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Review

COVID-19 pandemic lessons to facilitate future engagement in the global climate crisis

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A B S T R A C T

The COVID-19 pandemic was declared a Public Health Emergency of International Concern (PHEIC) in January 2020. As of November 2020, over 54 million cases and over 1 million deaths have been reported globally. The sudden coronavirus global pandemic has also pointed to the importance of tackling the global climate crisis even more urgently. This article discusses six lessons drawn from the COVID-19 pandemic that can inform and facilitate greater future engagement in the global climate crisis. These lessons were identified through monitoring and analyzing media coverage of COVID-19 related events during the initial onset of COVID-19 in late January 2020 to June 30, 2020. The key lessons included the potentiality of reducing fossil fuel consumption and greenhouse emissions, the significance of responding late, a case for strong sustainability, the limits of rugged individualism, a (mis)trust in science, and the possibility of large-scale change. The insights put forward point to the fact that, like the COVID-19 pandemic, people need to continue to attach their health to expectations of government action in the context of the global climate crisis.

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1. Introduction

On January 20, 2020, Chinese president Xi Jinping announced to the world the outbreak of a novel coronavirus (COVID-19) in
Wuhan, China (Cranley, 2020). Subsequently, the World Health Organization (WHO), per the International Health Regulations, declared a Public Health Emergency of International Concern (PHEIC) (WHO, 2020), and on March 11, 2020, COVID-19 was characterized as a pandemic (WHO, 2020b). The current global COVID-19 crisis is unprecedented in many ways marking a significant turning point in our history. While nations’ responses have ranged from immediate and forward-thinking to lagged and inconsistent, COVID-19 has changed the way people behave in ways small and large, including frequent hand washing and keeping at least 2 m from others in public (Ballew et al., 2020). Likewise, nations have closed their borders, and travel has come to a nearly complete stop.

The sudden coronavirus global pandemic has also laid bare how linked and interconnected our problems are. Notably, the pandemic has elucidated the significance of addressing another crisis of the natural world: climate change. According to a recent Sustainable Development Goals report, climate change is the most urgent and critical issue on the Agenda 2030 because of its likelihood to bring about catastrophic and irreparable effects (UN, 2019a). A report from the Intergovernmental Panel on Climate Change also maintains that if warming keeps increasing, the loss of ecosystems and other enduring impacts would be certain (IPCC, 2018). The scale of these effects rests on the public’s responses to global warming.

What can one crisis of the natural world teach us about another crisis of the natural world? The pandemic and the global climate crisis both underscore the profound interdependence between humanity and biodiversity, such that the natural world’s vulnerabilities are our own vulnerabilities. Consequently, the pandemic holds critical insights for the climate crisis, which undergirds the theme of this review. Specifically, this review outlines some lessons learned and key insights drawn from the COVID-19 pandemic that could further inform the global climate crisis. While there is a new burgeoning literature connecting climate change and the COVID-19 pandemic (Ching and Kajino, 2020; Heburn, 2020; Manzano and Manning, 2020; Norouzi et al., 2020; Prideaux et al., 2020), few have been interdisciplinary or considered the human behavioral linkages between climate change and COVID-19. In particular, we situate our work within a Lewinian understanding of B = f(P, E), or behavior as a function of Person-Environment interaction because both COVID-19 and the global climate crises emanate at the borders of social context, structures, and “personal” attitudes, ideologies, identities (Lewin, 1939). Moreover, refusing disciplinary monogamy and valuing deep collaboration, this analysis sits at the intersections of engineering and psychology to expound upon the specific global environmental systems and human behavioral dimensions gleaned from the COVID-19 pandemic that could potentially enlighten and facilitate greater future engagement in the global climate crisis. The next section outlines the methodology of our review, then details the six key lessons, and concludes by offering several important insights.

2. Research methodology

This article discusses six lessons drawn from the COVID-19 pandemic that can inform and facilitate greater future engagement in the global climate crisis. These lessons were identified through monitoring and analyzing media coverage (in English, Spanish, Portuguese, and German) of COVID-19 related events during the initial onset of COVID-19 in late January 2020 to June 30, 2020. There is a well-established literature pertaining to the importance of media portrayals of particular social issues and problems as they enable an understanding of the landscape of said issues (Baker, 1986).

The research team monitored approximately 161 days of media coverage and reviewed between 160 and 170 pieces of television and editorial media. The types of media monitored consisted of television and editorial media-online aggregation sites, news articles, investigative features, and reports from the United Nations, the World Health Organization, and the Intergovernmental Panel on Climate Change. The specific television and editorial media included: Deutsche Welle TV from Germany; O Globo News from Brazil; FORO TV and Tele Formula from Mexico; CBS News, FOX News, CNN News, and Bloomberg TV, from the United States. The topic of the media reportage varied, with most having economic (37%) or health (32%) content and fewer relating to the social (20%) and political (11%) aspects of the COVID-19 pandemic.

The media coverage reviewed mainly focused on the content, facts, and circumstances surrounding the COVID-19 pandemic. This involved a careful reading, with particular emphasis on ensuring they were placed within a particular social-political context. The media coverage was then reviewed in detail to extract global environmental and psychological themes, meanings, and insights as they relate to the global climate crisis. To achieve this aim, the research team was influenced by grounded theory perspectives as a tool, but not as a prescription. Grounded theory includes a wide range of research traditions, assumptions, and epistemologies. Space does not allow for a detailed discussion of the differences. Still, all approaches involve the inductive construction of theory/insights/lessons through gathering and analysis of data, like media coverage (Glaser and Strauss, 1967). A grounded theory lens is often appropriate when little is known about a phenomenon. As such, the research team closely read the content, facts, and circumstances surrounding the COVID-19 pandemic with a particular emphasis on what physical (engineering) and human behavioral (psychological) insights, implications, lessons were emerging from the “data” as they relate to the global climate crisis. The key lessons identified included: the potential of reducing fossil fuel consumption and greenhouse gas emissions, the significance of responding late, a case for strong sustainability, the limits of rugged individualism, a (mis)trust in science, and the possibility of large-scale change. These insights are highly relevant in that they offer critical, novel insights into existing theory and research related to the climate crisis.

More broadly, the references included in this manuscript were classified according to the Mendeley codification. In total, 86 references were analyzed and classified as followed: book, book section, scientific article, magazine article, newspaper article, report, doctoral dissertation, web page, and working paper. Scientific articles accounted for the greater share of references, with almost 39%. Reports from international organizations such as the United Nations, the Intergovernmental Panel on Climate Change, the World Health Organization, the International Energy Agency, and others totaled nearly 18% of total references. Newspaper and magazine articles covered about 20% of the references. The use of books and book sections was used 13% and nearly 6% from agency’s websites. A small percentage of the information was taken from theses and working papers. It is important to remark that about 92% of the scientific articles cited were published in journals that had an impact factor. With respect to their impact factor, they ranged from 1.028 to 43 with a mean of 4.465.80%. About 14% of the cited references were included in the introduction section and just 2% were included in the methodology section and nearly 5% in the conclusion section. The newness of the content of the literature cited in this article is reflected in the fact the about 66% percent of the references were published between 2020 and 2017 and another 11% from 2013 to 2016. Just 16% of the references were published earlier than 2004.

A multivariate analysis between information sources and the publishing date showed that the most up-to-date sources were
evenly distributed between the different information sources. However, there was a moderate joint relative frequency of 0.1724 between scientific articles and the current references. The relationship between novel references and international reports also encompassed a moderate joint relative frequency of 0.1724. Moreover, there was a moderate relationship between novel references and Lesson 1 with a joint relative frequency of 0.2184 and another modest relationship between the newest references and Lesson 3. Lessons 1, 4, 6, 3, and 5 had the highest joint relative frequencies of cited sources. The construction of three bivariate scatter plots did not show evidence of significant patterns. The next section details these lessons.

3. COVID-19 pandemic lessons to facilitate future engagement in the global climate crisis

3.1. Lessons learned 1: the potentiality of reducing fossil fuel consumption and greenhouse gas emissions

Against the backdrop of lives lost, crippled businesses, and blighted economies, the sudden onset of COVID-19 is also illustrating the potential of limiting climate change and more sustainable lifestyles in line with the Paris Climate Agreement. That is, it merits acknowledgment that the COVID-19 pandemic has radically shifted energy demand around the world, matching many international mitigation pledges in terms of reducing the dependence on fossil fuels. For example, in a matter of weeks, the global oil demand dropped to the extent that the Organization of the Petroleum Exporting Countries (OPEC) has forecasted a historical decline of 6.8 million barrels per day in worldwide oil demand (OPEC, 2020). Similarly, COVID-19 lockdowns have decreased emissions of carbon dioxide (CO₂) and nitrogen dioxide (NO₂) in China (Myllyvirta, 2020), the European Union, and the United States of America (USA) (Freedman and Tierney, 2020); the three top greenhouse gas emitters in the world (Friedrich et al., 2017). Likewise, the National Centers for Environmental Information notes a broader range of environmental benefits, including cleaner air, reduced vehicle traffic, air travel, shipping manufacturing, and other activities (NOAA Research News, 2020). Collectively, it has been reported that no world event in the 20th century has produced more significant decreases in emissions (Le Quééré, 2020).

At least in the short-term, the COVID-19 pandemic inadvertently minimized emissions more than any individual action, policy, or intervention to date, aligning with the Climate Action Sustainable Development Goal targets of holding warming below 1.5 °C above preindustrial levels (UN, 2019b). Nevertheless, the strategies used to contain COVID-19 cannot remain in place and are not sustainable. Major financial markets across the globe have spiraled (Zhang et al., 2020). Traffic and travel have largely waned, where at one point, 80% of worldwide flights were canceled, resulting in an expected 314 billion USD loss of revenue in the aviation industry alone (Pearce, 2020). Growing numbers of companies and businesses have had to lay off employees and impose furloughs representing a 7% drop in global working hours (ILO, 2020). Economists predict a loss of at least 2.4% of the gross domestic product (GDP) for many countries (IMF, 2020). Even China recorded its first-ever economic contraction during the first three months of the pandemic (Cheng, 2020). Consequently, closing economies leaving millions of people unemployed are not sustainable solutions, with the poorest being the most vulnerable (Richter, 2020).

Despite this, the COVID-19 pandemic has illustrated that opportunities do exist to set structural changes in motion that align with climate-friendly pathways. At the broadest level, the COVID-19 pandemic has shown us that individual actions alone are futile; efforts will need to reflect large scale permanent structural changes in our economic, transport, and energy institutions. The shift in global demand for oil and coal is a good starting point to consider green energy solutions. For example, worldwide lockdowns led to less reliance on oil, where the U.S. price for oil dropped below zero for the first time in oil-market history (Tobben, 2020). Even though the oil price partially recovered days later, the industry is not expected to return to normal again (Van Lierop, 2020). Similarly, the global demand for coal decreased by 8% within the first month of the last year (IEA, 2020). The case of Great Britain’s electricity system is an encouraging coal-free example. During the pandemic, a low energy demand, because of lockdowns that stopped industry and services during the pandemic, combined with one of the sunniest spring’s in the country, helped generate sufficient wind and solar power, resulting in a full calendar month without coal-fired electricity (Ambrose, 2020). While there is much ambiguity regarding the global climate crisis in the post-COVID future, the pandemic has illustrated that even the coal and oil industries are penetrable systems. For this reason, there is potential to shift the status quo and drive policy toward renewable energy projects that create jobs, growth, and industries that reduce emissions (IREA, 2020).

3.2. Lessons learned 2: the significance of responding late

A central metric to understanding diseases and other factors relating to health is testing. Crucially then, to adequately monitor the incidence, distribution, and control of COVID-19 depends on how many people are tested and other governmental policy responses (Araz et al., 2020). South Korea, Italy, the U.K., and the USA all reported their first cases of COVID-19 infections in late January. Still, they went on to implement different policy responses and faced very different pandemics. South Korea employed wide-ranging government strategies, including testing, contact tracing, and isolating infected people within the first month of their first COVID-19 case, and brought the virus under control quickly. The U.K. and the USA did not, neglecting the high price of responding late (Thomas et al., 2020) (see Fig. 1). To date, the U.K., USA, Italy, Spain, and Brazil are among the countries with the highest incidence of COVID-19 related deaths (Johns Hopkins Coronavirus Resource Center, 2020). The USA was slow to accelerate testing and employ other strategies relative to other countries and is responsible for the largest proportion of COVID-19 cases in the world (Thomas et al., 2020). Furthermore, a recent study reported that 36,000 fewer people in the USA and 17,500 fewer people in New York City, the initial epicenter of the virus in the USA, would have died during the crisis if social distancing measures and other strategies had been implemented just one-week earlier (Hsiang et al., 2020). Collectively, the COVID-19 pandemic has demonstrated the astounding price of inaction in the context of an evolving crisis.

The cascading impacts experienced around the globe due to COVID-19 also underlie the significance of urgency related to the global climate change crisis. Like the COVID-19 pandemic, in the context of climate change, lives are lost or saved depending on the propensity to acknowledge the risk and act with urgency to contain context of climate change, lives are lost or saved depending on the propensity to acknowledge the risk and act with urgency to contain the extent that the last five years have been the warmest years on record (NOAA, 2019). If nothing decisively is done soon, it might be 2.8 °C warmer than preindustrial levels by the end of the century (Climate Action Tracker, 2020). Such changing conditions put our agriculture, health, and water supply at risk. The Intergovernmental Panel on Climate Change (IPCC) experts have warned about the existence of potentially harmful affectations to natural, ecological,
Fig. 1. Comparison of COVID-19 government response stringency index across three time periods: January 22, 2020, February 22, 2020, and March 14, 2020.
and human systems, including changes to migration and reproduction patterns of marine species, farming and fishing systems, rate of recurrence of heatwaves, droughts, floods, cyclones, and wildfires (IPCC, 2014).

But time and time again, there has been a collective failure to respond urgently to climate change, to agree on its risks, and to put forward massive permanent local and global mitigation efforts. Recent polls among U.S. Americans undergird these points, where the public’s level of concern has remained relatively stable or increased slightly according to reports by Gallup (Saad, 2019), the Yale Program on Climate Change Communication (Leiserowitz et al., 2018), and the Pew Research Center (Menasce-Horwitz et al., 2020). Furthermore, at the recent World Economic Forum, world leaders including Trump and Bolsonaro have largely ignored climate activists, including Greta Thunberg’s demands to action (Weise, 2019). The cost of climate change inaction is likely to result in incommensurable trauma higher than the current COVID-19 pandemic. With tangible evidence that human activity causes emissions, the risk and urgency to action cannot be understated. The COVID-19 pandemic should remind us of the fact that the world must tackle climate change with urgency.

3.3. Lessons learned 3: a case for strong sustainability

Since the advent of the industrial revolution, weak sustainability has been the dominant model to operationalize sustainability across different contexts (Daly, 1996). Weak sustainability was developed by neoclassical economists that asserted that human-made capital could substitute natural capital for economic growth (Ang and Van Passel, 2012). This model favors competitiveness and wealth creation of human-made capital. Many environmental economists have widely criticized this approach to sustainability because it fails to conserve natural resources and deteriorates the environment’s quality through unsustainable production and consumption (Pearce et al., 1990). Strong sustainability, in contrast, is a paradigm of sustainability that maintains that nature has a right to exist and that human-made capital can complement natural capital, but that they are not interchangeable. In particular, advocates of strong sustainability argue that certain functions that the environment performs cannot be duplicated by human-made capital. As such, strong sustainability advocates for operationalizing sustainability based on the preservation of natural resources over economic gains, and the commitment that natural capital must not be used as a bargaining tool to obtain any financial benefit (Costanza and Daly, 1992).

Although extensive debate exists, strong sustainability has been theorized as the ideal prescription for sustainability and human life but has mainly existed at the level of discourse and debate (Cardoso de Oliveira et al., 2018). While the COVID-19 pandemic has exposed many weaknesses, it has also, in some ways, made a case for a strong sustainability agenda. For example, people have developed new skills that have reduced the use of energy-intensive forms of transportation, like telecommuting, virtual meetings, and online education. Similarly, the COVID-19 pandemic has prompted a re-examination of existing globalized production systems that have been based on complex, environmentally unfriendly value chains. For example, the Japanese firm, Iris Ohyama started the domestic production of face masks, that prior to COVID, were manufactured in China. This comes on the heels of the Japanese government allocating 2 billion USD to help companies shift production home (Tajitsu et al., 2020). Many countries found that overseas sources of personal protective equipment, such as China, were quickly closed as worldwide demand skyrocketed. If a modest number of businesses and corporations find these “COVID-19 alternatives” advantageous from a cost, security, and convenience perspective, the anticipated environmental benefits may be quite substantial in the long term (Hernandez et al., 2020).

The current crisis highlights the unsustainability of our current system. How to handle the environmental tradeoffs associated with climate action is at the heart of debates between weak and strong sustainability advocates. The COVID-19 pandemic, and its tangible evidence that human activity causes emissions, has made evident the need to consider ways to implement an intermediate or strong sustainability paradigm into everyday practice that allows corporations to generate profits along their supply chain based on both ecological and economics science principles (Goodland and Daly, 1996). This starts with normalizing and incentivizing work from home, green transportation, and greener supply chain practices. These ideas of integrating precepts of strong sustainability are not novel, but have not been systematically operationalized in practice (Hediger, 1999). The COVID-19 pandemic indicates that it is possible and indeed necessary to operationalize strong sustainability into practice.

3.4. Lessons learned 4: the limits of rugged individualism

The coronavirus has cast a spotlight on the limits of rugged individualism. An extensive literature in social psychology defines individualism as comprising a set of related traits, including a view of the self as independent, self-reliant, and regulating behavior based on personal will and volition (Triandis, 1988). Likewise, rugged individualism has been described as an ideology, a lay theory, a set of normative beliefs, a framework for policies, and a set of prescriptions for organizing and governing society (Callero, 2017). Particularly, rugged individualism can be thought of as a way of understanding the world through the efforts, abilities, and decisions of the individual (Eppard et al., 2020). The individual is viewed as autonomous, possessing a high degree of control over the outcomes of one’s life. Those that possess determination and aptitude will generally do well and accomplish much in a lifetime, while those that do not exhibit such attributes suffer unsuccessful life outcomes and are to blame for such outcomes. While not everyone agrees with these beliefs, survey data demonstrate that U.S. Americans, especially Republicans, make individualistic explanations of behavior over non-individualistic ones (Menasce-Horwitz et al., 2020) (See Table 1). This is also known in the psychological literature as the fundamental attribution error (Ross, 1977).

COVID-19 has made visible the liabilities of a rugged individualist ideology. An ethos of rugged individualism means that supply chains, even those that serve our most basic needs, are built for private profit and competition, based on a myth of deservingness. That is, the resources to help combat COVID-19, such as ventilators and personal protective equipment (PPE), were treated like every other product in a consumerist culture, bought and sold on eBay or Amazon and available to those who have the “grit and perseverance,” leaving developing nations behind in the race for PPE because of their limited purchasing power in comparison to wealthier countries. Likewise, nations hung up on self-reliance, and rugged individualism means an investment in “just do it” discourses, whatever it might be. In the USA, for example, “just do it”

Table 1

| The different choices people make | Democrats | Republicans | All Adults |
|----------------------------------|----------|-------------|-----------|
| Some people work harder than others | 27       | 60          | 42        |
| Source: Pew Research Center. Survey of U.S. Adults conducted Sept 16–19, 2019. |
discourse manifests itself in many problematic policies and practices in which the COVID-19 pandemic exposed its fractures even more: a health-care system based on entitlement, a fragile, slow, and restrictive social safety net, and a general victim-blaming culture, especially toward ethnic minorities.

Furthermore, measures of social distancing, self-quarantining, and mask-wearing in the context of COVID-19 have necessitated a type of thinking that encompasses a communitarian ethos. This shift in thinking has been one that has not come easily, especially in the USA, as it runs counter to rugged individualism. The pandemic has been peppered with examples of U.S. Americans acting to ignore social distancing, self-quarantining, and mask-wearing. Similarly, people hoarded hand sanitizer, toilet paper, and disinfectant (Fisher, 2020). More recently, a vocal minority across several U.S. states protested for an end to stay-at-home restrictions, citing that stay at home-rules challenge basic principles of autonomy and individual liberty (DeBrabander, 2020). Recent data note that some of these U.S. states, including Arizona, Texas, and Florida, are now seeing sharp surges in new COVID-19 infections (Ruby et al., 2020). These examples indicate the uniquely U.S. American proclivity for fending for oneself and charting one’s path, despite the health risks.

The COVID-19 pandemic has the potential to (re)frame our future response to the climate crisis. Notably, the pandemic points to the fact that we must substantially redefine what it means to be an individual in relation to others. Furthermore, the pandemic advances the idea that we need to reject rugged individualism as a guiding framework concerning the natural world and to our daily consumptogenic behaviors (Hawkins, 2020). The pandemic also hints that, like COVID-19, there is no combatting climate change without social cohesion, radical collective thinking, and collective effort. New research suggests that people who have a broader sense of group identity, tend to be more likely to engage in pro-environmental behaviors (Cho et al., 2013). Survey data also suggest that more environmentally active groups were more collectivist in their value orientation than less environmentally active groups (Semenova, 2015). The conclusion that follows from the COVID-19 crisis is that cultural values of collective efficacy need to lie deep in the roots of future climate change conversations.

3.5. Lessons learned 5: (mis) trust in science and motivated reasoning

In recent years, there has been growing mistrust and skepticism of science. COVID-19 has made one thing clear: scientific matters. The most striking similarities between COVID-19 and climate change are the consequences of ignoring science and a corollary belief in the authority of one’s personal beliefs. Indeed, one of the most common psychological phenomena is motivated reasoning. Motivated reasoning refers to one’s goal in the process of forming a belief or opinion (Kunda, 1999). Individuals can either be motivated to pursue a directional goal – in which an evaluation expressed serves to reinforce one’s existing beliefs or identities - or an accuracy goal - in which one’s underlying motivation is to form and hold an accurate belief (Tabor and Lodge, 2006). When people engage in directional or goal-oriented motivated reasoning, people make adjustments to new information to align with presently held beliefs (Druckman et al., 2013). This occurs via several mechanisms, including through the confirmation bias, which refers to the tendency for people to search out, interpret, and remember information in ways that confirm preexisting beliefs (Oswald and Grosjean, 2004).

Theorists also suggest that people believe that their own beliefs are an authoritative source of knowledge and place much value on them (Williams and Lombrzo, 2013). Such beliefs are related to the Dunning-Kruger Effect, which is when people overestimate or think they have more knowledge in a given context than they actually do or correspondingly misconstrue how much they do not know (Dunning, 2011). The idea that personal beliefs have a distinct eminence is principal to how many people make sense of the world and is often reinforced by Western cultural norms (Trosset, 1998). Early work, for example, suggests that the assumption about the unique power of one’s beliefs is part of a common-sense epistemology, namely that one’s knowledge set is no more correct than any other (Carey and Smith, 1993). People who hold such an epistemology fail to realize the influence of their subjectivity in the establishment of their beliefs.

A good thing about science is that it allows people to understand the world. Science is a mechanism to understand how the world works. The COVID-19 pandemic has delivered an uncomfortable reminder of the value of trusting in science, and we must look toward science and scientists concerning the climate crisis. Considering the risk that motivated reasoning poses to effective scientific communication, the most effective strategy to communicate science in the context of the climate crisis may be to alter motivations, that is, inducing an accuracy goal. One promising study by Bolsen et al. (2014), has demonstrated the potential of inducing accuracy. In line with directional motivational reasoning, Democrats and Republicans were significantly more supportive for an Energy Act when endorsed by another in-group partisan member but were substantially less supportive of the same policy when endorsed by an out-group partisan member. However, motivated reasoning virtually disappeared when researchers impelled participants to form an accurate opinion. Hence, the next challenge drawn from this work is identifying how to alter processing goals related to climate change in the real world.

3.6. Lessons learned 6: the possibility of large-scale change

Nations’ responses to COVID-19 have varied considerably. However, the COVID-19 response has also demonstrated that the global community can make very large changes given a strong enough motivation. The systems that govern our behavior are complex and multifaceted, but the dramatic shift in behavior may be partially explained by our evolutionary history. For example, our brains are wired to respond to immediate here and now threats (Barrett, 2015), and the COVID-19 pandemic contained clear signals that emboldened our inbuilt sense of threat and response. Similarly, a central emotional response of the COVID-19 pandemic is fear. Like other animals, humans possess a set of defensive systems that trigger the body’s stress response for combating threats. Negative emotions, like fear, can make threats appear more imminent. Recent meta-analyses found that appealing to people’s fear leads to changes in behavior, especially if people feel capable of dealing with a particular threat (Mobbs et al., 2015). These results suggest that strong fear appeals produce the greatest behavior change, especially when people feel a sense of efficacy.

In some contexts, threat can hamper and impede behavior. Particularly, the brain is not well equipped at assigning emotional valence, like fear, to threats that are more abstract (Barrett, 2015). This means that we often do not respond to distant threats because temporality is often perceived to be vague and elusive (Liberman and Trope, 2008). Furthermore, people have difficulty comprehending abstract events that are outside our personal experience: epidemics occurring in other places, such as COVID-19 in China, appear to us as vague in our perceptual field. Recent functional neuroimaging studies bear out these ideas, where strangers and even the self in the future show less medial prefrontal cortex activity (e.g., the part of the brain associated with a range of social cognitive processes) than the self at present (D’Argenbeau et al., 2010). Consequently, when a threat is temporally, spatially, and
personally distant, people often incorrectly put aside the risk and, as a result, may fail to take the necessary precautions.

Unlike the COVID-19 pandemic, climate change is occurring over an extensive period of time, making it more difficult for people to perceive the changes as they occur (Weber, 2016). Climate change is also perceived as psychologically distant, meaning that people think climate change will harm people other than themselves in the unidentified future (Carmi and Kimhi, 2015). These attributes often impede human engagement in the climate crisis. For example, a significant line of debate in climate change dialogues has involved whether it is feasible to meet the international goal of limiting warming to 2°C. However, our brains are not incapable of dealing with the risk and urgency of global climate change. Particularly, as with COVID-19, it is possible to make climate change into one of those felt, morality inducing immediate threats that then mitigate actions. Some promising new research suggests that engaging people in episodic future thinking (EFT) may enable the perception of temporally distant events as psychologically close, thereby increasing the perceived risk associated with those events (Bo and Wolff, 2020). EFT refers to the capacity to imagine or simulate experiences that might occur in one’s future (Schacter et al., 2017). Across two experiments, engaging in EFT to pre-experience climate change-related risk events caused greater risk perception and pro-environmental behavior.

4. Conclusion

In late January, the COVID-19 pandemic was declared a Public Health Emergency of International Concern (PHEIC). As of November 2020, over 54 million cases and 1 million deaths have been reported globally, and the numbers continue to rise (FWE, 2020). The COVID-19 pandemic and the threat of climate change parallel one another in important ways, namely that they both underscore the fact that biodiversity’s vulnerabilities are human- ities vulnerabilities. Consequently, the pandemic holds keys insights for the climate crisis. Some of those insights include the potential of reducing fossil fuel consumption and greenhouse gas emissions, the significance of responding late, a case for strong sustainability, the limits of rugged individualism, a (mis)trust in science, and the possibility of large-scale change. These insights point to the fact that like the COVID-19 pandemic, we cannot take on the climate crisis by limiting that work to an individual’s actions alone. Instead, we need to create alternative systems informed by strong sustainability and collective efficacy framings and take on the problems of existing systems that are currently failing us. For example, people need to continue to attach their health to expectations of government action. People need to insist that their institutions of government listen to them (and to science), act on their behalf, and provide well-resourced, equitable green infrastructures in a timely manner. Second, like the COVID-19 pandemic, government officials and individual citizens need to continue to “bend or flatten the curve” of climate change-related incidence and mortality. Finally, citizens need to reject rugged individualism and related “pull oneself up by the bootstraps” ideologies and instead embrace the idea of collective responsibility.

Of particular importance to researchers and policymakers is a consideration of the actual applicability and transferability of these lessons to the climate crisis. In regard to the case for strong sustainability, the limits of rugged individualism, a (mis)trust in science, and the possibility of large-scale change. These insights point to the fact that like the COVID-19 pandemic, we cannot take on the climate crisis by limiting that work to an individual’s actions alone. Instead, we need to create alternative systems informed by strong sustainability and collective efficacy framings and take on the problems of existing systems that are currently failing us. For example, people need to continue to attach their health to expectations of government action. People need to insist that their institutions of government listen to them (and to science), act on their behalf, and provide well-resourced, equitable green infrastructures in a timely manner. Second, like the COVID-19 pandemic, government officials and individual citizens need to continue to “bend or flatten the curve” of climate change-related incidence and mortality. Finally, citizens need to reject rugged individualism and related “pull oneself up by the bootstraps” ideologies and instead embrace the idea of collective responsibility.

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5. Conclusion

In closing, we must pay attention to the global climate crisis as we map out our new COVID-19 world. In the words of the Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC), “our civilization is at a crossroads where it is possible to take the path toward a different future” (ECLAC, 2020). Therefore, it is vital for us, as a society, to seize onto the insights gleaned from the COVID-19 pandemic toward a different, better future.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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