories, or bookstores—compliance is less likely. Thus, organizations need to coordinate to set minimum standards. In some instances, commercial associations (for example, chambers of commerce), major business franchises (for example, Costco), or public agencies (for example, a city water department) can set best practices and protocols to promote social distancing within their local communities. However, their uncoordinated efforts may be insufficient, given the global scale of externalities and the differences in costs of adopting preventative measures.

Second, various governmental units (for example, government agencies) with competing or overlapping interests may need to coordinate their plans. Thus, a government can act as a center to reduce the costs of coordination. Specific policy actions include providing a common meeting platform, facilitating communication among governmental units, and creating mechanisms to complement bottom-up efforts.

The coordinating role of government is necessary but insufficient for attaining social-distancing goals. When citizens are willing to comply, the government can complement their efforts if it is able to create effective coordination mechanisms. However, with unwilling citizens, effective coordination alone will not

succeed. And when citizens are willing to engage in social distancing but coordination failures are rampant, social distancing may be achieved in the short run but compliance rates are likely to dwindle in the long run.

In summary, viewing social distancing as a coproduction problem allows us to evaluate how effectively each governmental role fosters citizen engagement and compliance. As we have discussed, although a central authority serves important functions during a pandemic, one needs to remain vigilant that certain coercive functions do not crowd out citizens' involvement and ultimately undermine citizens' engagement.

CONCLUSION

Despite the global scale of the pandemic, using national or global approaches to limit the spread of COVID-19, as if it is a national or global public good problem, disregards the coproductive nature of many preventative measures. Although a few countries have effectively contained the spread using a seemingly centralized approach, we must recognize that their successes are largely due to strong support from their own citizens (Jefferies et al. 2020; Summers et al. 2020). For instance, Wang et al. (2020) attribute Taiwan's early successes to two main factors: (1) its government adopted lessons from the country's 2003 SARS experience and developed robust public health response mechanisms to take rapid action, and (2) special attention was paid to ensure that government decisions were "both culturally appropriate and sensitive to the population" (p. 1342). Besides taking early policy actions, the government adopted measures to reassure the public by communicating "accurate and transparent information regarding the evolving epidemic" through daily briefings and health messaging (ibid.). Government actions were generally well received and reciprocated by citizens, and compliance with social-distancing and mask-wearing norms has remained high throughout the pandemic, even during the period when no fines were imposed for violations (Blanchard 2020).

Findings from the successes in Taiwan, New Zealand, and other countries currently inform the scientific community's core recommendations in combating the pandemic (Summers et al. 2020). As we have argued, despite clear evidence of the coproductive role of citizens, many of these recommendations overemphasize what governments can do. This is the reason why government policies based on successes in one country do not produce favorable results in different countries. In this paper, we present an alternative, Ostromian view of pandemic response as a set of bottom-up collective action problems with nested externalities at multiple scales. In contrast to the dominant theorizing of pandemic response—and of social distancing in particular—as one of optimal policy planning and implementation, we argue that social distancing is a coproduction problem. This approach regards citizens not as passive responders to government stimuli but as active participants or coproducers of preventative measures. Thus, citizen participation is essential for social distancing. The state also has a crucial and well-defined coproductive role to play in achieving social distancing goals. However, it is not as simple as manipulating policy parameters from the top and leveraging the state's coercive powers. Instead, analysts must carefully consider various etiological, cultural, and social factors, such as the nature of the virus, informational asymmetries, social norms, beliefs, socioeconomic heterogeneities, informal labor markets, and available scientific knowledge.

NOTES

- 1 The Diamond Princess cruise ship in Japan reported an R_0 of 14 (Billah et al. 2020).
- 2 The median incubation period is 5.1 days.
- 3 Some scholars debate whether the correct terminology is "physical distancing." We use "social distancing" because it is a more popular term and is well understood.
- 4 In this sense, pandemics present challenges similar to those of climate change. Climate change also presents a global challenge with externalities that transcend national and geographic boundaries (Ostrom 2012). As Elinor

- Ostrom (2000a, 2012) argues, this fact has been the basis of the inaccurate position that global problems necessarily have top-down global solutions.
- 5 Coproduction refers to the notion that many services are produced by both the producer (regular producer) and the client (consumer-producer). In other words, inputs from both regular producers and consumer-producers are essential. We further discuss coproduction in section 3.
 - 6 Ostrom's studies show that ex ante self-commitment to mutual monitoring and sanctioning mechanisms is an essential feature of robust CPR systems (Ostrom 1990).
 - 7 Risk here is defined as the probability that a person will get infected with a disease. Perceived risks and benefits are inherently subjective and can also influence behavioral outcomes (for example, Rayamajhee et al. 2020a).
 - 8 On the other hand, religious associations can also facilitate the spread of the virus (Ryall 2020; Vermeer and Kregting 2020). This indicates that they face relatively low decision costs; whether the decisions encourage or discourage social distancing is a different matter.
 - 9 Despite a growing body of empirical research, particularly in the fields of public administration and public policy, coproduction remains a loosely formulated concept and is described by some scholars as a "woolly-word" in need of better theorizing (Ryall 2020; Vermeer and Kregting 2020). For a systematic exploration of the concept within a polycentric framework, readers are directed to Aligica and Tarko (2013).
 - 10 Parks et al. (1981) note that technical feasibility is a weak constraint and that economic and institutional considerations influence whether a service can be coproduced.
 - 11 For example, inputs from municipal trash collectors and local citizens can be substituted for each other: trash will be collected if either of the two inputs is present. Education, on the other hand, requires efforts from both teachers and students, as they are tied in an interdependent relationship (Parks et al. 1981, p. 1003).
 - 12 Thus, while they may be technically substitutes for mutual monitoring and sanctioning, economic and institutional constraints (for example, basic human rights and international treaties) may deem them infeasible. For instance, with little to no citizen compliance, the costs of military intervention and policing reach prohibitive and dangerous levels. Furthermore, these measures have to rise to levels that are certain to entail trampling on fundamental rights, thus leading to civil unrest and further noncompliance.

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Entangled Political Economy of the Covid-19 Pandemic

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Abstract: The Covid-19 pandemic has substantially altered economic, social, and political relationships. The relational consequences of the pandemic will be interrogated using the lens of “entangled political economy” (EPE). The EPE approach explicitly recognises human interactions generating complex economic-socio-political phenomena, yet Covid-19 clarifies the synergies between human, biological, and physical systems in maintaining both productive and healthy relations. The pandemic has induced powerful crisis responses, via governmental regulations and social norms, substantially depressing economic activity. Contrary to perceptions Covid-19 led to a state of economic “hibernation,” EPE theory suggests extensive re-entanglement of relationships that influence the robustness of productive economic exchange. The onset of the coronavirus pandemic has also escalated the significance of health care operations in the modern economy, entrenching health as a site for continuing governmental growth. EPE presents novel perspectives regarding the need to adapt to, and ultimately mitigate, diseases threatening human life, liberty, property, and happiness.

Keywords: Covid-19, entangled political economy, networks, pandemic, public health

1. INTRODUCTION

Covid-19 is an infectious disease attributable to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and is spread through droplets of mucous and saliva from persons who are infected. The most common symptoms of Covid-19 include fever, cough, fatigue, breathing difficulties, and loss of smell and taste senses, which appear to be experienced mildly in most cases. In more severe cases of infection, symptoms may include pneumonia and respiratory failure, compromised function or failure of other vital organs (e.g. kidneys, liver), blood clots and strokes, septic shocks, and, ultimately, death. The distribution and intensity of this coronavirus has assumed pandemic proportions. At the time of writing (February 2021) there were close to 106 million Covid-19 cases globally, and over two million fatalities attributed to the virus (Dong et al. 2020).

Much of the academic research and popular commentary surrounding Covid-19 has focussed upon the bio-physical effects of the disease upon individuals, as well as the trend profiles of aggregate statistics in regard to caseloads

and fatalities. The onset of Covid-19 has instigated sudden transformations along economic, political, and social dimensions, which have already instigated a significant volume of studies trained upon their implications at micro and macro scales. The coronavirus pandemic, and the public policy responses to it, have also exerted profound relational effects at an intermediate, meso-level scale, some of which are yet to be well understood. The primary motivation of this paper is to assess the manner in which Covid-19, and human responses to this disease, have impacted economic and political relationships.

This paper aims to add to the literature by appraising the economic and political impacts of the pandemic through the prism of “entangled political economy” (EPE) theory. Developed by George Mason University economist Richard E. Wagner, EPE blends insights from complexity, evolutionary, and network theories to explain economic-political activities as being intertwined in overlapping exchange relationships along competitive and collaborative dimensions. In contrast to mainstream political economy conceptualisations of a solitary, unified political actor intervening to alter economic conduct in Paretian-efficient directions, EPE supposes heterogeneous economic and political enterprises all operate, and entangle with one another, within the same societal plane. Ensuing patterns of entanglement are emergent features of human interaction, and, as such, are consistent with political economy traditions that stress the emergent- or spontaneously-ordered development of institutions. This paper considers how EPE insights may be applied to better appreciate the key implications of economic policies instigated during the Covid-19 pandemic.

The structure of this paper is as follows. Section 2 considers the effect of pandemic policy responses upon the structure of economic relationships. This is followed (Sect. 3) by a discussion of the broad features of pandemic-period entanglement for the health sector. Section 4 presents a brief set of concluding observations.

2. ENTANGLEMENT AND AGILITY: IMPACTS OF COVID-19 POLICY ON INTERTWINED ECONOMIC RELATIONS

Mainstream economic comprehension of productive activity has been long criticised for its tendency toward reduction and, consequent to this, a lack of realism. As described by Potts (2000) the combinatorial dimensions of economic organisation are swept aside, as the for-profit economic enterprise is implicitly assumed as functionally equivalent to its production function. Furthermore, the advent of representative, and homogenised, accounts of economic agency suggest that the production function (a.k.a. the firm) occupies the field of economic activity. In a similar vein, Wagner (2010, p. 133) suggests: “the multiplicity of goods and services actually produced can be reduced to a single good designated simply as output. An economy surely cannot get any simpler than its representation through an aggregate production function.”

In their effort to present a more realistic economic account, researchers specialising in EPE indicate that *an economy is constituted of complex and evolving networks of relationships between individuals and groups, for the purpose of distilling competencies, insights, skills, and other forms of knowledge for economic gain*. From an EPE standpoint the terminology of “production functions,” “representative agents,” and the like, obscure the complicated patterns of relations that have emerged to sustain economic activity. The for-profit enterprises which give rise to much output generation, and the employment and investment going with that, are clustered ensembles of relationships, wherein participants are incentivised to the mutually beneficial service of others.

Economic interaction is by no means monopolised by for-profit entities. It is well known that alternative, non-profit organisations often interact with for-profit enterprises, influencing the terms and conditions of economic coordination and governance (Aligica and Wagner 2020; Eusepi and Wagner 2011). Economic activity is further conditioned by policy and law, culture and social norms, as well as factors such as personal tastes. The relations formed in entangled political economies, and the incentive structures for people considering engagement in such relations, are highly sensitive to shifts in expectations, appearance of social tensions, and other conditions bearing upon interactional possibilities. The novelty of EPE is that it reinforces the idea that economies are the by-product of highly-contextualised relationships forged by indi-

viduals, and collectives, across intersectional domains of human activity. Insights raised by EPE scholarship can be put to the service of understanding crisis situations, such as the Covid-19 pandemic.

Individuals are not passive in the face of epidemiological and other risks, provided they receive good information and are empowered to respond in ways reflecting their subjective perceptions of the relative benefits and costs of adjusting conduct. A hallmark of market economies and open societies is that a relatively widespread measure of latitude is afforded to individuals, in order to apply their entrepreneurial insight and innovative capabilities to responding to changing conditions. Networked patterns of relations are subjected to entanglement, re-entanglement, and in some cases, disentanglement over time. It is clear that political enterprises play a role in this dynamic process, and that political concerns can become embroiled in ventures otherwise ostensibly trained upon material betterment.

Much of the entanglement arising within an economy is practically facilitated by biological and physical dimensions. Whilst intangible digital and services economies are becoming more prevalent, many combinatorial aspects of production and exchange involve human bodily senses of hearing, sight, smell, touch, and taste. As McCloskey and Klamer (1995) have noted, economic performance is undergirded by communicative processes (such as speech acts) between human beings in close proximity. Intersubjective interpretations of body language and other physical cues may also prove indispensable in the conduct of market exchanges (Manzini et al. 2009). Economic entanglements which involve facial expression, bodily movement, and physical contact or observations between people in shared spaces are also seen as instrumental in building rapport and trust between transactors.

Given the contagious nature of coronavirus, numerous legal edicts and regulatory policies were introduced to impede or reduce human physical interactions conducive to viral spread. Although there was policy variability (Economist 2020; Hale et al. 2020a; OECD 2020c), our basic point is that policy generically attended to the restriction of mobility and proximity. Furthermore, these measures have been unprecedented. For the many, whose livelihoods depend upon the encounters of handshakes, winks, and smiles—not to mention the entanglements of contract and exchange—policy responses to Covid-19 have proven highly disruptive. Policymakers described their responses to coronavirus as efforts to invoke a temporary “freezing” or “hibernation” of economic activity. The implication is that, post-pandemic, productive activities undertaken by individuals and enterprises should ideally proceed as they were prior to the spread of the disease.

From an EPE perspective an economy cannot be realistically perceived as being amenable to toggling between states of activation, deactivation, and reactivation. Indeed, it is a conceited political position to believe that regulatory (or other) policies can revive the order of a complex, evolutionary, and entangled economy, precisely as it once was prior to the Covid-19 contagion. The networked pattern of interactions, observable at any given point in time, reflect divergent interpretations, meanings, practices, and understandings concerning the dedication of productive activity to the realisation of economic value. Whilst the effect of government pandemic policies is to re-entangle some relationships, and disentangle others entirely, many of these measures induce certain structural realignments which cannot be easily reversed.

Economic, political, and social systems are forever in a state of flux, so it is nonsensical to consider Covid-19 responses having the literal effect of freezing or hibernating productive relations. But it is conceivable that political delegitimation of certain economic activities, on public health grounds, may contribute to durable shifts in preferences after regulatory restrictions have relaxed. For example, sizeable numbers of individuals may refrain from indoor gatherings in bars, restaurants, cinemas, theatres, and similar venues for some time. However, it is impossible to predict with any great certainty the extent and severity of initial disentanglements, and any eventual re-entanglements, with respect to economic activities considered more conducive to disease spread. Indeed, “there is a significant ‘knowledge problem’ for policymakers in understanding how expectations will be changed by the pattern of events or by policy interventions—and this problem is especially severe in a context of heterogenous individuals with divergent ideas whose actions cannot be reduced to those of a ‘representative agent’” (Pennington 2020, p. 6).

An understudied research topic for EPE is the relationship between entanglement and agility.¹ The term “agility” is used to convey the ability of agents to respond swiftly to change, in preferably an efficient and effective manner. It appears that the agility of economic actors will have significant implications with respect to the establishment of vibrant and robust post-pandemic networks. In a political context there is little question that legislators and bureaucrats, particularly in middle- and high-income countries, have displayed a certain agility in responding to Covid-19. Hale et al. (2020b) showed that several countries transitioned toward “highly stringent” pandemic policy responses within roughly 50 days of the first confirmed Covid-19 fatality within their jurisdiction. Information from another policy index—the CoronaNet COVID-19 Government Response Event Dataset—similarly illustrates rapidity in pandemic responses during the first three months of 2020 (Cheng et al. 2020). The epidemiological efficacy of stringent pandemic responses—such as border closures, closure of high personal-interactivity businesses, and residential curfews—will be debated for years to come.

Our primary concern here with agility focuses upon the likely impact of the policy-induced economic downturn for economic enterprises to gainfully re-entangle. To be sure, certain economic enterprises have demonstrated remarkable agility in response to the disruption of their supply chain relationships, and repressed economic conditions more generally. Allen et al. (2020, p. 41) refer to the examples of “[r]etailers have reduced their reliance on touch screens, provided hand sanitizer upon entering stores, directed customers to use contactless rather than PIN security for card payments, introduced screens to protect retail workers, and done much rapid innovation in home delivery and interaction minimising ‘click and collect’ services.” There are case examples of beverage manufacturers converting from alcohol to hand sanitiser production, restaurateurs adjusting their operations from in-house dining to takeaway food services, and so on. Certain economic networks, such as agricultural supply chains, appear to have remained resilient in the face of supply and consumption shocks (e.g. Hobbs 2020). Each of these cases, and more besides, involved a complex process of re-entanglement by economic enterprises, with different producers or consumers, in order to remain viable.

What of the long-term impacts of coronavirus policy responses for productive entanglement possibilities within the private sector? One might rhetorically ask about how much economic damage could have been averted, and to what extent pre-pandemic entanglement would have been preserved, if economic institutions and policies embraced the ideas of open (or “permissionless”) innovation and commercial experimentation (Thierer 2016). The agility of economic actors to discover new and improved sources of economic value and, in so doing, formalising networks with others to formalise such projects of betterment, is critically dependent upon the entrepreneurial function. Wagner (2010, p. 73) emphasises that “entrepreneurial action...occurs within a networked ecology of enterprises of various forms, and with those particular forms also being established through entrepreneurial action.”

One of the major concerns with governmental policy transcends the adverse, yet, arguably, the more immediate, economic consequences of forcibly induced disentanglements, and in some cases re-entanglements, in response to a serious public health problem. The instigation of stringent regulatory policies—and the so-called “yo-yo” effect of alternating periods of lockdown and reopening, as cases and/or fatalities fluctuate, in regions such as Europe—introduces significant instability for agents in the short term, as well as significant uncertainties in the broader economic outlook. Periods of crisis inject new sources of turbulence, comprising the abilities of individuals and firms to confidently engage in economic calculation, entrepreneurship, and innovation, as well as establishing those relationships necessary for growth and development.

Compounding this is the possibility that pandemic policies may not be completely wound back, even with a potential coronavirus vaccine. Such a development has the potential to foreground a new feature of discretionary political authority in the societal landscape, together with a relatively greater scope of political entanglement within the interaction order. The effect of ratcheting government seems also apparent at micro and meso scales of economic engagement. How can someone trust the integrity of contracts, or have confidence that property control and usage will confer a reasonable rate of return, when governments can

enact policies obligating the private sector to massively disentangle, or re-entangle in ways that confer reduced economic value, in an instant? This phenomenon is referred to in the political economy literature as “regime uncertainty” (Higgs 1987), and has been identified as a contributor to the severity and duration of crisis episodes.

It is difficult to firmly establish the degree of regime uncertainty resulting from Covid-19 policy responses. However, there are some indications that stringent policies have been fuelling uncertainties about the present shape and future direction of the economic environment. A study of expectations by U.S. small businesses during the early pandemic period suggested that business closure risks were associated with the expected length of the Covid-19 crisis but, then again, there were wildly varying beliefs about the likely duration of pandemic-related disruption (Bartik et al. 2020). Several proxy measures for uncertainty have escalated, as the economic shocks presented by the coronavirus pandemic had become increasingly apparent (Altig et al. 2020). Whilst these studies provide indirect, and selective, representations of uncertainty, they surely hint at our suggestion that the agility of certain economic enterprises to forge productive, mutually beneficial entanglements have been compromised.

Recessionary conditions are construed here as representing a rebalancing within the interaction order from relatively high to relatively low degrees of networked entanglement. Of course, it is apparent that there remain clusters of high entanglement within certain parts of the economy. These clusters reflect an even tighter web of connections between economic and political actors, and emerge as the result of public policies directing fiscal or regulatory privileges toward certain concerns. Later in this paper reference is given to the “peculiar business” of an increasingly entangled health sector, that has received significant policy support during the pandemic.

The provision of financial bailouts or concessional loans for politically-sensitive industries (e.g., aviation, hotel accommodations, transport logistics), measures to relax bankruptcy laws for heavily-indebted firms, and so on, is also noted. The primary concern is with the implications of pandemic-period wage subsidy schemes in countries such as Australia, Canada, New Zealand, Spain, and the United Kingdom. It had been estimated that, by May 2020, some 50 million jobs were covered by wage subsidies and similar job retention schemes—ten times greater than the numbers of jobs treated under similar arrangements during the 2008–09 “global financial crisis” (OECD 2020a).

Despite their extensive coverage, some criticisms have been levelled against wage subsidies. One of the more common of these is that those workers eligible for the subsidy arrangements are effectively treated as gainfully employed—even if there are minimal (or, in some cases, no) hours worked, and the hiring business is closed owing to a lack of general economic activity or enforcement of shutdown regulatory edicts. The effectual distortion of unemployment statistics under wage subsidy schemes injects ambiguity and confusion concerning the true state of the economy, and at the same time facilitates political rhetoric to the effect that the Covid-19 crisis is not as economically deleterious as initially feared. This is consistent with Wagner’s (2020b) insight that, given the impossibility of action imposing upon the *entirety* of an economic system, macroeconomic phenomena are properly understood as representations of statistics, projections, beliefs, and ideologies with some influence on micro- and meso-level entanglements.

Downturns are seen by some economists as an opportunity to recalibrate previously-existing economic connections, in preparation for a future period of economic and productivity growth. In the language of Caballero and Hammour (1994), for example, the Covid-19 recession might fruitfully “cleanse” an economy of low value-added pursuits today, paving the way for more robust, value-generating entanglements tomorrow. By subsidising the wage costs of employees of economic enterprises, it can be argued that government wage subsidies are an attempt to preserve economic connections which existed prior to stringent pandemic policies. In other words, governments are attempting to repress the cleansing function of recessions, to the extent this actually exists. As noted previously, it would be highly unlikely that governments can ensure the return of pre-Covid entanglements given the broader impact of policies upon economic expectations, supply chain robustness, and the like.

It needs to be clearly stated that entanglements are a necessary condition of economic interaction. The networks which catalyse entanglement are conducive to exchanges of finance and resources, information sharing, and other operations conducive to the generation of value. Even in an entangled political economy exemplified by constrained involvement by political enterprises, perhaps arising from the maintenance of rules promoting a liberal economic order, entanglements will still emerge. From a liberal perspective the reason of rules—pertaining to such matters as contractual freedom, preservation of property rights, and freedom of economic entry and exit—is that it ensures that decentralised, polycentrically-situated entrepreneurs and other economic actors are afforded the dignity and respect to self-select their own operations managing resource transformations, and entanglements to fructify such operations. The resulting networks of economic intertwinement under a “constitution of liberty” are held to be dynamically robust, in that individuals and their enterprises avoid the knowledge and incentive problems otherwise associated with extensive political involvement in economic operations (Pennington 2011).

It is understandable that policymakers would seek to minimise the economic disruptions arising from the Covid-19 pandemic. Our argument is that wage subsidies move well beyond the accepted role of governments to establish abstract and generic rules of economic interaction, thrusting policy concerns even more deeply into the realm of operational settings of economic enterprises themselves. Concerns have been raised in some quarters that the “politico-operational creep” of subsidisation, together with the radical easing of fiscal-monetary policies, will promote the creation of “zombie firms,” whose existence will be dependent upon continuation of public sector subsidies even as the worst of the pandemic has eased (e.g. Julius 2020; Sharma 2020; for a discussion of zombie firms pre-pandemic, see Gouveia and Osterhold 2018). The consequences of continuing political-organisational creep are also potentially significant. Unless there are clear and consistent plans to swiftly withdraw wage subsidies, and other fiscal and regulatory privileges for corporations, the interaction order of the economy is likely to be infested by an “accumulation of legislative redress of the negative consequences of meso trajectories by the so effected who could then organise into political units” (Potts 2005).

Scholars versed in EPE studies have often referred to the potential for “monstrous moral hybrid” entities to become foreground models of economic organisation within society (Wagner 2016, 2017). The operationalisation of these hybrids reflects a commingling of private and public ordering precepts, in such ways which distort entrepreneurial prioritisations to competitively discover profitable means of engagement with market participants. It would seem the “zombification” of economic enterprises—courtesy of wage subsidies appearing to aim at overriding emergent adjustments (including of a cleansing nature) amongst product and factor markets—represent a real-world approximation of the monstrous moral hybrids discussed by Wagner and other EPE theorists. Furthermore, it is anticipated that proposals to reverse pandemic-era wage subsidies, and other schemes aiming to preserve pre-existing business operations, will elicit a process of intense contestation and tectonic rupturing between rivalrous economic, political, and social interests.

3. BIG G AND THE COMMANDING HEIGHTS: THE PECULIAR ECOLOGY OF HEALTH CARE

Long before the initial detection of Covid-19 in Wuhan, China, and its rapid global spread, academics and commentators, alike, recognised the prominent status position and extensive roles of health care. Whether measured in terms of expenditure, employment, or investment, general statistical trends indicate strong growth in the flow of resources to health care. Techno-social developments such as improvements in technology and population ageing have contributed to the increasing supply of diverse medical treatments—ranging from pharmaceuticals to acute hospital care. The prominence of health care led Kling and Schulz (2011) to proclaim it (along with education) as embodying the “new commanding heights” within increasingly services-oriented modern economies.

The meso-centric orientation of EPE would suggest that health care represents an ecology of purposeful interactions between different agents to meet the health needs of patients in a variety of settings. Per-

sonnel responsible for healthcare provision—such as general practitioners, medical specialists, nurses, and physicians—provide care labour and treatment services for patients in accordance with a complex array of knowledge and practices, in turn informed by contracts, credentials, policies, procedures, skills, standards, and technologies. The provision of health care is channelled through diverse economic and political enterprises, as well as through other organisations such as not-for-profit entities, and these efforts are supported by resources financed by a range of sources. Even a domain of organisation and practice perceived as increasingly incorporating monocentric qualities, such as health care, retains some assortment of interactions and relationships, albeit with sufficient coherence and purpose to meet the health needs of communities.

Health financing and provision is understood by EPE researchers as conducted by a network of participants. It is not presumed that the resulting entanglements are evenly distributed amongst all of the health care participants; in other words, some individuals and organisations conduct activities which are somehow conceived as being more pivotal than those carried out by others. Economist Roger Koppl (2002) has described the unevenness of economic-political entanglements as attributable, to some degree, by the existence of “Big Player” network effects. Big Players both possess immense discretionary power over allocational and distributional decisions, and a significant degree of immunity from competitive economic pressures. The suggestion is that the presence of Big Players has become an elemental feature of the health care sector of many countries (for a recent illustration of this phenomenon in the U.S. context, see Case and Deaton 2020).

The type and extent of influence of health care Big Players may vary in accordance with their specialised range of activities. For example, a relatively small number of large, multinational corporations tend to dominate the production of, and investment in, pharmaceuticals. Furthermore, pharmaceutical enterprises are seen as a major influence upon drug prescription practices within medical facilities and the conduct of policies with respect to drug subsidisation, and health insurance, as well as generic competition and innovation policy. As mentioned previously, political enterprises are typically heavily intertwined with other participants within the broader healthcare system. This is evident with respect to hospital facilities, for example, wherein the public sector tends to assume a dominant role providing complex, acute care procedures. Public sector bodies, and the officials overseeing them, play an important role in classifying diseases, and the medical treatment regime for them, as well as determining care standards to be delivered to patients. The presumption of a relatively tight clustering of health care relationships would appear reinforced by the function of legislatures as an organisational-institutional site for the political negotiation and assent of bargains between Big Players, and other influencers, over the provision and financing of health care services (Wagner 2012).

The Covid-19 pandemic has surely increased the relative luminosity of health entanglements, relative to others on the same societal plane of interactivity. Within this, growing public attention and activity has turned toward those linkages attending to public health and associated activity (e.g. hospital care of patients with severe symptoms). There are numerous anecdotal examples of new and strengthened health care entanglements in response to coronavirus. Governments called upon existing health care workers to repurpose their tasks toward the care of those suffering symptoms, as well as seeking retired medical professionals to return to the workforce. Health political enterprises engaged in procurement processes for additional personal protective equipment for nurses, physicians, and other medical staff, such as gowns and masks, as well as for equipment, such as coronavirus testing kits, and ventilators for patients suffering severe respiratory problems. Public sector entities sought to build additional health care infrastructure, such as physically-distanced telehealth facilities, as well as makeshift testing and care facilities for those suffering the illness. The relative expansion in the importance of public sector health Big Players was accompanied by a Covid-19 vaccine race by major pharmaceutical companies, and prestigious biochemistry and medical academics.

Prior to the pandemic the general economic consensus was that public sector health care spending (expressed as a share of gross domestic product) would increase throughout this decade. The presentation of aggregate health care statistics, such as the expenditure-to-GDP ratio, has proven fertile ground for

economic theorisation, in an effort to explain the underlying drivers of observed trends in health sectoral growth. William Baumol famously explained that rising health care costs is attributable to efficiency limitations arising from the personal care dimensions of medical treatment regimes, whereas James Buchanan (2001 [1990]) alluded to a lexicographical nature of health demand which drive increasing outlays on healthcare. Other explanations, such as the insensitivity of individual consumers to the tax-costs of subsidised services, exist to explain the economic evolution of healthcare to its present dominant status.

Whilst the explanations for the increasing presence of health care in the economic, political, and social landscapes remain insightful, statistical representations alone perhaps have a habit of concealing, as much as revealing, the nature of healthcare activity. An EPE perspective would emphasise, in a manner similar to Cox et al. (2020), that governmental spending is not functionally homogeneous. Spending is conducted by an array of political enterprises—authorised by an underlying legislative authority but, practically, allowing for some measure of discretion exercised by ministerial members of the political executive. The spending is typically given legal and operational form by contractual agreements and procurement obligations, giving rise to entanglements with beneficiaries situated elsewhere within the economy. The expenditure is financed either through tax attachments by political entities onto viable commercial entities, or more likely, given the severe downturn of regular economic activity, through some other financing vehicle, such as borrowing.

There is selective evidence available to the effect that the Covid-19 pandemic has solicited a wave of new entanglements in the form of contracts between governmental authorities, private sector concerns, and other entities.² These contracts pertain to the acquisition of medical devices and equipment to treat the anticipated uptick in coronavirus patients in health facilities, and diagnostic goods and pharmaceutical products to treat the sick, as well as agreements engaging construction work to expand hospital and other facilities. The presentation of funding and service provision opportunities might be considered to open rent-seeking opportunities for health care organisations, interest groups, and other individuals and groups (e.g. Daumann and Follert (2020)).

There seem little doubt that numerous, and perhaps politically well-connected, economic enterprises have gained from the onset of Covid-19 pandemic policies by governments around the world. As mentioned previously, economic entrepreneurs have seized upon biopolitical entrepreneurship to re-purpose their existing economic activities, and connections, toward health production. To some extent, such strategic, organisational, and practical reorientations coincide with the reality of a repressed environment elsewhere in the economy. Even so, the significant economic-political attention afforded to the pandemic has likely altered perceptions regarding the relative importance of public health considerations, both for individuals and society as a whole. As part of this, entrepreneurs and other economic actors perceive profitable opportunities as part of efforts to help respond to Covid-19.

The implementation of public health orders in various countries is one potential avenue through which lobbying and related interactions between economic and political actors may be energised. In the U.S. and numerous other countries, regulatory declarations have been used to designate certain kinds of private and public economic activities as “essential” to remain open, whereas others may be deemed “inessential” and potentially subject to enforced closure. Inherent knowledge problems arising from the subjectivity of preferences held by innumerable numbers of individuals, and not to mention the entangled nature of economic activities, defy an impartial political separation of productive activities, or their outputs, along the lines described here. Political determination, nonetheless, to answer the imponderable question as to what is “essential,” and not so, would seem to invite politically well-connected actors to articulate for others what ought to remain available and open. As described recently by Redford and Dills (2021) a combination of strategic interest group pressure, together with moralistic notions of repugnance, may explain shut downs of alcohol and drug retail in certain U.S. states during various stages of the Covid-19 pandemic. In effect, the dominating position of health care, and public health perspectives (including over questions regarding the appropriateness of private consumption matters), appears to have become *even more entrenched* as the coronavirus becomes a focal point of economic-political attention.

The re-entanglement of manufacturers and other business concerns into the health production space has been overlaid with neo-protectionist justifications about the need for domestic “self-sufficiency,” ironically in the face of politically-induced trade restrictions and supply chain disruptions. As noted by the OECD (2020b), governments also reconfigured contracting and purchasing advisory guidelines and policies to assist domestic political enterprises in acquiring goods and services, amidst an increasingly competitive procurement environment exemplified by rising product prices and supply limitations. Governments in advanced countries have also activated export bans and restrictions on the sale of medical equipment and products. The assessment of trade economists such as Razeen Sally (2020) is that this pandemic has merely accelerated “de-globalist” political tendencies which have been increasingly conveyed in political debates of recent years.

A contextually- and situationally-aware description of action at the meso level suggests that the elevation of Covid-19 as a public health crisis would both incentivise and rationalise certain entanglements which expand the boundaries of health care activity. Even so, there are some views to the effect that Covid-19 might depress other aspects of health care activity and expenditure in the short term. For instance, a rapid increase in pandemic-related spending maybe offset, at least partially, by cancellations of elective and non-urgent treatments (EIU 2020). In other words, the non-treatment of non-coronavirus medical cases represents a temporary abeyance or permanent deactivation of pre-pandemic connections between medical professionals and their patients. Public health authorities, politicians, and other relevant figures within the health arena have pleaded with populations to engage in physical distancing, and other behavioural adjustments, to “flatten the curve”—that is, to slow the spread of a virus which otherwise risks overwhelming health system capacities. A potentially unanticipated consequence of such exhortations is the non-presentation of other patient groups with serious medical issues, such as cancer, diabetes, heart disease, and so on, with delays in those other treatments likely to aggregate health care cost pressures longer term (e.g. Maringe et al. 2020).

The general pattern discerned amongst developed countries in recent years is that governmental activity within the health care arena has assumed an increasingly monocentric quality. At least on an anecdotal basis it would appear that the pandemic has accelerated this trend. This tendency in health care interacts with an even broader impetus toward monocentricity in policy advisory and development processes within the public sector as a whole. With respect to the latter, generalised monocentricity may be seen in such developments as power concentrations in the governing political executive, delegation of decision-making powers to “independent” regulatory agencies, and, within federal political systems, creeping centralisation of policy, public financing, and even service delivery responsibilities.

A clear manifestation of centripetal momentum concerning political activity has been both the substantial and sudden elevation of public health authorities in the determination of Covid-19 policy responses. Podemska-Mikluch and Wagner (2020) and Wagner (2020a) explore in great detail the contribution of certain academic researchers, and research groups, toward the rationalisation of oft-predetermined political positions by governmental authorities. A not unrelated tendency of contemporary pandemic biopolitics has been the elevation of certain public health officials—such as Anthony Fauci (U.S.), Chris Whitty (England), Brendan Murphy (Australia), and others—in political discourse. The public involvement of heads of multilateral health organisations, such as Tedros Adhanom Ghebreyesus of the United Nations’ World Health Organization, is, likewise, noted. While circumstances vary from one jurisdiction to the next, these officials have often been charged with publicly providing frequent updates of coronavirus cases and fatalities, and engaging in public debates with media reporters and others, even in the presence of their overseeing minister. In some instances, such as the case with Dr. Fauci, public health officials have enjoyed quasi-celebrity political status as populations have become actively attuned to their health advisories, opinions, and perspectives.

Researchers of public governance have observed organisational and institutional reform of regulatory policymaking over the past few decades. A key manifestation of such reform comes in the shape of arms-length administrative relations between legislators and regulators (Aligica et al. 2019). A plausible expla-

nation for such a development is that the regulators may be insulated from political imperatives compromising the integrity and quality of policy advice and enforcement. It is also supposed that insulation from political imperatives enable legislators to gain impartial insights from regulators, with the former taking advantage of epistemic advantages held by the latter. It may also be the case that the perception of separability in the accountability relations between legislator and regulator insulates the former from political censure or demotion in the case of policy failure, insofar as blame for failure can be sheeted home to the regulator. None of these insights suggest that the regulator, or policy advisor, ought to assume an active or conspicuous public profile, potentially elevating themselves as identifiable political participants in their own right.

The raised profile of public health officials is characterised as yet another example of tightening entanglement within the health care space, but which also invokes blurriness in the relationship between the two sets of actors. Public health officials are presented a discursive platform to propagate independent, but perhaps alternative, sources of medical advice which may contradict the messaging of the government's own Health Minister. Putting aside questions of epidemiological accuracy and truthfulness in claims-making, the suggestion here is that the prospect of contradictory sources of advice could aggravate uncertainty during a pandemic period. This, in turn, may generate confusion as well as potentials for misinformation and conspiratorial thinking with respect to coronavirus incidence, its medical severity, and the reasonableness of proposed policies, *in addition* to outbursts of fear, panic, moralising, and stigmatisation during periods of crisis and acute societal stresses (Strong 1990).

It should also be recognised that a public profile for public health officials does not substantively alter the fact of epistemic limitations inherent in one single source, or limited sources, of authority (Koppl 2018). Scientific understandings of coronavirus properties and human impacts continue to remain a source of (distributed) intellectual discovery, so there is a risk that widespread community trust in *erroneous* advice propagated by an official imbued with political authority could lead to catastrophic effects. As stated by Lavazza and Farina (2020) great care must be observed in the conduct and messaging on the part of public health officials, given debates about Covid-19 represent a source of contestation within the political arena as well as for potential social rupturing.

Arguments amongst politicians, public health officials, and other key actors in health care over the handling of the worsening coronavirus pandemic during 2020 illustrates the propensity for mischief, if not impropriety, in public health discourses. Difficulties in discussing health matters are compounded by the understanding that most health care output possesses “credence good” characteristics, wherein the user experiences great difficulty in verifying qualitative claims about the performance of products, treatments, or services (Emons 1997; Wagner 2016). To assist public health authorities to detect infected persons, governments have requested citizens to use digital contact tracing applications on their smartphones. In countries such as Australia the take up of such apps have been somewhat underwhelming, a trend attributed to the credence good aspect of apps together with data privacy concerns (Vaithianathan et al. 2020).

The extensive governmental subsidisation and regulation of health care services implies that “policy-makers—rather than consumers and producers—will come to dominate more and more of ... economic life” (Kling and Schulz 2011, p. 15). Furthermore, as political influence within the entangled ecology of health care continues to expand it will become difficult to assess its conduct and performance against commercial or economic standards: “concepts like economic value, efficiency, productivity, and consumer preferences are obscured. And as these sectors continue to grow more central to our economy in the years ahead, our broader economy will therefore become more difficult to analyze and understand in traditional market terms” (ibid., p. 12). As mentioned, the Covid-19 pandemic is likely to present “accelerationist” tendencies in health care toward the qualities of collective property which, particularly relevant during a pandemic, is partly influenced by public willingness to suppress health risks (Zweifel 2020). This assessment is shared by Podemska-Mikluch and Wagner (2020), who refer to the partiality of political prerogatives in the pandemic context and how such partiality—as reflected in fiscal and regulatory policy settings relating to

the pandemic—distorts the value of non-governmental initiatives in health financing, innovation, and provision.

CONCLUSION

The onset of the Covid-19 pandemic, and the responses to it by individuals, businesses, and governments, brings into sharp relief an understanding that our economy, polity, and society is constituted by interactions and relationships. Indeed, it is our view that the entangled political economy approach provides a compelling framework for comprehending the synergies between human, biological, and physical systems in maintaining both productive and healthy relations. The coronavirus pandemic experience also reveals the challenges and opportunities arising from the spread of infectious disease, and the efficacy of efforts by various societal actors in response.

A key issue from the EPE perspective is the nature and extensiveness of alterations to entanglements existing prior to the onset of pandemic. The observed operational, policy, and rule adjustments in many countries suggests extensive re-entanglements of some relationships (and disentanglement of others) among economic and political enterprises. Economic reality is a far cry from political rhetoric to the effect that lockdown policies, and other pandemic responses, serve to “freeze” or “hibernate” the economy. As important as the question as to whether Covid-19 has induced an alteration to the networked patterns of economic commingling is how such rearrangements might affect the robustness of productive economic exchanges into the future. In this paper several considerations are outlined as to how public policies potentially reshape the very capacity of individuals and their entities to prepare for economic recovery. An issue for future research consideration relates to the increasingly interwoven conduct of fiscal and monetary policies, and how these developments interrelatedly bear on future economic-political entanglements and agility capacities of investors and producers (e.g. Eusepi and Wagner 2017; Salter 2020).

In raising the potential dilemmas and problems arising from governmental responses to Covid-19, this paper does not present a “contrarian” or “fringe” view that public policies are, somehow, unwarranted to deal with public health problems. As noted by political economist and social philosopher Nick Cowen (2020), liberalism maintains a commitment to the preservation of life, in addition to liberty and property. Furthermore, luminaries of modern liberal thought—such as Friedman (for example, in his *Capitalism and Freedom*) and Hayek (e.g. in *The Constitution of Liberty*)—argued that a policy response to redress the negative externalities of a contagious disease, and to treat those suffering illnesses, are warranted. Nonetheless, the nomination of public health as a warrantable arena for politically-induced entanglement (via public health initiatives) should be accompanied by “proper appreciation of the levels of complexity in play and whether there are effective feedback mechanisms available to policymakers to cope with the uncertainties at hand” (Pennington 2020, p. 5).

A concern for dealing with the coronavirus threat whilst, at the same time, accounting for the economic and social ramifications of such dealings are not considered here to be inconsistent positions. Richard Wagner (2020a, p. 10) provides a compelling explanation in support of this proposition: “[t]here can be situations that call for monocentric organization, but these are rare. In the presence of modern societal complexity, which Covid-19 illustrates, we must find a way to enable experimentation to flourish rather than suffocating those experiments through embracing the pretense that the right set of political authorities possess the one best approach.” Entangled political economy provides a conceptual pathway as to how distributed human insight, intelligence, and knowledge may be harnessed to respond to Covid-19, without irreparably damaging those liberal institutions, procedures, and standards which catalyse and support entangled networks of voluntaristic interaction.

NOTES

- 1 I credit Dr. Abigail Devereaux (Wichita State University, Kansas) for raising the entanglement-agility relationship in a 2019 Facebook post.
- 2 A useful summary of contracts under the U.S. Coronavirus, Aid, Relief, and Economic Security (CARES) Act is provided by the “Covid Stimulus Watch” funding tracker (<https://covidstimuluswatch.org>).

ACKNOWLEDGMENTS

The author thanks Richard E. Wagner, Marta Podemska-Mikluch, attendees of the November 2020 Entangled Political Economy Research Network (EPERN) seminar, the editor of this special issue, and an anonymous referee for feedback on a draft of this paper.

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Crisis as a Source of Social Capital: Adaptation and Formation of Social Capital during the COVID-19 Pandemic

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Abstract: In *Democracy in America*, Tocqueville famously discussed the propensity of Americans to form voluntary associations and engage in self-governance to overcome collective challenges. The “science of association” has proven to be important, especially when communities are confronted with crises like natural disasters. Not surprisingly, the scholarship on community responses to crises has tended to emphasize how community members deploy their social capital to respond effectively to crises. This literature, however, has not yet emphasized the potential of crises to be a “source” of social capital. After a crisis, community members do not only tap their existing networks for aid but also deepen existing relationships and develop new connections. Moreover, they adapt existing associations to serve new functions and form new associations to meet collective needs. They also reinforce or reinterpret collective narratives that help overcome collective action problems. Using data from the COVID-19 crisis, this paper explores how a crisis can be a “source” of social capital.

Keywords: social capital, COVID-19, crisis, disaster recovery, mutual aid

1. INTRODUCTION

The SARS-CoV-2, or novel coronavirus (COVID-19), is a devastating public health crisis, which has, in turn, spawned an economic crisis across the globe. The first confirmed cases appeared in China in late 2019, and since then, every region of the world has reported COVID-19 cases. As of December 31, 2020, the World Health Organization (WHO) reports over 81 million cases worldwide, and almost 1.8 million deaths as a result of the disease.¹ In the United States alone, the Centers for Disease Control and Prevention (CDC) has attributed over 340,000 deaths to COVID-19 from almost 20 million cases.²

To help limit the spread of the disease, governments have resorted to stay-at-home orders, curfews, quarantines, and other policies to “flatten the curve” so that healthcare professionals can adequately treat those infected. While these policies and mandates have shifted over time, individuals and households have also voluntarily limited activity over the past several months. The combination of restrictive government policies and people willingly choosing to forego normal activities has created an economic crisis. As businesses, schools, and daycares have suspended their nor-

mal activities or dramatically cut back services, individuals and families have lost employment and income. The U.S. unemployment rate grew to over 14 percent in April 2020 and remains at 6.7 percent as of November 2020.³ Furthermore, 2020 second quarter GDP decreased by 32.9 percent.⁴

COVID-19 has arguably also led to a social crisis. Macroeconomic measurements of unemployment and GDP cannot accurately reflect the human suffering caused by the pandemic. Physical distancing, limited activity, and economic distress can all impact how connected and embedded individuals feel in their communities, exacerbating the challenges faced during an extended crisis. Moreover, increases in domestic violence, child abuse and neglect, loneliness, illicit drug use, and suicides linked to social isolation are particular concerns during this period.

When crises like natural disasters, pandemics, and recessions occur, social capital—or the various social connections among people—is an important factor in determining how individuals and communities respond.⁵ The disruption caused by COVID-19 might be compared to the dramatic changes that we see in the market as a result of new innovation, what Schumpeter famously labeled, “creative destruction” (1994 [1942], pp. 82-83). In the same way that prices convey information and entrepreneurs step in to repurpose resources, we can see individuals making use of social capital and repurposing social capital to respond. Social capital has been used to discuss strong relationships versus relatively weak connections, norms of mutual trust, civil society organizations (e.g., the PTA or local church), and collective narratives (Bourdieu 1986; Coleman 1988; Portes 2000; Chamlee-Wright 2008; Hodgson 2014). Beggs et al. (1996) show that individuals with social networks that are kin-based, large, or less diverse are more likely to receive informal support following a crisis. Further, on-the-ground research after Hurricane Katrina in New Orleans, Louisiana, in 2005 and Superstorm Sandy in New York in 2012, demonstrates how associations, such as churches, neighborhood organizations, and other civil society groups, provide important resources and help promote the collective action required to rebound successfully (Chamlee-Wright and Storr 2009, 2011; Storr and Haeffele-Balch 2012; Storr, Haeffele-Balch, and Grube 2015; Storr, Chamlee-Wright, and Storr 2015). In this sense, post-disaster recovery is largely rooted in social connection, voluntary association, and self-governance. Individuals in these post-disaster situations leverage their various forms of social capital to overcome the collective challenges of rebuilding and renewing their communities.

Although the literature has highlighted the various ways that crises can put pressure on social connectedness and has firmly established that social capital is critical for communities to cope with crises effectively, the literature has yet to emphasize the potential for crises to become a *source* of social capital. In other words, the existing literature has tended to offer social capital as a tool to respond to and overcome crises, but has not adequately acknowledged the way in which crises can be generative for social capital formation.⁶ We argue that during and after a crisis, community members do not merely despair over the disruption of their social networks or tap into their existing networks for aid but also (1) deepen existing relationships and develop new connections, (2) adapt existing associations to serve new functions, (3) form new associations to meet collective needs, and (4) develop new collective narratives about their community. Crisis, then, can be viewed as a *source* of social capital because it initiates the formation or reconfiguration of social capital in a community.

Our second contribution to the literature is to highlight how the formation or reconfiguration of social capital takes place using a range of examples from the COVID-19 pandemic. While many traditional ways of connecting have been hindered due to physical distancing and quarantines, individuals and communities have also found innovative ways to stay connected and foster a sense of community. In this article, we explore several examples of the creation and reconfiguration of social capital during the COVID-19 pandemic. Community members have developed new connections and formed new associations to meet collective needs, such as internet-based mutual aid societies. These mutual aid groups have two main functions: first, they help individuals in local communities by providing them with food, medicine, and other essential goods and services; and second, they are a space for friendship and companionship. Local neighborhoods have also formed socially isolated “pods.” In these small groups, a few families come together to share childcare responsibilities, which allows parents to work and students to learn more effectively in a

relatively safe yet social environment. Additionally, communities have reinforced and reinterpreted existing narratives of resilience and togetherness to help people cope with the crisis. Thus, the new and evolving forms of social capital that have emerged during the COVID-19 pandemic have allowed people in various communities to meet their needs and address collective challenges.

In addition to challenging the crisis and social capital literature to consider crisis as generative for social capital, our paper may also bring forth further questions about what social capital looks like today, especially in regard to virtual connections. Putnam (2000) famously diagnosed a decline in civil society and social capital in the United States at the turn of the century. COVID-19 has only reinforced a reliance on virtual communication, raising several questions: Are these connections less robust than those derived through in-person interaction? What might be the ways in which virtual solutions reduce the cost of collective action, and therefore, encourage social activity? Or, what are the ways in which social media expands weak ties, activating a wider range or diversity of ideas, and brings about more robust problem solving? These questions point to exciting areas of research that combine crisis and disaster studies, economic sociology, and the literature on entrepreneurship and innovation.

This article proceeds as follows. In the section 2, we discuss the various conceptions of social capital and how communities leverage social capital during a crisis. Section 3, then, explores the possibility that crises can be a source of social capital. Next, section 4 provides empirical examples from the COVID-19 pandemic as evidence of social capital formation. Section 5 concludes and provides implications.

2. USING SOCIAL CAPITAL DURING A CRISES

Bourdieu, who is credited with the first systematic analysis of social capital, focuses on the social relationships through which individuals gain access to resources and the types, amounts, and qualities of those resources (Portes 1998, pp. 2-4). Bourdieu and Wacquant (1992, p. 119) describe social capital as resources available to individuals or groups through their networks, or “relationships of mutual acquaintance and recognition.” Additionally, Granovetter (1973) shows “the strength of weak ties,” highlighting both aspects of Bourdieu’s definition to distinguish between strong versus weak ties, and the types of resources that we obtain through both types. The strength of a tie, for Granovetter, is a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie” (ibid., p. 1361). Granovetter also emphasizes that strong ties are often connected to the same people, and therefore, a tie that offers a “bridge” to another network of weaker ties can be helpful in certain situations. Job searches, for example, benefit from weak (or informal) ties that can provide new job candidates and information useful for a successful placement (Lin et al. 1981; De Graaf and Flap 1988).

The literature on social capital as social ties distinguishes three types of connections: bonding, bridging, and linking (Woolcock 2001). Bonding social capital describes strong connections between individuals in homogeneous groups (e.g., family members). Bridging social capital refers to weak connections across heterogeneous groups (e.g., networks of university alumni). Finally, linking social capital describes connections between people from different social groups and power dynamics (e.g., connections to a local politician or industry leader). As Granovetter illustrates, these types of social capital provide access to different resources. Bonding social capital (primarily between family members or kin-groups) is often used for social support, such as childcare needs, assisting with errands, or borrowing money. Bridging and linking social capital (primarily through organizations, such as a neighborhood association) is more often used for information exchange and is associated with economic advancement (see Zhang et al. 2017; Briggs 1998).

While many studies coalesce around social capital as social ties, Coleman (1988, p. S101) offers a more expansive definition of social capital: “social capital’ is the value of these aspects of social structure to actors as resources that they can use to achieve their interests.” Like Bourdieu, he describes deliberate investment. Indeed, he refers to “credit slips,” explaining that if “A does something for B and trusts B to reciprocate in the future, this establishes an expectation in A and an obligation on the part of B. This obligation

can be conceived as a credit slip held by A for performance by B” (ibid., p. S102). The volume of these types of exchanges will be impacted by the level of trustworthiness (i.e., whether people actually reciprocate) and how often people rely on one another (determined by culture and individual needs). Perhaps his most famous example is Jewish diamond merchants in New York who exchange diamonds with no formal contract (ibid., p. S98). The merchandise, as Coleman notes, may be worth hundreds of thousands of dollars, and yet sellers willingly allow potential buyers to take the diamonds to inspect in private. This particular example suggests social capital as norms, or informal rules that govern behavior. When individual (or micro-level) actions are repeated, they become norms that drive macroeconomic phenomenon.

Social capital has also been closely tied to neighborhood associations, churches, and other types of civil society organizations. These associations are a collection of relationships, which in some cases may be strong and represent bonding social capital (such as a small book club or bible study group), and in other cases may be weak (such as a national society). Their prevalence shows how people are connected. Scholars, most famously Putnam (2000), use the variety of different types of associations and prevalence of these groups as a general barometer of social capital. Putnam (ibid.) argues that higher levels of social capital as evidenced by the prevalence of these associations are correlated with better educational and child welfare outcomes, safer and more productive neighborhoods, and in general, economic prosperity.

Additionally, scholars have considered social capital as collective narratives, or shared communication and understanding of group norms, which provide insight into the mental models that community members deploy for spurring (or deterring) collective action (Chamlee-Wright and Storr 2011). As Gerteis (2002, p. 609) concludes, “Collective narratives are important because they are the sites where schemas take concrete empirical form.” Collective narratives can reinforce a shared identity, and an individual’s attachment to a particular place.

Social capital can be understood, then, in reference to (a) the types of relationships between individuals, (b) as norms, or general rules that govern behavior, (c) as collective narratives which express those rules, and (d) as the associations (or groups) that exist in society. Although the numerous forms may suggest that the definition is imprecise, it also accurately acknowledges how closely related and, arguably, inseparable the various aspects of social capital are in society. Associations are collections of relationships, which may be tightly knit, or loose in nature. Further, associations are places where norms are established, such as the commercial diamond industry in New York, which has two overlapping associations—a common industry and a common ethnicity and religion (i.e., Judaism). Depending on the network, norms might be more or less constraining. In the case of the Jewish diamond merchants, bonding social capital establishes strict norms and maintains those norms because individuals’ livelihoods are tied to their reputations (i.e., their adherence to rules). These characteristics can, then, be communicated through collective narratives that spur or deter collective action.

In its varied forms, social capital enables exchange (e.g., of information across weak ties or of mutual support within a church group) and coordination (as social capital points to certain available resources or establishes expectations through shared norms). It is, therefore, unsurprising that individuals and communities leverage different types of social capital in post-disaster contexts, or when dealing with other types of crises, for informal support, money, materials, or opportunities made available by family, friends, co-workers, neighbors, or other acquaintances. In the aftermath of 1992 Hurricane Andrew, Beggs et al. (1996, p. 211) show that individuals “in networks that are more kin-dominated, denser, larger, and less diverse” are more likely to receive informal support. Still others have emphasized the importance of both strong and weak ties. Murphy (2007) compares the 2003 blackout in eastern North America that impacted 50 million people and the 2000 E. coli crisis in Walkerton, Ontario, and concludes that both strong and weak ties are sources of assistance after these disasters (also see Aldrich 2012; Rayamajhee and Bohara 2020). In the case of the 2003 blackout, individuals relied on place-based social capital, or established connections through neighborhood networks. Following the E. coli outbreak, individuals in the closely-knit community of Walkerton helped their fellow citizens and sought out support from family and close friends. Thus, the

type of connection that individuals utilize depends on the existing stock of social capital and the particular problems confronting the community.

Others have discussed the role of social capital after crises as demonstrated through civic organizations, such as churches, neighborhood associations, and youth groups. For instance, Aldrich (2011) found that the number of nongovernmental organizations, clubs, and social groups is positively correlated with post-disaster population recovery (also see Rayamajhee and Bohara 2020). Similarly, Storr, Haeffele-Balch, and Grube (2015, pp. 81-94) document how the neighborhood nonprofit Achiezer Community Resource Center, based in the Rockaway Peninsula in New York, organized Kosher meals for impacted families, helped to transport families to residences in other parts of the state, and offered financial support for clean-up and recovery after Hurricane Sandy (*ibid.*). Likewise, in the aftermath of the 1994 earthquake in Northridge, California, Bolin and Stanford (1998) describe how non-governmental organizations (NGOs) stepped in to support vulnerable populations, providing affordable housing for low-income individuals, Latinos, and farm workers.

Chamlee-Wright and Storr (2011) examine the post-Katrina recovery efforts in St. Bernard Parish, Louisiana, which suffered widespread destruction from flooding. They found that the collective narrative in St. Bernard Parish portrayed the community as close-knit, family-oriented, and hard-working, and that this narrative led community members to adopt a disaster recovery strategy that emphasized self-reliance. Additionally, Richardson and Maninger (2016) show how collective narratives become aids in coping and also facilitate efforts for rebuilding and recovery. Using interview data from the 2008 Hurricane Ike in Downey, Texas, they note that according to the shared narrative, "... the town faced severe adversity but primarily through the will and fortitude of the citizens working together was able to overcome great odds to restore itself to an even better state than prior to the hurricane" (*ibid.*, p. 114). The collective narratives included many references to "a special little town," a "bootstrap mentality," and a "lessons learned" or "future-focused" attitude (*ibid.*, pp. 114-116). McManus (2015) similarly documents the collective narratives of women impacted by the 2010 earthquakes in Christchurch, New Zealand. In addition to a profound sense of vulnerability, survivors experienced the significant loss of aspects of self-identity. The earthquake disrupted lives and work, and people were left wondering how they could contribute to community recovery (*ibid.*, p. 33). When faced with these worries, they sought to make use of other aspects of their identity and developed innovative solutions to decorate the physical spaces that were destroyed (e.g., Gap Filler) and feed survivors (e.g., The Christchurch Baking Army and Farmy Army).

Social capital in the form of social ties, norms, collective narratives, and community-based organizations can be important tools for responding to and recovering from crises. Resilience and social capital are, thus, linked. Social capital is related to why and how successful certain individuals and communities respond to crises. This makes understanding how social capital is created critical. That crises can disrupt and destroy social capital, and that some individuals and communities might lack the (form of) social capital that they might need to effectively respond to crises, makes a focus on the *sources* of social capital even more important.

3. CRISIS AS A SOURCE OF SOCIAL CAPITAL

In *Democracy in America*, Tocqueville ([1835] 2000) famously discusses the propensity of Americans to form voluntary associations and engage in self-governance to overcome collective challenges. "Everywhere that ... you see in France the government, and in England, a great lord," Tocqueville (*ibid.*, p. 896) observes, "count on seeing in the United States, an association." He describes Americans as "*constantly*" uniting and explained that, in America, associations can range anywhere from "religious, moral, serious ones, useless ones, very general and very particular ones, immense and very small ones ... to celebrate holidays, establish seminaries, build inns, erect churches, distribute books, send missionaries ... create hospitals, prisons, schools" (*ibid.*, p. 896). It is through associations, Tocqueville explains, that Americans perform both small projects and large undertakings.

Tocqueville's discussion of associations tends to focus on the uses that Americans make of associations. He does, however, spend some time describing how it is that Americans become skilled in and cultivate the art of association.⁷ The art and skill of association, for Tocqueville, is like a muscle that needs to be exercised. The more that people practice, the more they unite to undertake small and big projects, and the better they become at associational life. Tocqueville stresses that allowing citizens the freedom to form whatever associations they saw fit is critical, else their associational muscles will atrophy. According to Tocqueville (*ibid.*, p. 915),

[w]hen citizens have the ability and the habit of associating for all things, they will associate as readily for small ones as for great ones. But if they can associate only for small ones, they will not even find the desire and the capacity to do so. In vain will you allow them complete liberty to take charge of their business together; they will only nonchalantly use the rights that you grant them; and after you have exhausted yourself with efforts to turn them away from the forbidden associations, you will be surprised at your inability to persuade them to form the permitted ones.

Restricting or discouraging certain kinds of associations (such as religious or political associations) will cause citizens to lose their taste for associations and their ability to effectively engage in associational life. Governments can also crowd out civic associations if they take on activities and projects that could be done by groups of citizens working together (Ostrom 2000).

If Tocqueville is correct about how we cultivate the art and skill of association, then crises, especially large and prolonged crises, can be an important training ground because they often demand a response beyond that of any likely government response (Bauer et al. 2016). Again, similar to the creative destruction that we see in the marketplace following innovation, crises – such as the COVID-19 pandemic – can cause profound disruptions that may be repaired by social capital. When faced with a crisis, people rely on one another to obtain needed resources, share information about damage as well as recovery strategies, and participate in the community they seek to rebuild (see Haeffele and Storr 2020). They do this through their social ties, often leaning on pre-existing connections. Importantly, individuals and communities can also create social capital when they need it most. We argue that after a crisis, community members do not only tap their existing networks for aid but also (a) deepen existing relationships and develop new connections, (b) adapt existing associations to serve new functions, (c) form new associations to meet collective needs, and (d) develop new narratives about their community.

During a crisis, individuals deepen existing relationships and develop new connections. As Granovetter (1973, p. 1361) explains, the strength of a tie is determined, in part, by the amount of time, emotional intensity, and intimacy shared with the contact (see also Chamlee-Wright and Storr 2014). People often find themselves sharing stories of tragedy with others who were once only acquaintances, and neighbors come to rely on each other for electricity, a shower, or a helping hand. All of these highly personal, and sometimes intimate, exchanges serve to deepen relationships. At the same time, new challenges may require that people leverage new connections. Residents may rely on weaker connections (such as a friend of a friend, or a neighbor) to locate a contractor or find a part-time babysitter. And, groups that had never gathered before, may gather to solve new common challenges that only emerge in the wake of the crisis.

Businesses and civil society exist to meet a range of needs, and as new challenges arise, these groups may be well-positioned to meet new needs.⁸ For example, Storr, Haeffele-Balch, and Grube (2015, pp. 78-81) describe how the Rockaway Citizens Safety Patrol (RCSP) initially organized to reduce petty crime in the Rockaway Peninsula in New York and pivoted to help families pump water from basements and clear debris following the flooding from Superstorm Sandy. Local residents already trusted the volunteers and the organization already had 24-hour coverage of the community established, putting them in a position to easily adapt to new challenges within their community.

In other cases, entirely new associations may come about to meet collective needs. McManus (2015) describes how disaster survivors in the aftermath of the Christchurch, New Zealand earthquakes sought

new ways to contribute to their community (e.g., forming the Farmy Army and Christchurch Baking Army to leverage their cooking and baking skills to help feed those in need). Similarly, the youth in a Vietnamese community outside New Orleans organized an activist group to both protest and appeal to government for assistance after Hurricane Katrina (Storr, Haeffele-Balch, and Grube 2015).

As individuals form new organizations to meet new needs, they also reconstruct or reinterpret collective narratives about their community. In the Broadmoor neighborhood of New Orleans, the Broadmoor Improvement Association (BIA) brought community members together to combat the conversion of their neighborhood into green space after Hurricane Katrina (ibid.). The BIA repeated and emphasized existing collective narratives—such as Broadmoor as “the Heart of New Orleans” or a “microcosm of New Orleans.” The BIA also helped create new, aspirational narratives regarding the Broadmoor neighborhood, saying that the area would be “Better than Before” (Storr and Haeffele-Balch 2012, p. 308). These collective narratives, both old and new, served as signals that Broadmoor could and should rebound. Ultimately, these narratives were some of the contributing factors in the successful rebuilding of the neighborhood.

Crises, then, can give community members an opportunity to not only flex their associational muscles but also to train and exercise them. This is certainly true after national disasters like hurricanes and floods. This has also proven to be true during the COVID-19 pandemic.

4. SOCIAL CAPITAL FORMATION AND RECONFIGURATION DURING COVID-19

Unsurprisingly, social capital is an important component of the COVID-19 pandemic (see Wu forthcoming). Government lockdowns and stay-at-home orders have changed the way we interact with others by promoting physical distancing, remote work, and limited travel. Prolonged isolation can negatively impact mental health, productivity, and wellbeing, and some have warned of the potential of a “loneliness epidemic” that could exacerbate public health and economic crises (see Newton 2020; Pitas and Ehmer 2020). Indeed, in an online survey we conducted in August 2020,⁹ 17-31 percent of respondents reported feeling less connected to family, friend, work colleagues, neighbors, strangers, and members of religious organizations and nonprofits.¹⁰ When asked to elaborate on why they felt less connected, many respondents mentioned the need for physical distancing, fear of contracting COVID-19, feeling isolated, and having opposed political views with others.

To counter these challenges, people are finding ways to adapt their social ties and networks (see Chamberlain 2020; Marston et al. 2020; Newton 2020; Pothen 2020). Stuck at home, people are interacting with others online, including joining new groups to discuss shared interests, and trying out new hobbies and sharing their progress on social media. 97 percent of the respondents to our survey noted utilizing technology—specifically phone calls, texting, video calls, and social media—to connect with others. Furthermore, 44-77 percent of respondents reported feeling just as or more connected to family, friend, work colleagues, neighbors, strangers, and members of religious organizations and nonprofits. Many pointed to having more free time, fulfilling a need for connection, wanting to check in on others’ physical and mental health, and a renewed sense of what matters in life as reasons for connecting with others.

These ways of connecting can be utilized to increase community embeddedness, enforce norms, and shame others, just like in-person interactions; online platforms have become another venue where people can find common ground or express their opposing views. Viewed this way, social capital continues to be an important factor during the pandemic in fostering collective action and enforcing social norms. Research is starting to show that social capital has had an impact on sustained physical distancing, decreased mobility, and lower cases of COVID-19. Specifically, several studies have highlighted how a sense of civic duty (or broad social and political trust) positively correlates with successful mitigation measures, whereas community engagement negatively correlates (Bai et al. 2020; Ding et al. 2020). Another study shows that while bonding social ties correlates with more COVID-19 infections, more diverse ties correlate with fewer cases (Aldrich 2020). However, other studies suggest that social capital more broadly defined (combining both of these factors), positively correlates with successful mitigation measures (Bartscher et al. 2020; Borgonovi

and Andrieu 2020; Makridis and Wu 2020). While these studies focus on macrolevel comparisons of social capital, this article focuses on the microlevel innovations and adaptations of social ties that may foster connections as a way to cope with and recover from the pandemic.

a. Deepening existing relationships and developing new connections

The COVID-19 pandemic has provided an opportunity for individuals to expand existing social connections and create new connections. Several respondents to our online survey reported forming new or deeper connections since the beginning of the pandemic. For instance, 30 percent said that they are now spending time with people who they did not interact with before the pandemic. When asked to give more details on these relationships, respondents mentioned meeting new significant others, reconnecting with old friends and family members, and forming bonds with neighbors and coworkers. Furthermore, 13 percent have joined organizations and 26 percent have joined new online groups. Respondents reported joining charitable organizations, such as Meals on Wheels and the Red Cross, and activist groups, such Black Lives Matter, as well as educational programs, support groups for mental health and parenting, book clubs, hobby groups, job boards, and dating sites. Respondents also joined various groups for entertainment, including on topics like TV shows, gaming, crafts, cooking, cats, and wine. These new social connections range from casual entertainment to domestic partnership and have had a significant impact on people's lives.

One particularly interesting example is online “groupsourcing,” or when communities use social network platforms, such as Facebook and WhatsApp, to coordinate activities in particular geographical regions (see Chamberlain 2020). In the United Kingdom and the US, groupsourcing has allowed individuals in both small towns and large cities to create mutual aid societies to render services and ask for help during the pandemic. These virtual platforms are highly conducive for deepening existing relationships and developing new connections because it allows for easy, low-cost communication among people in the same geographical locations who want to engage in mutual aid. People have formed associations in the same vein as what Tocqueville described in the 1830s—a non-government, non-market form of community organization that provides for the members of local communities. While modern mutual aid societies are using technology that did not exist in the past, the concept is largely the same.

COVID-19 Mutual Aid UK is a volunteer organization that lists over 2,000 local support groups in the UK.¹¹ For example, bluebell-19 is a Facebook-based mutual aid society in Cambridgeshire that is run entirely by volunteers who want to help vulnerable individuals by running errands, distributing information, and providing emotional support. The group's description states, “We recognise that everyone is at risk of being affected by this pandemic, but that a pandemic doesn't hit everyone equally. That's why we're organising to support the most vulnerable, including the elderly and those with pre-existing health conditions during the outbreak.”¹² Another group is Community Coronavirus Care in Surrey that matches people in need of assistance with those who are willing to give it. Their descriptions states, “Are you self isolating, worried about going out or need some help? We are a group of people from the surrounding community that would like to help.”¹³ Individuals in need of assistance can call to request the assistance they need. The details are then passed along to volunteers, who will contact the person directly and set up arrangements to render service.

COVID Mutual Aid USA is another group that aggregates and lists local mutual aid societies. Although local groups are independent and can provide assistance as they see fit, COVID Mutual Aid USA helps to raise awareness of local groups, creates a shared space for people across the country who want to engage in mutual aid, and shares knowledge through mutual learning and collaboration among groups.¹⁴ For example, in northern Virginia, the group Arlington Neighbors Helping Each Other Through COVID-19 has over 12,000 members on Facebook. The group's description states, “This group was created as a space to ask for help, share information, and connect to our neighbors. Many of us are still healthy and able to lend a hand to those who may be at higher risk.”¹⁵

b. Adapting existing associations to serve new functions

Existing associations may also adapt to serve new functions, as established in the institutionalist literature, especially by the work by the Ostroms related to polycentric systems and co-production (for example, see Ostrom 1973; Skarbek 2014; and Rayamajhee and Paniagua 2020). Skarbek (2014), in her description of civil society responses to the 1871 Chicago Fire, illustrates how a collection of existing organizations were able to step in and effectively provide food and shelter for disaster victims. Skarbek points to the importance of actors with “skin in the game” (in the case study, an interest in the future of the city and personal reputations at stake) and access to local knowledge, including how to obtain key resources (*ibid.*, p. 172).

Indeed, many local communities and religious organizations have preexisting, dense social connections and robust community-based systems of mutual aid that were able to adapt to address current challenges. For instance, the Church of Jesus Christ of Latter-day Saints, also known as the LDS or Mormon Church, is known for its unique and far-reaching social connections and high levels of social capital (Loft-house and Storr forthcoming). The social capital structures in the LDS community facilitate robust forms of mutual aid internal to the members of the Church as well as large-scale humanitarian aid projects (Goodman and Herzberg 2020).

During the pandemic, the LDS community has adapted formal institutions and informal social capital structures. On March 12, 2020, the Church’s First Presidency suspended all church meetings worldwide. Although formal meetings were cancelled, the LDS’s women’s organization, called the Relief Society, continues to provide assistance to local communities during the pandemic. Each local ward (similar to a parish) has a Relief Society with a number of adult women who have important roles in administering mutual aid at the local level (Goodman and Herzberg 2020). In May 2020, local Relief Society groups in Utah joined the Intermountain Healthcare and University of Utah Health to recruit tens of thousands of volunteers to sew five million masks for health care workers (Walch 2020a). In Los Angeles County, a group of women in a local Relief Society made 6,000 cloth facemasks for the Los Angeles County Sheriff’s Department to keep inmates, nurses, and deputies safe.¹⁶ In Avon, Indiana, Erika Pike, a local Relief Society member started a non-profit group called Sew and Serve Indy to sew masks for frontline health workers and first responders in Indiana. More than 6,000 volunteers, who are both LDS and non-LDS members, have worked with Sew and Serve Indy to create and distribute over 90,000 masks and surgical caps across the state.¹⁷

Additionally, the LDS Church has adapted its formal, centralized welfare institutions to provide monetary welfare and humanitarian aid in direct response to COVID-19. For example, they transported thousands of pounds of food each week from its central humanitarian storehouse in Salt Lake City to several other organizations that help provide food to the needy (Walch 2020b). In April 2020, Latter-day Saint Charities donated \$5.5 million in cash to five American relief agencies, including Convoy of Hope, Feeding America, Partnership With Native Americans, Salvation Army, and United Way (Walch 2020c). Church President Russell M. Nelson said, “The COVID-19 pandemic has now become the largest-ever humanitarian project of the church. Any way you want to measure it, this is now the largest” (Walch 2020b).

In addition to religious organizations, businesses have adapted the ways in which they use their social capital to meet people’s needs during the pandemic. In early 2020, as people stocked up on products in preparation for lockdown, there were shortages of key items—such as toilet paper, cleaning supplies, and hand sanitizer. Many stores responded by rationing such items, limiting the number customers could buy during each visit. At the same time, other businesses were seeing sales fall as consumer demand decreased, or state orders prohibited businesses from operating. In response, some businesses adapted their business models to provide newly demanded goods and services.

Craft breweries, a booming business before COVID-19, experienced declines because they had fewer in-person or wholesale customers, were forced to close, or had to reduce the number of guests that could enter their stores. With excess craft beer on hand and no way to get it to customers, craft brewery entrepreneurs saw an opportunity to repurpose their product into alcohol-based hand sanitizer. The craft breweries teamed up with distilleries, which took the beer and put it through a two-step distillation process and

then bottled and prepared for distribution. And, in order to encourage the production of hand sanitizer, the Food and Drug Administration (FDA) issued a temporary change to its rules, provided guidance on hand sanitizer production, and made it easy to register as a producer online (LaGrand 2020). For example, Aurora, Illinois-based sister companies, Two Brothers Brewing and Two Brothers Artisan Spirits, distributed their hand sanitizer to hospitals, senior living facilities, and police and fire departments both within and outside of the state (Gribbins 2020). Similarly, Chicago-based Koval Distillery partnered with local breweries to create and donate 500 gallons of alcohol-based hand sanitizer that was distributed to Metropolitan Family Services, YMCA of Metro Chicago, Sinai Health Systems, among others (Laabs 2020).

c. Forming new associations to meet collective needs

People formed new associations to address challenges directly related to life during the pandemic. The pandemic has drastically altered K-12 education, with a rise in online schooling, hybrid models, and home-schooling. Many parents are faced with working from home or finding childcare so they can go to work while their children attempt to learn from home. In response, a new type of association has emerged known as the “pod” or social “bubble,” where small groups of several families band together to share in the responsibilities of childcare and education while also maintaining physical distance from others. Members of pods often agree to certain rules, such as always wearing masks in public or foregoing restaurants or gyms, to mitigate the pod’s exposure risks (Garcia-Navarro and Lichfield 2020). Such pods have three main purposes: allowing parents to work more effectively, allowing students to learn more effectively, and providing needed socialization.

Within pods, a designated adult serves as a caretaker to make sure that the children are staying on task with virtual school. This promotes a more conducive learning environment for the children and also allows the other parents to focus on working from home or to physically go to their workplace. In some cases, parents take turns teaching or supervising children during the day. In others, families hire a teacher or tutor that can be available throughout the week. Some parents now help others organize their own pods. For example, the *New York Times* reported that Ivan Kerbel, a father in Seattle, was planning to organize pods that he calls “nano schools” for many Seattle families (Moyer 2020). Kerbel’s Facebook group now has over 6,000 members, and its description states that Seattle’s nano schools are “exploring new ways to deliver education ... via home-based instruction, in a time of great economic uncertainty and with pandemic-related public health constraints.”¹⁸

Learning pods have serviced families across income levels. Although relatively wealthy families may have the resources to hire tutors and caretakers, less wealthy families have devised systems of mutual support by drawing on their social networks. That said, not all families have access to a network of other parents with jobs that are flexible enough to share care and schooling. Some have also expressed concern that pods may not be very diverse because of economic and racial segregation and have advocated for public funding of learning pods to promote equity and diversity (North 2020). Although pods are not a perfect or completely equitable solution for all people in all circumstances, the emergence of these new associations to meet collective needs speaks to the propensity of people to use their social capital to creatively solve problems.

d. Developing new narratives about community

During the pandemic, people have devised new ways to emphasize, reinvigorate, or reformulate collective narratives that influence the types of strategies adopted to cope and recover from the crisis. For instance, communities are articulating narratives around the efficacy and the meaning of masks, and what the consistent wearing of them says about their communities (Behr and Storr 2020). Additionally, “Dreem,” a Toronto-based artist, created hundreds of posters with the phrase “We’re all in this together.” The posters were intentionally written in the same font as the storefront signs of a Toronto shop called Honest Ed’s, which

is well-known locally for its “corny idealism.” “That place represented a side of Toronto that’s really special, hopeful, a sign of community—blind optimism and faith in our neighbours. You walked in that place, and you’d find people of all walks of life buying two-dollar socks,” noted Dreeem (Pelley 2020). They hung up 200 posters in the windows of shops around the city that had been closed down due Ontario’s lockdown policies. Dreeem said, “I looked at the news from China and Iran, and I looked at the streets outside my window, at a city going about life as usual, and I just knew it was all about to change. And the virus wouldn’t stop at imaginary borders, and soon people would be going through the same radical disorientation. I wanted to do something about that” (ibid.).

Colleges and universities faced a big challenge in fall 2020 as they were tasked with fulfilling their missions and finding ways to keep students, faculty, and staff safe. Columbia University’s “Columbia Together,” is an example of an online platform for university employees to share their experiences during the pandemic. Employees who contribute to the platform engage in a form of collective storytelling that is meant to reflect community solidarity and perseverance, as well as offer solace to those who feel isolated. On the platform, university employees can write short or long pieces, make videos, or compose poems to share their experiences (Glasberg 2020). Additionally, Columbia University’s human resources department is encouraging employees to share images of working from home and expressions of gratitude to colleagues as well as to use the hashtag #ColumbiaTogether on personal social media accounts (Columbia University Human Resources 2020).

The Columbia Together project has been a platform to shape the collective narrative within the community at Columbia University, and it has also fostered new associations to meet collective needs of people both inside and out of their community. For example, Dr. Yelena Akelina of the department of orthopedics formed an online Facebook group for surgeons and professors around the world who were interested in building an e-learning community after feeling frustrated that her lab and traditional way of teaching was closed down. She writes, “We post lectures, exercises, people share their experiencing, etc. and ask questions. It became very popular very quickly! ... my story tells that in a time of crisis you can always find something to do to be helpful and creative and stay positive!” (ibid.).

Beloit College is a small liberal arts college of 1,200 students in Beloit, Wisconsin, and is, in many ways, a tightly knit community (approximately 90 percent of students live on campus). Beloit College has leveraged that identity to challenge one another to take precautions, establishing the narrative, “Self-care is community care,” and asking community members to physically distance, wear masks, and perform daily check-ins (i.e., self-assessments of health). The college’s website, social media accounts, and weekly newsletter feature photographs of students “masked up” with #WhosThatMask and stories of how they are adapting to the pandemic version of campus life. Throughout campus, messaging highlights how these public health strategies are consistent with community values and norms, making what could be perceived as burdensome rules easier to follow.

Beloit College has also received media attention for how its students have responded to the pandemic and engaged in effective collective action (Chamlee-Wright 2020). As a small community practiced in the art of association, students decided to make amendments to their own student statement of culture and include a commitment to following certain practices to curb the spread of COVID-19. Students and staff together crafted “behavioral expectations,” which established expectations around residential life and hosting events. Importantly, there was not a moratorium on social events. This bottom-up approach helped establish realistic expectations and helped students feel empowered. Indeed, two students, Saad Ahsan and Nayomi Neelangal (2020) explain that, “Our faculty and administration realized that they don’t experience campus life the same way as students do, and telling college students not to party or to ban everything wouldn’t be safe—or realistic. Instead, it would lead to gatherings that would be very secretive, unregulated, and probably take place inside, without masks.”

5. CONCLUSION

People across the world have a propensity to form social connections and voluntary associations to overcome collective challenges. When these communities are confronted with crises, community members deploy their social capital to respond effectively and overcome crises. While the literature highlights the important nature of social capital in post-crisis recovery, our contribution in this article is to highlight the potential of crises to be a *source* of social capital. During and after a crisis, community members deepen existing relationships, develop new connections, adapt existing associations to serve new functions, form new associations to meet collective needs, and develop new collective narratives. In this sense, crises can foster the creation, adaption, and reformulation of social capital within a community.

The crises associated with the COVID-19 pandemic have provided many real-world examples of social capital being created, altered, and reconceived to allow people to address and overcome unprecedented hardships. Individuals have formed new ties and joined organizations since the start of the pandemic to form friendships, receive support, and help those in need. Social media platforms have allowed local communities to develop and expand robust mutual aid societies. Religious organizations have reorganized and redeployed their charitable-giving structures to meet pressing challenges. Parents have formed learning pods, which allow them to work and parent more effectively while also allowing for the effective education of their children. And communities have reinforced and reinterpreted collective narratives to foster a sense of resilience and togetherness. These few examples, among many others, show that not only is social capital an important factor in a community's ability to cope and recover from crises, but it can also be created when circumstances require it.

NOTES

- 1 Data obtained from the “WHO Coronavirus Disease (COVID-19) Dashboard,” found here: <https://covid19.who.int/>.
- 2 Data obtained from the CDC’s “United States COVID-19 Cases and Deaths by State” dashboard on December 31, 2020, found here: https://covid.cdc.gov/covid-data-tracker/#cases_casesper100klast7days.
- 3 Data obtained from the Bureau of Labor Statistics “The Employment Situation—November 2020,” found here: <https://www.bls.gov/news.release/pdf/empst.pdf>.
- 4 Data obtained from the Bureau of Economic Analysis, found here: <https://www.bea.gov/news/2020/gross-domestic-product-2nd-quarter-2020-advance-estimate-and-annual-update>.
- 5 In this paper we take a broad view of social capital and define social capital as (a) the types of relationships between individuals, (b) as norms, or general rules that govern behavior, (c) as collective narratives which express those rules, and (d) as the associations (or groups) that exist in society.
- 6 There are a few studies that do explore this possibility, most notably, Bauer et al. (2016).
- 7 See Behr and Storr (forthcoming) for a discussion of how Tocqueville believed Americans cultivated the art of association and on how markets offer participants greater opportunities to nurture and grow Tocquevillian habits of association.
- 8 The literature also notes that participation in voluntary organizations increases after crisis (for example, see Lee and Fraser 2019).
- 9 The survey, administered through Qualtrics, targeted United States residents over 18 years old and asked a series of questions about pandemic-related community connected, regulations and policies, and changes to work and education. We received 1,105 total responses and used 967 for our analysis (removing those that included multiple nonsensical answers). The sample was fairly diverse with fairly even distribution across regions (with less respondents living on the west coast), age, gender, education, employment, and marital status. However, the population was predominantly white (75 percent).

- 10 Respondents were asked about their connections to each social tie type separately. Ranges are reported rather than results by social tie type.
- 11 For more information, see <https://www.mutual-aid.co.uk/>.
- 12 See their Facebook page here: <https://www.facebook.com/groups/235056557676023>.
- 13 For more information, see: <https://www.bookhamresidents.org.uk/community-coronavirus-care>.
- 14 For more information, see: <https://www.usacovidmutualaid.org/about>.
- 15 The Arlington group's Facebook page can be found here: <https://www.facebook.com/groups/212126776694852/>.
- 16 For more information, see here: <https://twitter.com/LASDHQ/status/1251309377635577856>.
- 17 For more information, see: <https://sewandserve.com/about/>; <https://www.facebook.com/sewandserveindy/>; and <https://newsroom.churchofjesuschrist.org/article/relief-society-in-action-may-5-2020>.
- 18 For Kerbel's Facebook group, see: <https://www.facebook.com/groups/seattle.micro.schools>.

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Mobility During Pandemics: Moving Borders and Citizenship into Uncharted Territories

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Abstract: During the coronavirus (COVID-19) pandemic, governments implemented travel restrictions and self-isolation, decreasing mobility for most individuals, but also permitted repatriation and ‘essential’ work, increasing mobility for others. How has the governance of human mobility from March to August 2020 affected the concepts of borders and citizenship? Drawing on evidence from countries in the European Union and South America—regions with more fluid intraregional mobility pre-pandemic—we compare states’ reactions to evaluate moving borders and citizenship. We find fluctuating internal borders and external borders pushing further into other territories. By differentiating between people and essential work, governments deteriorated the rule of law since the frequently changed measures undermined individuals’ ability to predict mobility and income. Migrants were additionally affected because of legal statuses of being a resident national, emigrant, dual national, temporary or permanent immigrant, or having an irregular status. Short-term policy reactions may lead to long-term consequences; we foresee exceptions and control mechanisms under expanded Leviathan-style approaches could continue to affect individual mobility in and between countries.

Keywords: human mobility, pandemics, borders, citizenship, COVID-19, ad-hoc policy

1. INTRODUCTION

To manage the coronavirus pandemic, governments around the world reacted with a plethora of policies to control individuals’ internal and international movement. Despite restrictions and exceptions affecting everyone, we focus on migrants and individual-state relations, including nonresident nationals (emigrants) with their origin country and foreign residents (of varying statuses) in residence countries. Border closures, travel restrictions, self-isolation, and quarantine during COVID-19 decreased mobility, while repatriation, evacuation, return, and essential work increased mobility, including across international borders. Our main research question asks: how has the governance of human mobility during the first six months of the pandemic, from March to August 2020, affected the concepts of borders and citizenship? Given governance of (im)mobility drifted into uncharted territories, varying between individuals, we also ask: in what ways could reactions during states of emergency stir longer term consequences?

To analyze individuals' mobility within and across borders, we draw on select European Union (EU) and South American countries' policies during the first six months of the COVID-19 pandemic. Before the outbreak, both regions offered more fluid intraregional mobility for members, as compared to other areas. While developed with different aims and outcomes, the EU and South America boast some of the most advanced mobility policies and regional integration processes worldwide (Brumat and Acosta 2019).¹ Our evidence stems from government websites, newspaper columns, blogposts, the worldwide International Travel Restrictions in Response to the COVID-19 Outbreak Dataset (Piccoli, Dzankic, and Ruedin 2021), and reports from the European Migration Network (EMN) on coronavirus-related immigration policy changes in the EU-27 countries.

During COVID-19, the two regions showed similarities and differences in (im)mobility changes, ranging from relative openness to 'lockdown'—the latter term embodying an eerie conversion of prison confinement to sudden everyday usage. Openness (i.e., allowing mobility) came in a variety of forms: planned and organized openness as an approach to virus contagion (e.g., in Sweden); unorganized, or spontaneous, openness led by political leaders or so-called "Covid deniers" (e.g., in parts of Brazil) and openness by default, when countries announced lockdowns but failed to completely enforce them (e.g., Chile). These last two varieties demonstrated gaps between policy on paper and in practice—in turn, failing to comply with recommendations from the World Health Organization and Centers for Disease Control and Prevention to lower contagion.

Full lockdown meant closing external borders for almost all entry and exit (e.g., Ecuador, Peru, and Poland) and limited internal movement enforced through self-isolation and curfews (e.g., Italy). Such lockdown procedures meant to contain the spread of the virus thus limited both external and internal movement by closing international borders between sovereign states and prohibiting internal movement within territories. While changes were transitory in states of emergency, they impacted strata of the population differently (in terms of socioeconomic status, urban versus rural location, and migrant legal status), which can spur future spillover effects.

Contemporary democracies allow certain individuals to enjoy certain mobility rights because of their nationality; the passport they hold (nationality) conveys their bundle of rights (citizenship) for their origin country. Nationality sometimes also influences their rights as immigrants in a residence country, e.g., regional migrants enjoy more rights throughout the EU and South America, as compared to extra-territorial migrants (called Third-country nationals in the EU), while national citizens still hold more rights than regional immigrants. Nationality largely determines the right to exit and re-enter a territory—a right inherent to nationality in advanced democratic countries. Where the right to reside in one's 'own country' is innate, internal mobility within the country is also typically allowed. States' obligation to 'protect' nationals was reflected in initial policy reactions to the coronavirus outbreak.

Nationals were the most common exception to travel restrictions from March to May 2020, implemented by about 90% of states, according to a COVID-19 dataset covering 211 countries and territories (Piccoli, et al. 2020). Movement was further allowed for essential workers. While healthcare facilities needed to treat coronavirus patients and handle urgent care, 'essential' also included some workers in food and agriculture sectors, emergency services (fire and police), basic sanitation, utilities maintenance, executive governance, and transportation (PAHO 2020). Unpermitted movement, most notably by informal workers in South America, did not necessarily cross borders but were internally mobile. Even in full lockdown, some broke quarantine to work, reflecting the (miserable) tradeoff between potential death from COVID-19 versus starvation.

While the categories of restrictions and exceptions reaffirmed previous socioeconomic hierarchies during and post-pandemic, they also curiously showed new inclusivity of migrant residents. Most states took responsibility for those in the territory—in the first months of the pandemic, about 85% of countries worldwide considered residents as exceptions to travel restrictions (Piccoli, Dzankic, and Ruedin 2021). Since holding nationality typically offers greater rights than those attached to residency, when governments considered residents as exceptions, they put residency on par with nationality. The exceptions increased

mobility, despite knowing that movement of many people close together in enclosed spaces would increase contagion.

In Section 2, we introduce mobility rights, inner and international borders, differences between citizenship and nationality, and outline the relation between mobility and migrant legal statuses. Using EU and South American country examples, we dedicate two sections to discuss the results of our first research question: Section 3 covers shifting borders within and between countries then Section 4 discusses citizenship before and during COVID-19. Considering some government reactions coasted into uncharted territories, we tackle the second research question in Section 5, outlining long-term consequences on mobility, borders, and citizenship.

2. CONCEPTUAL FRAMEWORK OF MOBILITY, BORDERS, AND CITIZENSHIP

Attempting to regulate human mobility during the pandemic, governments' short-term policy reactions increased both mobility and immobility, depending on individuals' nationality, place of residence, occupation, health, wealth, and familial ties. Implementing restrictions, states closed borders and enforced self-isolation, decreasing mobility. Granting exceptions, states led repatriation procedures and granted special mobility rights to some individuals, namely nationals and residents, corresponding to emigrants, immigrants, and dual nationals.

COVID-19 served as a reminder that boundaries and rights are not fixed, as governments deemed some workers 'essential' to the economy, including many internal, international, and cross-border migrants. Accounting for all sectors and defining such essentiality represents an insurmountable knowledge problem, given its layered complexity and missing information. On COVID-19 policies, Pennington (2020) highlights that, "in the specific case of pandemic response, the level of complexity and uncertainty may be so great that it is not possible for such calculations to be made" since concrete data is inexistent or because "micro-level connections that underlie such data are opaque." Trying to untangle the web of the macro-economy, its spontaneous orders of current and future needs, and actors' desired transactions, represents a far-fetched feat for central planning (Paniagua 2016). Yet, like point-based immigration regimes that use such calculations to determine who receives visas, governments listed specific workers as exceptions to mobility restrictions. In addition to obvious needs like prevention, detection, and treatment of COVID-19, how many workers were needed? Were they coming internally or from abroad? To what extent were various positions within the sector needed to operate? Stretching father into the supply chain (e.g., administration, cleaning staff in clinics, pharmaceutical vendors, factory workers of medical supplies, etc.) shows blurriness in where mobility restrictions and exceptions lie.

The movement of persons, goods, and services facilitate these production cycles in modern everyday life; regarding human mobility, we conceptualize that movement crosses two main types of borders: inner borders and international borders. The first entails internal movement, or crossing areas within territories (e.g., neighborhoods, cities, subnational regions). Balibar (1997, p. 78) paraphrases Fichte to highlight that inner borders (*innere Grenzen*) are "invisible borders, situated everywhere and nowhere." During the coronavirus outbreak, the rules for crossing inner borders (i.e., internal mobility) were less specific to nationality. The national-foreigner distinction is older than the nation-state and continues to infiltrate immigration debates (e.g., on visas, integration, social benefits, walls, rights, deportation). Within countries, COVID-19 stirred a partial temporary effect. Anderson (2019) gives an example: "We must look after our own first. We must first attend to the housing, benefit and health needs of our population ... The 'we' here is the citizen talking across the border, but in addresses within the border, the 'we' may be the taxpayer, or residents in a municipality, or homeowners". During the outbreak, the 'we' emerged from perceived health threats rather than from solidarity or belonging based on nationality or connections to the nation-state.

The second type, international borders, demarcate sovereign territories with invisible but enforceable boundaries. With people and goods continually crossing over them (exiting one country then entering another), along the lines runs international tension or cooperation. While borders are invisible and political

(Balibar 1997), they can be recognized by the presence of military or public officials, flags, border crossing points, or signage, giving them physical attributes. Polities seek to re-position themselves “within a broader constellation of polities” by attempting “territorial rescaling” (Arrighi and Stjepanović 2019, p. 220). Since individuals and groups repeatedly try to change them, international borders are contested and far from fixed. When borders move, they “disrupt the legal status and rights of those who live in that territory or are in some ways connected to it” (Arrighi and Stjepanović 2019, p. 221).

States have also been ‘pushing’ borders into other territories in the sense of outsourcing border control procedures and bureaucracy to offices and locations abroad. As a result, people’s preparations to cross borders more often begins in another territory (Shachar 2020), for example completing ‘pre-migration bureaucracy’ in origin countries to obtain a visa for the destination country (Finn 2019). In terms of mobility, the potential migratory journey could thus end before ever crossing a border—which is the intended outcome of border control mechanisms: filtering the wanted, desirable, and ideal from the rest. Given states’ long-standing use of selective mechanisms, they predictably also used them during COVID-19 to enforce immobility and allow exceptions. What was surprising was *who* states deemed as exceptions for mobility. The major exceptions of interest relate to migrants: nationals living abroad (emigrants and their descendants) and residents (immigrants), with either group holding dual or multiple nationalities.

To clarify, citizenship is generally used as a synonym for nationality in the EU whereas the two terms differ in South American countries’ constitutional laws. Nationality appears on a passport or identification document, showing one’s national belonging or legal membership (see, e.g., Pedroza and Palop-García 2017). The notion that all status-holders possess equal rights embodies an inherently democratic view (van Steenbergen 1994). Related, but legally distinct in many countries, citizenship focuses on the internal aspects of the relationship, i.e., what rights, duties, and obligations the state and the individual have under domestic law (Bauböck 2006a, GLOBALCIT 2020). The individual-state citizenship exchange involves a variety of rights: civil rights, i.e., basic personal liberty, rights to property and justice; political rights, i.e., to participate via democratic institutions; and social rights, i.e., access to basic social welfare and education, allowing individuals to practice their other rights to the fullest (Marshall 1964). While citizenship dates to ancient Greek city states (Heater 1999), countries’ initiatives to control cross-border movements stem from around the French Revolution (Torpey 2000), underlining the dominant notion of nationality as individuals’ legal connection to a nation-state.

Alongside increased international human mobility, rights have expanded in countries, regions, and globally through international agreements, laws, and courts: many democratic states extend civil, most social, and some political rights to nonresident nationals and foreign residents, who can maintain different linkages to multiple states simultaneously (Levitt and de la Dehesa 2003, Arrighi and Bauböck 2017). Detailed by Pedroza (2019), granting citizenship rights (e.g., the right to vote) to foreign residents has pushed the concept of ‘citizenship beyond nationality.’ States have unbundled rights in a way that, through residency, individuals can gain rights traditionally reserved for nationals (Vink 2017).

Migrants’ rights nonetheless still correspond to their legal status indicated by short- or long-term visas, residence permits, or carrying an irregular legal status (i.e., ‘undocumented’, with expired or without documents). These categories define the right to (re)-enter, reside, work, and access benefits—which will expire with the visa. Renewing a visa extends access to rights whereas naturalization (adopting a new nationality) can guarantee further or almost indefinite access.² Migrant legal status played a major role in determining access to rights and mobility during COVID-19.³ Considering the governance of human mobility during the first six months of the coronavirus pandemic, how did policy reactions affect the concepts of borders and citizenship?

3. MOVING BORDERS

During COVID-19, external borders pushed further into other territories and internal borders fluctuated. National-level state actors controlled the first through checking health statuses (e.g., requiring a negative

result of SARS-CoV-2 or later, proving immunity) and biometric controls extending before, at, and after crossing international borders. Digital identities—sometimes collected without individuals’ consent—show prior movement and personal details, compiled into international databases that can affect future mobility. Internally, subnational public actors and individuals played stronger roles in setting or reinforcing inner borders. Physical blockades and controls emerged between regions (e.g., in Italy), states (the United States [US]), cities and municipalities (Chile), and even neighborhoods (Brazil). Many South American countries militarized border crossings, in the process trapping individuals trying to transit and instigating illegal crossings (Brumat 2021).

States faced normative legal decisions of closing borders for all, some, or no one (i.e., leave them open). Governments and policymakers unsurprisingly lacked time to implement the ‘best’ policy. Too many unknown variables about contagion and people’s reactions—including abiding or breaking quarantine—meant policymakers had to rely on “centralised guesswork by ‘big players’” and “subjective interpretations of epidemiological and economic models to guide their decisions” (Pennington 2020). Given such country-specific variables, no ‘best’ policy could exist, nor copycat moves advocated for, during a state of emergency facing a new virus.

As immobility continued, production slowed or stopped, and unemployment rose—instigating what may become the “worst economic downturn since the Great Depression” (Gopinath 2020). Migrants who lost their jobs faced the possibility of also losing their legal basis for residence, more so in the EU than in South America, since the former more commonly issues residence permits linked to employment status or sometimes to migrants’ income bracket. Countries used two policy solutions to alleviate this issue: they changed the standard visa rules and granted financial subsidies.

The first approach of adjusting migrant legal statuses was implemented by over half of the EU member states; they allowed immigrants who became unemployed to keep their residence permits. Cyprus, for instance, extended the window for seeking a new job by six months (EMN/OECD 2020a). Contrarily, the EMN ad hoc query reports that nine member states did *not* allow such immigrants to extend their residence permit. However, not all migrants slipped into irregular statuses. Instead of extending residence permits, Estonia granted the temporary right to remain in-country until travel bans were lifted and allowed the newly unemployed to work in the agricultural sector, which had suffered a loss in labor force due to pandemic-related restrictions barring seasonal migrants from entering the country (Jakobson and Kalev 2020). Many countries allowed similar extensions for foreign students facing mobility restrictions to return to origin countries, letting them finish their studies delayed by the pandemic (EMN/OECD 2020b). South American countries also created new policies: Argentina, Brazil, Chile, Ecuador, Paraguay, and Peru extended the expiry dates of all temporary residence permits—to avoid physical proximity at normally overcrowded visa offices—while Uruguay kept scheduled visa-related appointments (IOM 2020a). Despite official extensions, in practice Brazilian authorities continued to ask immigrants for valid non-expired documents ((In)movilidad en las Américas 2020a).

The second approach of implementing financial support schemes was widely used in the EU and South America. Most EU member states primarily targeted EU nationals, thus leaving immigrants from third countries in a more vulnerable position. Contrarily, several states extended social rights (including unemployment benefits in some countries) that only nationals had previously enjoyed, to most Third-country nationals (EMN/OECD 2020a). In South America, Brumat and Finn (2021, in press) report that Brazil implicitly included immigrants in their emergency help fund but others, such as Chile, included immigrants on paper but not in practice.⁴ Argentina’s subsidy targeted vulnerable groups but required a two-year residence and an application, resulting in blocking 80% of immigrants from accessing it ((In)movilidad en las Américas 2020b).

Within countries, solidarity based on nationality crumbled as internal borders surfaced as new social constructs. Instead of ‘we’ as a nation, ‘we’ emerged as self-acclaimed groups within designated areas. The ‘we’ in Chile were smaller towns and municipalities outside the capital city of Santiago, where people started associating all residents of the capital, the *santiaguinos*, as an infected population. Before the national

government had time to react and prohibit interregional movement, individuals physically barred those from ‘outside’ from entering ‘their’ area by setting car tires and other materials on fire to blockade main roads (La Tercera 2020). Their signs stated, “Go back to Santiago—I live here, you do NOT!” (ibid). This ‘you’ represents the ‘other’, the ‘outsider’, the ‘undesirable’, and the ‘them’ in the us-versus-them lingo (e.g., Anderson 2013, Domenech 2015, Kukathas 2021). While in other contexts, this ‘you’ would refer to foreigners, during the pandemic, people’s location was used as a shorthand to gauge the chances of carrying COVID-19. Thus, residence trumped nationality.

Residence did not, however, rise above ethnic background: Chan and Montt Strabucchi (2020) describe Chinese and ‘Oriental’ individuals being targeted as threats in Chile, as ‘others’ and coronavirus carriers, in turn undoing advances in anti-racism and xenophobia. Lumping all Asian people together ignored rights related to nationality—since, of course, many are Chilean nationals—and ignored equal rights based on residence. Similar rises in xenophobia stretched across Asia, in Australia, and in the US, alongside upticks in racism and anti-immigrant sentiment (Gamlen 2020). Reports further arose in Europe; the former Italian Minister of the Interior Matteo Salvini accused asylum seekers from Africa of being ‘importers’ of the virus and called for border closures (Devakumar et al. 2020). A quasi-experiment in Germany reports more optimistic findings: such spikes in targeted hostility during COVID-19 occurred against a backdrop of overall support for inclusive norms, meaning the pandemic did not significantly affect public opinion (Drouhot et al. 2020). Whether social reactions will affect overall trends or not, inner borders emerged that added at least short-term divisions between people based on ethnicity and assumed health.

Border closures, including for air travel, during the COVID-19 pandemic served as a stark reminder that sovereign states control borders and will change them as they deem necessary, in turn affecting individual-state relations and the rule of law. During state of emergencies, governments infringed on individual rights to move in and between countries, declaring restrictions (immobility) for some yet exceptions (mobility) for others. Governments deteriorated the meaning of the rule of law in the name of public safety by differentiating between people and frequently changing measures since it lowered individuals’ ability to predict their mobility and income. Whereas origin-country obligations and rights have long been determined by legal membership as defined by nationality, exceptions for mobility came from both origin and residence countries and related to nationality and residence, as well as occupation, health, and wealth.

4. MOVING CITIZENSHIP

Since states define which individuals have rights, and under what conditions, citizenship may appear as fixed, a rights-duty relation; but changed legal definitions and notions of who are the people mean that citizenship, as rights and practices, is a fluid concept. Redefining who is an immigrant (e.g., by counting or excluding international students as immigrants) changes how many immigrants live within a territory (Kukathas 2021). Re-defining the boundaries of the demos (i.e., extending or withholding suffrage to emigrants or immigrants) changes who is a member of the political community within a territory (Arrighi and Bauböck 2017, Finn 2020). Moreover, “migrants are not only objects of laws, policies and discourses but also agents” (Bauböck 2006b, p. 10). Individuals exercise rights by participating if and when they have formed some kind of identity and connection with a given state (Jakobson and Kalev 2013)—meaning that individual-level practices affect citizenship. Given such developments, citizenship has long been changing, or ‘moving,’ within and across borders.

On the one hand, COVID-19 reinforced national-state relations; Spiro (2020) highlights that “the pandemic demonstrates the continuing strong pull of national identification... many people went back home, not only those who were travelling abroad as tourists but also those who have been working and resident abroad. That seemed natural.” This view of being ‘natural’ reinforces the traditional national citizen-state relation—in this case, the origin country takes the role as the ‘homeland.’ Despite globalization, individuals chose to exercise their right to return and states kept promises to protect nationals. On the other hand, the crisis challenged certain national-state relations; some dual nationals in China were denied evacuation to

Australia and the United Kingdom (UK) if they had entered China with a Chinese passport (Dzankic and Piccoli 2020). This indicates a double standard within Australian and British policy toward their (equal) treatment of dual nationals. The events also underline the duality in migrants' legal status: individuals hold certain rights but must play by the rules in two countries.

Nationality played a strong role in countries' mobility exceptions, both globally and in the two regions of interest. As mentioned, almost all countries worldwide with restrictions made mobility exceptions for nationals and residents. In South America, all 12 countries closed international borders after the pandemic was announced in March 2020 but no regional-led response emerged. Some countries opted for additional internal measures like mandatory quarantines (e.g., Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, and Peru) or voluntary ones (Uruguay and Venezuela) (Brumat and Finn 2021, in press). Coordinated response was slow in the EU; most countries imposed travel bans but allowed nationals and foreigners holding long-term residence permits to enter (EMN/OECD 2020a), following common trends. Countries thus drew a distinction between 'us' and 'them' based on residency. While prioritizing residence over nationality makes sense from the epidemiological perspective (having people stay where they are), it showed an important, albeit transitory, change in rationale, as compared to how nationality is typically treated in other crisis situations—when countries are expected to focus on offering diplomatic assistance and evacuate nationals abroad.

Portugal granted residence to all immigrants and asylum seekers with pending applications, in effect granting them equal citizenship rights, including health, social support, employment, and housing (Público 2020). The policy granted blanket rights, regardless of nationality and current legal status, to focus on public health within the country. Contrarily, some states denied nationals long-standing rights; Ecuador and Peru announced total border closures, providing a one-day notice for nationals on holiday or living abroad to return, then allowing in only "vulnerable" nationals (El Mostrador 2020).

For cross-border migrant workers, continued labor activities required international cooperation to exit one country and enter another. Being neighbors, many Estonians commute to Finland to work; during the pandemic, Estonia waived self-isolation for nationals to enable commuting, but Finland did not. Governments' conflicting short-term reactions forced workers to remain in Finland, which many of them did, or return home, likely being left unemployed. The mobility bubble that arose among the Baltic States (Estonia, Latvia, Lithuania) demonstrates how smaller pockets of free movement can emerge despite overall restricted movement. International cooperation to align policy reactions could have ameliorated the situation but with scarce time and information, normally cooperative governments such as Estonia and Finland clashed in their mobility exceptions. It reduced migrants' normal rights linked to national citizenship and regional migration movement, becoming dependent on the rules of two countries.

Regarding travel limitations during the outbreak, the dichotomy of national versus foreigner did not always apply. In many ways, the higher echelons of talent migrants experienced the crisis more profoundly. The pandemic slowed down study migration, with over half of potential candidates postponing their enrollment, and many looking to change their destination country (Studyportals 2020), as the major student destination countries faced some of the highest contraction rates (IOM 2020b). Meanwhile, the European Commission called on member states to treat some seasonal laborers working in blue collar sectors as essential workers—granting them mobility to enter territories inaccessible for other migrants (EC 2020a).

The virus did not check passports or visas. While anyone could fall ill, eliminating the nationals-versus-foreigners distinction, demographic and socioeconomic strata faced different probabilities of contracting and recovering from coronavirus. Some internal movement in South America occurred by bus or on foot, close to others or in enclosed spaces not permitting physical distancing, which heightened these migrants' chances of contracting the virus (Acosta and Brumat 2020). Wealth and occupation greatly mattered, determining if people could continue to work (in-person or online) or survive without working. Housing and work arrangements determined if people could comply with the recommended physical distancing. Compared to the more well-off, those in more precarious positions faced greater ramifications from the pandemic restrictions (ILO 2020).

At the individual and household levels, (im)mobility did not differentiate between nationalities, but four factors became more important during the pandemic: 1) family ties linked to mobility exceptions, e.g., for family reunification and emergency travel; 2) occupation, e.g., having an essential job, a formal contract, and optional work from home; 3) health, since certain prior conditions increased vulnerability for contagion and fatality; thereafter, regular health checks (e.g., monitoring body temperature) also determined if one could continue to work; 4) wealth expanded socioeconomic schisms between those with or without financial nets, access to healthcare services, and technology at home to facilitate education and labor activities.

Transitory policy changes in reaction to the pandemic also showed drawbacks at the regional level, negatively affecting both the notion of European Union citizenship (see Maas 2020) and further damaging the South American regional mobility regime (Acosta and Brumat 2020). While EU national citizens typically enjoy more rights than Third-country nationals—e.g., the freedom of movement within the EU and civil and social rights equal to those of nationals—the pandemic notably restricted their privileges vis à vis extra-territorial migrants, as national travel bans and contagion rates governed their mobility (Davies 2020). The same occurred in South America, particularly for Venezuelans who faced fewer rights and lower access to mobility, despite being regional migrants (Brumat 2021). While the European Commission worked towards a common framework for travel restrictions (EC 2020b), they treated EU nationals and Third-country nationals alike. The pandemic thus undermined the notion of EU citizenship as a rights-based status, as compared to national citizenship or permanent residence. The only exception EU nationals enjoyed was the right to transit through other member states to return to origin countries (Mantu 2020).

5. MOVING FORWARD

Governments tried to decide which workers were essential, how to avoid the economy crashing, protect people in the territory, and forecast where, how, and how fast the virus would spread. Coupled with rapid contagion and deaths around the globe, such an impossible feat led to 2020 being a year to forget—but its effects on mobility, borders, and citizenship will linger. While mobility reactions during the pandemic may have been justifiable during states of emergency, they may be less convincing moving forward. Government-led reactions further stratified rights based on migrant legal statuses and added health and occupation categories. People were thus treated differently at border crossings and within countries, undermining the rule of law and creating unpredictability for individuals to forecast their ability to move and earn income.

Short-term measures taken during states of emergency to protect public health revealed creeping Leviathan states with possible continued control over societies in the longer term. Like how terrorist attacks post-2001 rippled through the public allowing governments to infringe on privacy, COVID-19 has created new justifications for controlling everyone's movements, using "surveillance tools typically reserved for counter-terrorism and espionage" (Shachar 2020). In half a year, such measures included implementing intrusive surveillance, digitally tracking movement, and barring internal and international mobility. Digital footprints of movement are traceable worldwide (e.g., tracking people's locations through their cellular phones), forming digital identities even without individuals' permission. Data sharing has also spread (e.g., to cross-reference facial recognition, fingerprints, visa backgrounds, etc.) (Micinski 2020). While smart borders were already widely used from Abu Dhabi to the UK—and since at least 2000 in the US (CNN Travel 2019)—efforts were pushed forward faster. External borders prove moveable: "digital identity systems, interoperable databases, and mandatory information sharing make possible the monitoring and control of all people, *everywhere*, instead of the state limiting its surveillance to people *within its territory*" (Micinski 2020, p. 14, emphasis added).

Control outside external borders of sovereign territories entailed health checks and medical certificates (e.g., negative SARS-CoV-2 tests), restricting mobility before individuals neared borders (Shachar 2020). For immigrants, health tests may remain a pre-filter before crossing borders, or added to pre-migration

bureaucratic document processes in origin countries (Finn 2019) when applying for visas. For emigrants, nationals living abroad who returned to the origin country may or may not relocate again. Such decisions impact both the previous residence country, which has lost an immigrant and likely a worker, and the origin country, which has gained a return migrant, likely unemployed on arrival. While only about 3% of the world's population lives in a country outside where they were born, it equates to 168 million international migrant workers (ILO 2018). Gamlen (2020) foresees an increase in temporary labor migration schemes and immigration point systems in order to fill labor demands and also cherry-pick the higher skilled. Mobility regulations and individual choices during the pandemic can affect future choices to return, move elsewhere, or not migrate at all, impacting labor markets and supply chains across borders.

Alongside changing international borders, *internal* borders also fluctuated regularly, demarcated by individuals and local governments. People stepped in when government would not, like in Brazilian neighborhoods enforcing their own COVID-19 precautions (Martins Junior 2020). New hierarchies emerged for international mobility and migration. To “protect” local ground, (sub)nationalism surged in some places and individuals and local governments closed off to ‘outsiders’ of neighborhoods and cities—prioritizing residence above nationality. Such bottom-up reactions underline heightened control by mayors, governors, and municipal governments, which may roll over into new constituent support in future local elections.

Old and new stereotypes emerged about who insiders and outsiders are, which surprisingly did not exactly align with nationality. Ethnic targeting increased, for instance against ethnically Chinese, even as nationals of where they live. The targeting was partially inverted across Asia, for instance in Malaysia, Myanmar, and Singapore, COVID-19 reactions displayed heightened xenophobia and racism against immigrants (Gamlen 2020). Phobias of ‘others’, stereotyped hygienic practices, and unknown health conditions are reminiscent of prior migrant exclusionary policies. Stigmas of real or imagined health—such as with leprosy, polio, typhoid, syphilis, and mental health diseases—have all been incorporated in immigration policies of past centuries targeting, for example, Irish, Italians, Chinese, and the Jewish population (Kraut 1995).

Contemporary advances in biometric borders make the body, rather than documents, the “ticket of admission” or the excuse for denial (Shachar 2020); (inter)national information systems and watchlists recording data such as overstayed visas or criminal charges may soon be complemented with past health statuses and vaccinations received—establishing a type of ‘immunity passport’ (Adey et al. 2021). States with (perceived) capacity will continue in their attempts to control the number and types of immigrants entering and residing in the territory. Filters reflect long-standing immigration policies attempting to choose ‘desirable’ immigrants and deter or deport the ‘undesirable’ (see, e.g., Domenech 2013, 2015).

CONCLUSION

Governments around the world reacted to COVID-19 in 2020 with a plethora of policies to control international and internal human mobility. Exceptions to cross international borders often included nationals, residents, sometimes their families, diplomats, humanitarian workers, and essential workers. While ‘public safety’ has allowed states to trump individual freedoms and privacy, ‘public health’ reemerged with similar effects limiting mobility rights, adjusting citizenship and borders ‘as necessary.’

To enforce mobility policies for both nationals and foreign residents, Leviathan-style approaches emerged or solidified—and may continue. Sovereignty, which was once losing its relevance as a ground for legitimizing immigration control (Hirst et al. 2015), came booming back in an international race towards halting the spread of the virus. When deciding immigration laws, strong democratic countries are not losing “morality and legitimacy” with respect to their borders (Dauvergne 2004, p. 611); during COVID-19, they revised immigration rules on a day-to-day basis and reinforced sovereignty. The pandemic-related Big Brother scenarios will be difficult to retract, even in liberal democracies. Surveillance techniques can “‘spill over’ to regulate the mobility of citizens as well, especially in times of crisis. The once-fixed territorial border is thus not just shifting inward and outward, but also multiplying and fracturing. Each person ‘carries’ the border with her” (Shachar 2020). Monitoring measures were pushed forward faster, along with extended

controls before, at, and after crossing (inter)national borders (Adey et al. 2021). Such tightened control lowers freedom not just for migrants but for *all* individuals (see Kukathas 2021).

By examining select European and South American countries, our findings on the conceptual malleability of borders and citizenship rest on two pillars: legal status, at the core of individual-state relations, and states' views on the economic 'necessity' of individuals. Both "borders and citizenship are politically constituted and historically and economically embedded" (Anderson 2019). In this sense, COVID-19 served as a reminder that boundaries and rights are not fixed. Transformed borders and citizenship had short-term effects on individuals' rights—as an inconvenience for globally mobile individuals yet life-threatening for many other migrants, particularly those in the informal labor market and in 'limbo' between legal statuses or stuck between borders. While nationality, along with occupation and wealth, continues to play a key role in mobility, many countries put residents on par with nationals by, e.g., granting residents mobility exceptions. In some cases, residency presided over nationality, such as EU countries extending rights to resident Third-country nationals that intra-EU free movers did not enjoy. The temporary measure was meant to minimize spreading the virus, however, immigration policy tends to be notably path-dependent (Boswell 2007). So, if the pandemic-related restrictions persist, we could witness a freezing-over in international mobility with current migrant residents facing a chance to stay in-country while potential future mobilities remain on hold.

The pandemic may permanently change mobility and residence by unevenly maintaining barriers. Richer mobile individuals will be more selective for where and when they travel, study, and work, whereas others will move out of necessity, eager to send much-needed income back to families struggling because of the pandemic (Gamlen 2020). COVID-19 exposed the ugly pre-existent juxtaposition that essential workers give everything to make economies run more smoothly, which in turn benefit entire societies. Facing this has not destroyed the continuum between mobile rich versus poor but rather resulted in more categories ranking who is 'essential', why, and when. Even if many irregular migrants were emancipated in the public eye as essential workers during the pandemic, with certain migrants receiving more rights, there is little reason to believe that a paradigm shift has occurred. Even when fluid global movement returns, migrants with certain legal statuses will be in a relatively more precarious position, especially in a world where healthcare access, including vaccinations, becomes a prerequisite for other rights.⁵

NOTES

- 1 As Brumat and Acosta (2019, p. 54) point out, South America falls short of being a mobility regime since its main document, the Mercosur Residence Agreement offers the right to reside—as highlighted in its title—but fails to secure the right to enter; thus, unlike in the EU, it does not grant the right to free movement. For an English version of the Agreement, see Acosta and Finn (2019).
- 2 While adopting a nationality, or 'naturalizing', in a country deems that person a national, they still may have fewer rights than those who gained nationality at birth, e.g., naturalized persons may have to wait an additional period before gaining full political rights or may lose rights faster if they reside outside of the country (see Shachar 2009, Pedroza and Palop-García 2017).
- 3 The distinction between 'foreigners' versus 'nationals' presented here is more complex and often involves many (often a dozen or more) legal status categories built into the legal system over decades, even centuries (for South America, see Acosta 2018). Additional vulnerable groups who faced Covid-19 restrictions comprised, e.g., stateless persons (those lacking a nationality, or a formal individual-state relation) and asylum seekers.
- 4 To access the subsidy, immigrants needed to present a Chilean identification and resident permit, which are backlogged one to two years, meaning recent arrivals lack such documents. Chile's Department of Foreigners and Migration (Departamento de Extranjería y Migración) became backlogged long before Covid-19, due to higher immigration since 2015 (see Finn and Umpierrez de Reguero 2020).

- 5 We thank the Guest Editor of this Special Issue, Pablo Paniagua, for helpful feedback. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857366.

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Permanent Crisis Management, the Rule of Law, and Universal Basic Income: A Polycentric Approach

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Abstract: As a response to the COVID-19 crisis, governments have turned to various discretionary measures such as cash transfers to consumers and businesses with mixed results. Universal Basic Income (UBI) is back on the agenda as well. One of the main advantages of UBI, as scholars like F.A. Hayek, Milton Friedman, and James M. Buchanan have argued, is that it does *not* depend upon competent and benevolent government discretion—which is often in short supply—but upon pre-established rules. This paper argues that the UBI scheme holds tentative promise from the point of view of improving the institutional crisis preparedness of a complex socioeconomic order. The pre-established rules of UBI buttress the *rule of law* framework that improves the ability of economic agents to spontaneously coordinate their actions in times of crisis characterized by radical uncertainty, disequilibrium shocks, and institutional instability. Furthermore, UBI combines the distribution of fungible resources with the delegation of independent decision-making power to millions of crisis-struck individuals and communities. Compared to discretionary tax-and-transfer schemes, the rules of UBI therefore appear more compatible with the *polycentric* discovery of novel solutions from the bottom-up. In times of crisis, UBI may be relied upon as one cornerstone of what I shall call the *permanent crisis management* framework. Having such a permanent scheme may minimize - although it does not altogether eliminate - the need for discretionary transfers, targeted intervention, and technocratic management in times of crisis. However, this theoretical model of UBI as a facilitator of polycentric crisis preparedness faces several practical challenges that need to be addressed in further research.

1. INTRODUCTION

Imagine that an unknown crisis hits an unknown country. Not all regions of the country are affected equally. Rural farmers and small-town workers experience financial losses while some urban workers even see gains. Youth unemployment rises, but only in small rural towns in the North-East, and only temporarily. People clamour for handouts, better jobs, and better technologies to alleviate their acute suffering and to protect them against future shocks of this kind. Should we create a specially tailored relief program that provides targeted aid to unemployed young farmers and workers in small rural towns, e.g., in the form of targeted unemployment and crisis relief benefits (supplemented by in-kind services such as educational and retraining

programs)? Or should we institute a general program that provides a uniform, non-targeted income floor for the whole society? These questions have become increasingly topical as governments all over the world have turned to various discretionary measures, including temporary cash transfer programs, as a response to the COVID-19 crisis. World Bank reports that, as of December 2020, “a total of 215 countries or territories have planned or implemented 1,414 social protection measures [...] with cash transfers emerging as the most widely used form of social assistance” (Gentilini, Almenfi, and Dale 2020, p. 2).

It *seems* obvious that the targeted approach that takes local needs and circumstances explicitly into account is the optimal approach. A general program operates blindly and lacks certain finesse. Given certain assumptions, societies stand to benefit more from competent discretionary crisis management authorities that produce well-functioning, specially tailored, and targeted solutions that reliably achieve their intended effects. Such programs can alleviate the identifiable suffering of identifiable people by tackling their identifiable problems in identifiable ways. Such prudent and benevolent rule by discretionary tax-and-transfer authorities constitutes a legitimate and noble aim of crisis management.

However, this paper attempts to show that there are major epistemic and technocratic problems with a crisis management framework that relies *exclusively* or *predominantly* on such discretionary authorities. These problems seem unavoidable once we absorb the insights of the political economic literature on complexity, radical uncertainty, and polycentricity (Knight 1921; Polanyi 2002; Hayek 1960, 1982, 1990; Ostrom 2005; Beinhocker 2006; Aligica & Tarko 2012; Colander & Kupers 2014; Aligica, Boettke, & Tarko 2019; Thiel, Blomquist, & Garrick 2019; Kay & King 2020). I suggest that there are three general lessons of this literature that need to be assimilated in developing a robust and resilient approach to institutional crisis preparedness: 1) Radical uncertainty, disequilibrium shocks, and economic insecurity are *permanent* and *systemic* features of a complex society that demand *permanent* and *general* institutional responses, and not merely *ad hoc* and *targeted* ones. 2) Complex market economies, especially in times of crisis, cannot be effectively controlled, let alone micromanaged, from the top down in a discretionary manner due to the inherent demandingness of the task at hand that exceeds all available technocratic competence. 3) As a result, discretionary crisis management authorities, although an eminently useful part of any comprehensive crisis management scheme, ought to be treated as institutionally subservient to a *permanent, rule-bound crisis management framework* that is tasked to solve society’s problems “polycentrically” from the bottom-up.

What, if anything, does the complexity approach tell us about the relative effectiveness of various tax-and-transfer programs as part of crisis management? Although it does not provide anything close to a universal blueprint, it suggests some guidelines and constraints that need to be taken seriously. Once we humble ourselves in the face of complexity, the *primary* (or *default*) means, although not the *only* means, of helping particular people in particular circumstances, paradoxically enough, may be to help everybody equally through a *general, nondiscriminatory tax-and-transfer program*. Contemporary crisis management arguably suffers from an overreliance on discretionary methods, including discretionary cash transfer methods. Targeted interventions, although often desirable, should be made *supplementary* to a general, rule-bound tax-and-transfer program.

What might a crisis-aware and rule-bound tax-and-transfer program look like? As the most plausible candidate, I shall suggest a classical liberal model of Universal Basic Income (UBI) (Friedman 1962; Buchanan 1997; Hayek 1982; Tomasi 2012; Murray 2016; Steiner 2016; Fleischer & Lehto 2019; Zwolinski 2015, 2019). I will argue that UBI, a modest regular cash payment delivered to all citizens with minimal-to-zero means testing or conditionality, holds theoretical promise from the point of view of improving the institutional crisis preparedness of a complex socioeconomic order. One of the main advantages of the classical liberal UBI model is that it does *not* depend upon competence or benevolence in the government—which are often in short supply—but upon pre-established rules that are shaped by the normative principles of simplicity, generality, transparency, predictability, and nondiscrimination. The pre-established rules of UBI buttress the classical liberal *rule of law* framework that improves the ability of grant recipients to spend their money as they wish and to spontaneously coordinate their actions in the face of radical uncertainty *without* the discretionary intervention of emergency authorities. In this way, UBI combines the distribu-

tion of fungible resources with the delegation of independent decision-making powers to millions of crisis-struck individuals and communities. Compared to discretionary tax-and-transfer schemes, the rules of UBI therefore appear more compatible with the *polycentric* discovery of novel solutions from the bottom-up. In times of crisis, UBI may be relied upon as one cornerstone of what I shall call the *permanent crisis management* (PCM) framework, which refers to a set of stable institutional rules tasked to improve crisis preparedness. Having such a permanent scheme may minimize—although it does not altogether eliminate—the need for discretionary transfers, targeted intervention, and technocratic management in times of crisis.¹ The classical liberal UBI model therefore provides a viable and promising alternative to the inevitable push-and-pull politics involved in the discretionary tax-and-transfer state.

The structure of the paper is as follows. Section 2 explores the notion of permanent crisis management in the face of radical uncertainty and explains the polycentric model of governance based on the classical liberal rule of law framework. Section 3 explores three classical liberal Universal Basic Income (UBI) models as plausible candidates for the redistributive dimension of the rule of law framework. Section 4 briefly tackles some objections and offer some rejoinders. Section 5 concludes.

2. CRISIS MANAGEMENT, COMPLEXITY, AND RADICAL UNCERTAINTY

2.1. Crisis management and the problem of adaptation

A moment of “crisis,” following its Greek etymology, requires the development and exercise of *capacities for effective decision-making* that allow agents to survive and thrive in a radically complex and uncertain world. (The verb “*krinein*” means “to decide” or “to judge.”) Crisis management is inseparable from what in evolutionary theory and complexity theory is called *adaptation* (Holland 1992, 1995). Adaptation entails the continuous modification of one’s behaviour in response to the challenges posed by a constantly changing environment: “The readjustments by which the organism adapts itself to the environment require time, and the farther ahead the organism can ‘see’, the more adequately it can adapt itself, the more fully and competently it can live” (Knight 1921, p. 101).

Two closely related concepts are useful here: *adaptive efficiency* and *resilience*. The former derives from New Institutional Economics, while the latter is more common in the polycentricity literature. In Douglass C. North’s definition, “adaptive efficiency (...) entails a set of institutions that readily adapt to the shocks, disturbances, and ubiquitous uncertainty that characterize every society over time” (North 2005, p. 68). It is a close cousin to the concept of resilience which is defined as the “institutional capacity to cope with shocks and other challenges” (Tarko 2017, p. 103). Often in conjunction with robustness, resilience is widely discussed in systems theory and the polycentricity literature (Meadows 2009, p. 159; Ostrom 2005, p. 67; Tarko 2017, pp. 103-136; Carlisle and Gruby 2019, p. 945).

Crisis management, then, is a branch of evolutionary decision-making under radical uncertainty whose task is to increase the adaptive efficiency or resilience of agents within a complex system. Radical uncertainty is one of the “fundamental facts of life” (Knight 1921, p. 178), and in order to cope with it, agents must gather intelligence and exercise critical judgment as individuals and as members of social networks and collective institutions. Although not *every* small obstacle on one’s path is serious enough to deserve the label of a “crisis,” every moment is pregnant with unpredictable novelties and every seemingly stable equilibrium is a potential hotbed of disruptions. Such a continuous reshaping of existing structures, or what Schumpeter called “the perennial gale of creative destruction,” is a permanent feature of a complex and interconnected social order (Schumpeter 2003, pp. 83-84). This implies that “moments of crisis” are neither rare nor fleeting but omnipresent in a complex society. Regardless of which particular disruptions are officially nominated as “crises” in the public consciousness, the unpredictable bubbling of the spontaneous order, through a ceaseless sequence of minor and major emergencies, continually disrupts the plans and expectations of human beings and forces them to adapt to a changing world.

The effective governance of a complex society is inseparable from what we might call *Permanent Crisis Management* (PCM). Creating a robust PCM consists of the identification, nurturing, and periodic reform of the institutional rules and norms that are the most conducive to increasing our individual and institutional resilience (or adaptive efficiency) in the face of radical uncertainty. One plausible solution, on the tempting assumption that resilience requires the abandonment of inflexible rules, is that the government should play the primary role of the benevolent and competent discretionary crisis manager:

In the wake of crises, governments seem like the only entities who have the resources to meaningfully help survivors and the capability to restore disrupted services or provide needed goods and services. National and supranational governmental organizations are often seen as being in the best position to identify the problems, understand the circumstances, provide resources, direct action, and coordinate among the various constituencies following a major crisis (Haeffele & Storr 2020, p. 3).

What are the problems with this view? Let us again imagine that the society plummets into a difficult crisis that causes problems for millions of people in complex ways. Many people suffer. The suffering is not evenly distributed. People are looking for solutions. The solutions to the crisis are not obvious. What should the government do? If we limit our concern to the tax-and-transfer functions of the state, the government must answer (at least) the following questions: 1) Where and how should scarce socioeconomic resources be allocated to best alleviate suffering? 2) Where and how should scarce economic resources be allocated to discover long-run solutions to the crisis? 3) What proportion of social resources should be spent as a short-run investment to the relief of immediate suffering and what proportion as a long-run investment to the discovery of permanent solutions? 4) What are the most resilient parts in the system that need little help since they can survive on their own, and what are the most vulnerable parts of the system that need extra support? 5) Overall, which agents or institutions possess the best problem-solving capacities in relation to the unique needs of the ongoing crisis?

The above list is only suggestive. Available social resources, in any case, must be directed towards the parts of the system—agents and institutions—that need them the most, and away from those parts of the system—agents and institutions—that need them the least. Any robust management framework must find ways to enable institutions, individuals, and businesses to better adapt themselves to a radically uncertain environment. All of this demands immense epistemic competence from decision-makers so that they easily become “blinded by the illusion of control” (Meadows 2009, p. 169). The governance of a complex system must always be accompanied by technocratic humility in order to avoid what Hayek called “the fatal conceit” (Hayek 1990). Even the most competent leaders struggle to find an Archimedean point with which to exercise effective top-down control over the socioeconomic system: “Systems can’t be controlled. But they can be designed and redesigned” (Meadows 2009, p. 169). More specifically, the *rules* of the system can be designed, redesigned, and tweaked. The normative focus of complexity-aware governance should move towards redesigning *the rules of the game* rather than intervening to advance or thwart specific outcomes produced *within* those rules. Clearly, some institutional rules are better than others at solving complex social problems. How do we identify them?

To answer this question, let me contrast two approaches, to be discussed below: 1) *the discretionary approach* to crisis management and 2) *the polycentric approach* to crisis management under the rule of law. These two approaches do not exhaust the possibility space for institutional design, but they offer a useful axis around which to analyse the issue. Although there are many things that people can collectively do to improve their lives in the face of radical uncertainty, I will argue that the polycentric approach forms the best foundation for effective governance in a complex and ever-changing world.

2.2 Discretionary vs. polycentric crisis management

The argument for the superiority of discretionary decision-making over alternative approaches in the production of resilient crisis management is based on two premises—one of them true and the other one false—from which it reaches an incorrect conclusion:

Premise 1: An effective crisis management framework must be agile and responsive in order to correctly interpret environmental signals and produce effective crisis mitigation strategies. (True.)

Premise 2: A discretionary authority not bound by rules is always (or predominantly) more agile and responsive than a permanent authority bound by established and inflexible rules. (False.)

Conclusion: Therefore, an effective crisis management framework must always (or predominantly) rely on a discretionary authority not bound by established rules. (False.)

The weak point in the argument is the second premise, that a discretionary authority not bound by rules is always (or predominantly) more agile and responsive than a PCM bound by established and inflexible rules. Proving the falsity of this premise entails explaining under what conditions a permanent authority bound by rules is *more* agile and responsive than a temporary discretionary authority not bound by rules. The solution to this puzzle will be found in the theoretical insight of complexity theory according to which the rule of law framework is a mechanism for delegating a major portion of permanent crisis management to the crisis-affected people themselves, i.e., to the heterogeneous, rule-following, freely acting, and interconnected agents, seen as avatars of “polycentric” social intelligence.

Here, I am using the term “polycentric” specifically in the sense given to it by Michael Polanyi (2002) which emphasises the interrelationship between the rule of law, individual freedom, and social learning. According to Polanyi, the “polycentric”—or “spontaneous”—“order is achieved among human beings by allowing them to interact with each other on their own initiative—subject only to laws which uniformly apply to all of them” (Polanyi 2002, p. 159).² A “polycentric task” is defined as any task “that can be socially managed only by a system of mutual adjustments” between freely acting individuals that are regularized under some set of abstract rules that determine the scope of individual freedom (Polanyi 2002, p. 184). Paradigmatic polycentric systems, for Polanyi, are science and the market economy (Polanyi 2002, p. 154). In polycentric systems, rules structure the interactions between rule-following agents. As other complexity theorists have noted, simple sets of rules can facilitate the emergence of surprisingly complex and advanced solutions since, through the spontaneous interactions between rule-following agents, “complex and delightful patterns can evolve from quite simple sets of rules” (Meadows 2009, p. 159). Let us call this the “simple rules” paradox in the governance of a complex system: *complexity* in the socioeconomic realm may best be governed by a set of relatively *simple* institutional rules that encourage complex, creative responses from the bottom up. (Of course, not just *any* set of simple rules will do.) Institutionalizing widespread freedom as a way of “[e]ncouraging variability and experimentation and diversity means ‘losing control’” over the trajectories of the complex system (Meadows 2009, p. 160). Nonetheless, “losing control” in a *planned* way—what Meadows (2009, p. 170) evocatively calls “dancing” with the system—is often the only way we can hope to steer a complex system through a radically uncertain terrain.

Hayek aptly diagnosed the illusion: “To the naive mind that can conceive of order only as the product of deliberate arrangement, it may seem absurd that in complex conditions order, and adaptation to the unknown, can be achieved more effectively by decentralising decisions, and that a division of authority will actually extend the possibility of overall order. Yet that *decentralisation actually leads to more information being taken into account*” (Hayek 1990, pp. 76-77, my italics). It should be emphasized that these insights regarding the social value of epistemic decentralization are shared by most complexity theorists. Scholars may differ as to the best precise methods of achieving epistemic decentralization, but they all agree that

polycentric decision-making is an important feature of any workable solution (Hayek 1982; Polanyi 2002; Beinhocker 2006; Colander & Kupers 2014, Hodgson 2019). It is worth remembering that “seeing the social system as a complex evolutionary system is quite different from seeing it as a self-steering system requiring the government to play no role” (Colander and Kupers 2014, p. 5); the right question is not *whether*, but *how*, government should intervene. Although there are multiple governance frameworks that are compatible with polycentricity, I shall limit myself to the classical liberal framework of the rule of law, as interpreted by Polanyi and Hayek, as the most promising framework for my purposes.

Next, I shall explain how this framework facilitates polycentricity. First, we need to understand what the “rule of law” means. In the broad sense, it is a notoriously vague concept that refers to a constellation of interrelated legal norms, including the following: laws should apply equally to all citizens, not discriminate against particular individuals, be adjudicated in common courts, be transparently written, refer to future acts, be widely promulgated, etc. The concept has a somewhat more precise meaning in the classical liberal interpretation of the rule of law associated with John Locke (1988), David Hume (1777), A. V. Dicey (1979), F.A. Hayek (1960), and others. Indeed, it is impossible to disentangle the common notion of the rule of law from the liberal tradition since “every version of liberalism reserves an essential place for the rule of law. And the rule of law today is thoroughly understood in terms of liberalism” (Tamahana 2004, p. 32). In Dicey’s succinct formulation, the liberal rule of law refers to “equality before the law” which he contrasts with the administrative or discretionary style of government (such as the French *droit administratif*) (Dicey 1979, p. 332). Elsewhere, he equates it with “the security given under the English [or any other] constitution to the rights of individuals” (Dicey 1979, p. 184). Dicey contrasts the rule of law with “every system of government based on the exercise by persons of authority of wide, arbitrary, or discretionary powers of constraint” (Dicey 1979, p. 188). This is reminiscent of Locke’s argument that the liberal system of government naturally opposes any exercise of “absolute, arbitrary, unlimited, and unlimitable Power, over the Lives, Liberties, and Estates” of its citizens (Locke 1988, p. 148). The framework of the rule of law, from Locke to Dicey, was therefore a recipe for a limited, liberal government through which, in Hayek’s words, “[t]he coercion which the government must still use [...] is reduced to a minimum and made as innocuous as possible by restraining it through known general rules” (Hayek 1960, p. 72).

The classical liberal rule of law framework provides an institutional scaffolding for improving crisis resilience through a polycentric framework within which millions of independent but interconnected agents can *self-organize* in a decentralized manner to solve social problems. As one of the leading systems thinkers put it: “The ability to self-organize is the strongest form of system resilience. A system that can evolve can survive almost any change, by changing itself” (Meadows 2009, p. 159). A polycentric system is a complex system that can survive almost any change by allowing its component parts (human beings and institutions) to self-organize themselves in creative ways that produce a spontaneous order as opposed to spontaneous chaos. The polycentricity literature is full of examples of how individuals and communities have been able to devise bottom-up strategies for dealing with various emergent problems (Ostrom 2005; Aligica & Tarko 2012). A recent collection of essays, *Bottom-up Responses to Crisis* (Haeffele & Storr 2020), contains an overview of the resources that the polycentric approach has in analysing disaster management and crisis management. The authors argue that vulnerable communities “are more capable than sometimes perceived and do, indeed, participate in their own recovery” so that “individuals and local organizations who come together to respond to crises can be said to bring about recovery from the bottom-up” (Haeffele & Storr 2020, pp. 5-6). Since the rule of law facilitates the ability to self-organize from the bottom up, and since the ability to self-organize from the bottom up facilitates polycentric crisis management, the rule of law is an important cornerstone of any robust system of polycentric crisis management.

I have outlined two divergent approaches to crisis management. On the one hand, the discretionary crisis management model delegates large scale discretionary powers into the hands of a collective decision-making body whose practical wisdom ensures that the state has the adaptive capacity to respond prudently to unforeseen circumstances of time and place. On the other hand, the classical liberal rule of law model wishes to limit the discretionary powers of centralized authorities in exchange for the increased delega-

tion of discretionary powers into the hands of diverse and dispersed individuals for the purpose of achieving “polycentric” social intelligence. Both models are attempts to solve the problem of crisis management under uncertainty by delegating discretionary decision-making powers to agents based on their expected competences and learning capacities. But the two models rely on wildly different epistemic and technocratic assumptions. Political economy *can* and *should* incorporate insights from both perspectives in a mixed approach and it must carefully delegate scarce resources between different authorities. Arguably, the polycentric approach has not yet been utilised to its full potential. In the next section, I shall apply the classical liberal polycentric approach into the context of welfare state governance.

2.3. The rule of law, the polycentric order, and the welfare state

Some scholars have cast doubt on whether the classical liberal framework of the rule of law leaves *any* room for the welfare state. Richard Epstein (1985), for example, has argued that welfare rights are fundamentally incompatible with the common law foundations of the rule of law. After all, in the classical liberal tradition, the rule of law *primarily* refers to the abstract, general, and fixed rules of liberty, property, and justice (Locke 1689; Hume 1777; Hayek 1960). These rules constitute and protect “the rights of individuals” (Dicey 1979, p. 184). Nonetheless, from Locke to Hayek, classical liberalism has not only generally tolerated the government provision of public goods but has always been “congenitally open-minded about distributive questions” (Tomasi 2012, p. 167). What explains this seeming discrepancy?

For one, the concept of the rule of law is a *formal-procedural* one. Its basic function is to limit the scope of legitimate government action, protect individual rights, and enforce the legal regime of abstract and general rules that are equally applicable to all. Such an “empty” conception of the rule of law, defined in purely formal terms, is self-evidently compatible with several government programs and regulations, including the kinds of redistributive programs that constitute a classical liberal (or “limited”) welfare state (Lehto 2015). It should come as little surprise that most contemporary theorists of the spontaneous order (Polanyi 2002; Hayek 1960, 1982; Hodgson 2019) have seen some legitimate role for a tax-and-transfer state as part of their political framework. Polanyi, for example, argued that the state has a role to play in “restricting the range of commercial activities by outlawing unsocial transactions” and in “making provisions for education, health and social amenities, which are insufficiently or unsatisfactorily supplied by commercial sources” (Polanyi 2002, p. 149). Hayek, too, tolerated a wide range of social policies as long as such actions “assist the spontaneous forces of the economy” and as long as “there is no violation” of the principle of the rule of law. Indeed, within those bounds, Hayek thought, “there are fields in which the desirability of government action can hardly be questioned,” including a guaranteed minimum income scheme (Hayek 1960, pp. 331-332).³ Most recently, Geoffrey Hodgson has argued that a “basic income guarantee [is] justified on the grounds that individuals require a minimum income to function effectively as free and choosing agents. The basic means of survival are necessary to make use of our liberty, to have some autonomy, to be effective citizens, to develop ethically, and to participate in civil society. These are conditions of adequate and educated inclusion in the market world of choice and trade” (Hodgson 2019, p. 204). Indeed, many polycentric scholars—including the arch-critic of “social justice”, F.A. Hayek—have been consistent and long-standing supporters of what we today would call “welfare state” measures. To be clear, I do not wish to claim the rule of law should be taken to *recommend* a system of rule-based redistribution. I only wish to emphasize that it is *compatible with* it. Furthermore, it is evident that the contemporary political reality is characterized by the widespread acceptance of the tax-and-transfer state, and scholars should work under that assumption that this is unlikely to change any time soon.

So far, I have argued that the rule of law framework facilitates effective crisis management by upholding a regime of abstract and general rules that enable people to coordinate their actions in a way that makes it easier for them to discover polycentric solutions to emerging problems and better adapt to an uncertain world. That part of the rule of law framework that contains the abstract and general rules that are indispensable for achieving system resilience and crisis preparedness can be called the *Permanent Crisis Man-*

agement (PCM) framework. The PCM framework is compatible with a large range of rule-bound tax-and-transfer measures. What, if anything, makes UBI stand out among the alternatives?

In the next section, let me turn to the current UBI debate. First, I will look at how UBI has been proposed as a tool of crisis management. Then, I will explore three classical liberal UBI models. After that, I will explore the operational rules and meta-rules of the UBI system. I will show that a rule-based UBI system seems compatible with the PCM framework and therefore with the polycentric governance approach to crisis management.

3. UNIVERSAL BASIC INCOME: THE “RULE OF LAW” APPROACH

3.1. UBI, EBI, and crisis management

Universal Basic Income (UBI) has been proposed by some philosophers and economists as a potential replacement of, or a supplement to, the patchwork of existing tax-and-transfer programs (Friedman 1962, Brennan & Buchanan 1985; Pettit 2007; Widerquist 2013; Murray 2016; Van Parijs & Vanderborght 2017); and as a response to heterogeneous crises such as technological unemployment (Rifkin 1995, 2014; Munger 2018). Most recently, it has been proposed as a crisis response to the Covid-19 pandemic (De Wispelaere & Morales 2020). As a response to the COVID-19 crisis, several countries have implemented a wide variety of discretionary tax-and-transfer emergency measures in the form of direct cash transfers. Let me give two illustrative examples, from Canada and Jordan.

In the spring of 2020, the Canadian government set up a “Canada Emergency Response Benefit” (CERB) that gave “financial support to employed and self-employed Canadians who [were] directly affected by COVID-19” at a lump sum of “\$2,000 for a 4-week period (the same as \$500 a week)” (Government of Canada 2021). At the same time, on the other side of the world, in Jordan, the World Bank’s ongoing “Emergency Cash Transfer COVID-19 Response Project for Jordan [has aimed] to provide cash support to poor and vulnerable households affected by the COVID-19 pandemic in Jordan.” It has targeted hundreds of thousands of poor households affected by the pandemic (The World Bank 2020). The Canadian and Jordanian emergency programs are typical examples of “conditional” and “unconditional” cash transfers (CCTs and UCTs). In the global context of poverty relief, CCTs, UCTs, and UBI-like programs have been used with some success to solve various social problems across the world (Haushofer & Shapiro 2016; Lehto 2018; Banerjee, Niehaus & Suri 2019). They are paradigmatic examples of *discretionary, ad hoc* tax-and-transfer schemes applied to targeted subpopulations subject to a range of conditionalities.

A cash transfer program targeted to the whole (adult) population for the duration of an emergency with minimal (or zero) conditionality or means testing is called an *Emergency Basic Income (EBI)*. It is to be distinguished from a permanent *Universal Basic Income (UBI)*. An EBI has most of the features of an UBI, but an EBI is a *temporary measure* with a sunset clause, while UBI is a *permanent measure* that outlasts any particular crisis (De Wispelaere & Morales 2020). No full-blown EBI has been implemented anywhere. Emergency tax-and-transfer programs, from CCTs and UCTs to EBIs, can be helpful tools in solving various social problems during a crisis in the absence of a permanent basic income scheme. Temporary basic income programs have a clear sunset clause, so they are fiscally less burdensome than a full-blown UBI scheme. They may also be easier to push through a democratic process. At any rate, it is clear that discretionary tax-and-transfer programs, including EBI, are fundamentally incompatible with the idea of a *permanent* crisis management framework. Emergency programs are naturally impermanent and transitory. They are unlikely to be implemented very rapidly due to the slow nature of the democratic process, and yet they are likely to be demolished rapidly at the end of a crisis. This means that they will be unavailable when the next crisis hits unless they are reimplemented or replaced by another program. This is a problem if we accept that good governance in a socioeconomic environment characterized by permanent radical uncertainty requires *permanent crisis management*. If this is so, governments ought to focus on building a *permanent tax-and-transfer mechanism*, such as UBI, in advance of a crisis, rather than a temporary tax-and-

transfer mechanism, such as EBI, during one. For this reason, I shall now turn to analyse three proposed permanent UBI schemes which have the theoretical capacity to be integrated into the “rule of law” framework of permanent crisis management.

3.2. Classical liberal UBI schemes: Hayek, Friedman, Buchanan

In this section, I examine three examples of permanent, rule bound, classical liberal UBI schemes as plausible contenders of tax-and-transfer models that could be incorporated into the PCM framework: 1) Friedrich A. Hayek’s case for *Universal Basic Income*; 2) Milton Friedman’s case for a *Negative Income Tax*; and 3) James M. Buchanan’s case for a *Demogrant*. The aim of this section is to explain how these three important classical liberal political economists (three Nobel Prize winners) have proposed UBI-like schemes in order to enforce rules of *general and nondiscriminatory welfare governance*. They all seek to make the redistributive state maximally compatible with obedience to the rule of law while minimizing the coercive, discretionary authorities of the tax-and-transfer state.

F. A. Hayek (1982, p. 143) explicitly tied his guaranteed “minimum income” scheme to the rule of law framework:

The basic conception of classical liberalism, which alone can make decent and impartial government possible, is that government must regard all people as equal, however unequal they may in fact be, and that in whatever manner the government restrains (or assists) the action of one, so it must, under the same abstract rules, restrain (or assist) the actions of all others. Nobody has special claims on government because he is either rich or poor, beyond the assurance of protection against all violence from anybody and the assurance of a certain flat minimum income if things go wholly wrong.

Elsewhere, too, Hayek affirmed that an assured minimum income is compatible with individual freedom and the Rule of Law: “There is no reason why in a free society government should not assure to all protection against severe deprivation in the form of an assured minimum income, or a floor below which nobody need to descend. (...) So long as such a uniform minimum income is provided outside the market to all those who, for any reason, are unable to earn in the market an adequate maintenance, this need not lead to a restriction of freedom, or conflict with the Rule of Law” (Hayek 1982, p. 249). Despite Hayek’s consistent and long-standing support for some kind of a basic income scheme (Hayek 1944, 1960, 1982), he rarely specified the details of his scheme. In fact, Hayek occasionally expressed an explicit preference for a *conditional* minimum income which seeks to exclude work-shy individuals and “hermitages” (Hayek 1990, p. 153). This has led some commentators to argue that Hayekian principles are *incompatible* with UBI (Rallo 2019). Regardless, there are convincing reasons to think that Hayek’s own principles are compatible with, and may require, the abolition of means testing and conditionality (Zwolinski 2015, 2019). It seems likely that any conceivable bureaucratic machinery tasked to monitor eligibility would fall victim to an administrative “fatal conceit” (Hayek 1990).

Milton Friedman (1962), on the other hand, argued for a *Negative Income Tax* (NIT), which is basically a UBI model integrated into the tax system. Although there are some differences between NIT and UBI, the two schemes are mathematically identical in most relevant senses (Mankiw 2016). A less well known but equally interesting UBI model can be found in James M. Buchanan’s *Demogrant* (Brennan & Buchanan 1985; Buchanan 1997, 2005; Buchanan & Congleton 1998). The Demogrant model reflects Buchanan’s and his co-authors’ long-standing concern to limit majoritarian rent seeking in the welfare state with the help of a constitutional application of the principles of generality and nondiscrimination to both the tax *and* the transfer sides of the fiscal state (Lehto & Meadowcroft 2020). Above and beyond the demogrant scheme, “specific actions aimed at discriminating favourably or unfavourably [...] would be out of bounds” (Buchanan 1997, pp. 171–172).

In this section, I have outlined three models of UBI: Hayek's *Universal Basic Income*, Friedman's *Negative Income Tax*, and Buchanan's *Demogrant*. Despite their differences, they are rather similar classical liberal models that satisfy the requirements of the rule of law. I have not sought to determine which one of them is the best model. My only claim is that they all count as legitimate ways of applying the principles of the rule of law to the tax-and-transfer state. What these models have in common is their emphasis on rule-following, nondiscrimination, and generality as normative constraints on the tax-and-transfer state. These features make them resilient tools of *permanent crisis management* in a radically uncertain world.

3.3. The operational rules and the meta-rules of the UBI model

Since the UBI system can be seen as composed of abstract and general rules, equally applicable to all, it is compatible with the “rule of law” approach to welfare state governance. Next, let me analyse these rules of the UBI system. The UBI scheme can be broken down into its *operational* rules and *meta-rules*. Some of the key *operational* rules of UBI are: 1) **GENERALITY**: The abolition of discretionary leeway within the benefit system and the elimination of all exemptions. When the government raises or lowers the amount of UBI for one person, it has to raise or lower it for every other eligible person as well. 2) **NONDISCRIMINATION**: Eligibility and exclusion criteria are non-discriminatory. Nobody who meets some general and simple criteria can be denied full and equal access to the program. 3) **SIMPLICITY**: UBI runs on few, transparent, and clearly articulated principles. This makes it easy to set up and monitor; 4) **AUTOMATABILITY**: UBI can run itself semi-autonomously with limited administrative oversight. In fact, the rules of the UBI system can theoretically be fully automated on a computer.

The operational rules of the UBI system can be summarized, roughly, as follows:

- 1) *Universal eligibility* (e.g., “all adult citizens are eligible”).
- 2) *Universal tax liability* (e.g., “all taxpayers have to contribute”).
- 3) *Nondiscrimination* (e.g., “no person can be denied access to the grant”).
- 4) *Regularity of payment* (e.g., “once a month”).
- 5) *Medium as cash* (e.g., “delivered in dollars”).
- 6) *Sustainable sufficiency threshold* (e.g., “the amount shall be €700 per month”).

What is less discussed in the literature is that these rules—which we may call *operational rules* of the UBI system—should be complemented with higher-order rules—what I shall call *meta-rules of the UBI system*—that define the legitimate avenues for reform and institutional adaptation. No UBI system is complete without some specification of the meta-rules that surround it. The robustness of the UBI system as crisis management tool depends on the right combination of operational and meta-rules. The rules of the tax-and-transfer system should be made sufficiently *permanent* and *inflexible* in order to encourage long-term planning but also sufficiently *impermanent* and *flexible* so as to make the system capable of being changed and adapted to new needs and circumstances. The best way to increase adaptability is to enact binding *meta-rules* that specify the legitimate procedures by which the government can *modify the parameters of the UBI system* without suspending them altogether. The meta-rules may or may not be implemented as explicit *constitutional* rules (Buchanan & Congleton 1998; Berggren 2000; Murray 2016).

Plausible meta-rules may dictate, for example, that “UBI should be indexed to the CPI” (or some other relevant indicator); or that “fundamentally reforming or abolishing the UBI system should require a parliamentary supermajority”; or that “the generosity of the UBI grant is to be revised in the parliament every four years.” Such rules limit the expression of reformist impulses into legitimate channels. To take another example, imagine a meta-rule which states that “under an officially declared state of emergency, emergency authorities are empowered to enact discretionary tax-and-transfer measures according to their prudent discretion; but they are *not* empowered to strip anyone of their UBI.” Such a meta-rule could be used to demarcate the optimal division of labour between discretionary authorities and the permanent UBI system in the PCM framework. A flexible crisis management meta-rule could also take the form of a scalable, two-tiered

system in which one has “a permanent, low-level basic income already in place that can be dialed up to the required payment level as the need arises” (De Wispelaere & Morales 2020, p. 6). It should be noted that these are offered as *illustrative* examples of meta-rules; I am not advocating for them specifically. The appropriate mix of UBI meta-rules is beyond the scope of my analysis.

4. THE SHORTCOMINGS OF UBI: SOME OBJECTIONS AND REJOINDERS

UBI is a very imprecise tool of governance. It seems predictably ineffective against some types of crises: 1) crisis that are better solvable using in-kind means, 2) crises that are purely local in effect, and 3) crises that are exceptional or existential. Let me tackle them in turn: 1) *Crises that are better solvable using in-kind means*. For example, if there is a dangerous terrorist on a bombing rampage across the country, it would be better to simply send in police forces or the military to deal with the issue rather than to send money. A cash grant like UBI may, at best, provide *additional* relief to the individuals involved, but it is unlikely to solve the crisis on its own. 2) *Crises that are purely local in effect*. UBI is best suited to solving crises that are widely dispersed across the whole economy over a long period of time. If a particular crisis is concentrated in a single geographical location or a brief moment in time, UBI casts too wide a net. That said, UBI can still provide important *additional* relief until (if ever) a locally appropriate solution is found, agreed upon, and implemented by the authorities. 3) *Crises that are existential or exceptional*. This includes those crises that put the very sustainability of the PCM into question. For example, imagine that the economy crashes into a deep depression which destroys the viability of the UBI scheme. Or imagine that the government mismanages its monetary policy so severely that the value of the currency drops to near zero. Such examples of *fiscal crisis* and *monetary crisis* cannot be solved with the help of the UBI system since they undermine the functioning of the cash nexus itself. Furthermore, some UBI schemes may contribute to a fiscal or a monetary crisis themselves. Such UBI schemes are incompatible with the requirements of the PCM framework.

In some circumstances, the UBI system will have to take the back seat to other kinds of measures. However, it may be that such crises are rarer than they may appear. Many crises that *appear* to be clearly not solvable by cash may have a dimension to them that happens to be solvable by cash after all; many crises that *appear* to be purely local in effect may have unintended ripple effects to other parts of the system or to the system on the whole (which is especially true in a highly interconnected and complex society); and many crises that *appear* to be exceptional or existential may nonetheless have components that *can* be remedied or alleviated by UBI. As it stands, the capacity of general cash transfer programs to facilitate creative solutions to the ever-present disruptive challenges of socioeconomic complexity is still underappreciated. Furthermore, the optimal solution is almost certainly some mixture of general and targeted crisis management approaches. To avoid a false dilemma, I have argued that UBI should be the *primary* or *default* method of providing cash relief that can be supplemented by carefully bounded discretionary and targeted approaches.

Such a mixed approach becomes doubly important once we realize that the literature on polycentric resilience highlights the danger of relying on universal blueprints, even promising ones, as “panaceas” (Ostrom, Janssen, and Anderies 2007). This suggests that the classical liberal rule of law based UBI scheme is not a panacea that is guaranteed to work everywhere but rather a contingent model whose effect depends upon contextual factors and interactions with the different elements of the system. Furthermore, a monolithic system like UBI—even one that facilitates polycentricity—can create bottlenecks that crowd out alternative arrangements and introduce institutional fragility into the system. It is therefore advisable to diversify and invest additional economic resources into complementary (state and non-state) arrangements that introduce redundancy into the system (Rayamajhee, Bohara, and Storr 2020).

Before concluding, let me tackle the objection that the UBI scheme is “unrealistic” from the point of view of practical politics. In fact, UBI models have been experimented with in several countries with promising if inconclusive results, most recently in Finland between 2017-2018. Based on decades of accumulated data, “[r]esults from the various experiments show consistently that basic income does not substantially affect labour supply but increases well-being.” (Kangas, Jauhiainen, et al. 2020, p. 188; see also Lehto 2018, pp.

13-33) UBI is already within the realm of political feasibility in some countries, although it is likely to continue to face strong political and ethical opposition in the foreseeable future.

5. CONCLUSION

One pandemic will subside, but another crisis will soon take its place. In a complex economy, people are coping with several crises—big and small—at any given time. Resilience under conditions of *permanent* radical uncertainty demands a framework of *permanent crisis management* (PCM). Discretionary interventions, including discretionary tax-and-transfer programs, are an important part of any comprehensive crisis management framework, but my paper has sought to challenge the conventional wisdom that nondiscriminatory, rule-based measures are always, by definition, “inflexible” or “maladaptive.” On the contrary, I have argued that a rule-based UBI scheme has an advantage over discretionary welfare state measures because the inflexibility of its rules makes it paradoxically more capable of guiding the polycentric social order and mobilizing its complexities. The rule of law framework can be used as a robust scaffolding for individual freedom and creativity that reliably generates flexible adaptations to local circumstances of time and place. The “rigid” rules of UBI 1) strengthen the rule of law framework in a way that 2) facilitates the discovery of creative, experimental, and polycentric solutions from the bottom up; this, in turn, 3) enables people and institutions to better adapt themselves to radical uncertainty, which results in 4) improved crisis resilience and social intelligence on the system level.

Paradoxically, it may be best to *give up* on trying to control the minute details of the socioeconomic system in order to effectively provide relief to, and discover solutions to, various local, amorphous, fleeting, and individuated problems. There is an “invisible hand” to the spontaneous adaptations under the UBI system that often outsmarts the “visible hand” of the discretionary tax-and-transfer authority, especially in times of crisis. Government can often do more by focusing on the big picture, i.e., the rules of the game, including *the rules of redistribution*, to strengthen the PCM framework and institutionally prepare for the next inevitable crisis. My argument can be summed up in a maxim: “When in doubt—even if it seems tempting—do not deviate from the rule of law. Instead, redesign its rules to fit the new context.” This is taken to contain a generally valid policy prescription (although not an unassailable one) for permanent crisis management. Limiting the scope of redistributive discretion is neither defeatism nor a callous abandonment of the needs of the poor. On the contrary, abandoning poor people to the mercy of discretionary tax-and-transfer authorities is arguably the more callous and dangerous approach. The UBI framework institutionalizes a legal commitment to guaranteeing access to basic resources to all citizens via the classical liberal rule of law framework. The inflexible rules of the UBI system not only limit government discretion but also secure a system of welfare entitlements more robustly than alternative arrangements.

None of this suggests that the UBI system is the end of the road. Firstly, UBI is at best only a necessary but insufficient part of a more comprehensive crisis management framework that requires a broad commitment to the rule of law, private property rights, open markets, and respect for individual rights. Secondly, UBI will almost certainly have to be supplemented with other tax-and-transfer programs and emergency regulations whose desirability and appropriateness will have to be evaluated separately in each circumstance by appropriate authorities. Thirdly, the UBI system itself will have to be adapted to changing circumstances with the help of meta-rules that specify the scope and nature of its flexibility. Fourthly, even if UBI is accepted as the common basis for permanent crisis management, scholars, politicians, and ordinary citizens will have to decide which *particular* UBI model, or quasi-UBI model, strikes the best compromise between various policy aims. Finally, the current climate may not be hospitable to a full-blown UBI. Governments seem eager to adopt *some* features of the UBI, such as its simplicity and minimal bureaucratic oversight, while rejecting other aspects of it, such as its “excessively” rigid reliance on rules, unconditionality, and generosity towards the poor. It may be a long while before people find the political will, and the moral discipline, to bind themselves to a set of rules that deprives them of the illusion that they have effective control over a complex system whose creative springs they are.

NOTES

- 1 This *rules vs. discretion* debate in fiscal policy has interesting parallels to the *rules vs. discretion* debate in monetary policy (Salter 2017). Indeed, the issues at stake are rather similar, and it is hardly coincidental that one of the major theorists of rule-based decision-making in monetary policy, Milton Friedman (1968), is also one of the major theorists of rule-based decision-making in fiscal policy through his NIT model (Friedman 1962).
- 2 Polanyi's early definition of a polycentric order, with its emphasis on the rule of law, shares many similarities with, but also differs slightly from, the later Ostromian definition of the polycentric order "where citizens are able to organize not just one but multiple governing authorities at differing scales and [e]ach unit exercises considerable independence to make and enforce rules within a circumscribed domain of authority for a specified geographical area" (Ostrom 2005, p. 283). Aligica & Tarko (2012) provide a helpful overview of the continuities between the early Polanyian approach and the later Ostromian approach.
- 3 For Hayek, tolerable government actions may include at least the following: 1) the acquisition of reliable knowledge; 2) the provision of the monetary system; 3) the setting of standards of weights and measurements; 4) gathering information from surveying, land registration, statistics, etc.; 5) financing (and perhaps organizing) some kind of education; 6) sanitary and health services; 7) the construction and maintenance of roads; 8) municipal amenities; 9) public works; 10) secret military preparations; and 11) the advancement of knowledge. For more, see Lehto (2015, pp. 64-71). Even more examples can be found throughout the *Constitution of Liberty*; see Hayek (1960, pp. 340, 374-375, 381, and 406).

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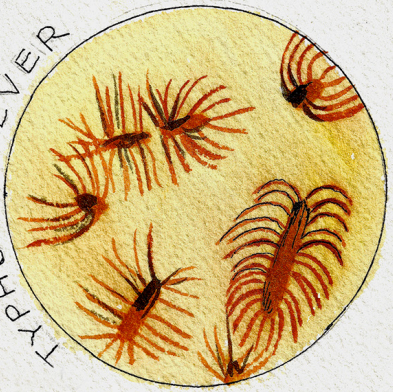
To use as a fully detailed style sheet, please consult the most recent issue of COSMOS + TAXIS.

3. All notes should be as end notes.
4. Please keep mathematical formulae to a bare minimum.

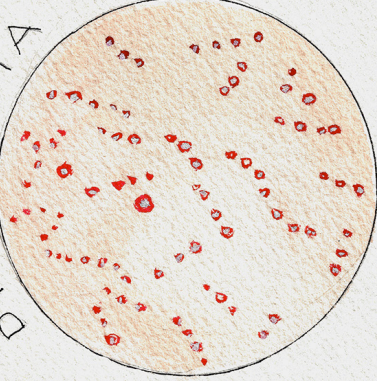
COSMOS + TAXIS acknowledges the generous support of the Lotte & John Hecht Memorial Foundation.

Design and typesetting: Claire Roan, UBC Studios,
Information Technology, The University of British Columbia.

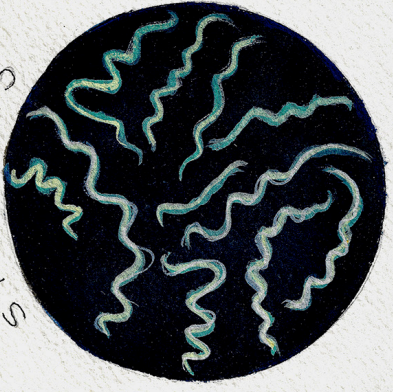
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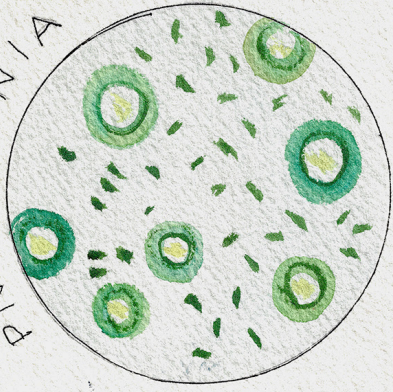
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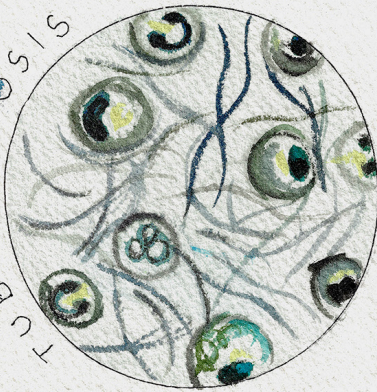
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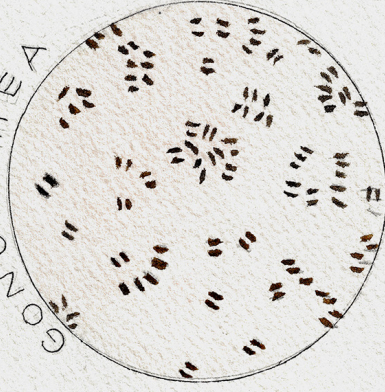
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