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LESSONS FROM COVID-19 FOR CLIMATE CHANGE

Applying an interdisciplinary approach in developing strategies to motivate behavior change, tackle misinformation and address inequality in times of crises

White paper

Contents

Authors

Wolfgang Blau, Helen Bond, Elena Crete, Delaney Khung, Arend Kuester, Tamsine O'Riordan, Gerald Torres, and Jiaying Zhao

Acknowledgments

Dr. Ogechi Adeola, Judith F. Aidoo, Esq., Dr. Cristina Bicchieri, Dr. Altheria Caldera, Dr. Elizabeth Dzeng, Dr. Stephen Flood, Dr. Genevieve Guenther, Dr. Anthony Hatch, Dr. David Holmes, Dr. Stephan Lewandowsky, Dr. Gene D. Morse, Hilde Opoku, Dr. Hetan Shah, Dr. Koko Warner, Dr. Seth Wynes

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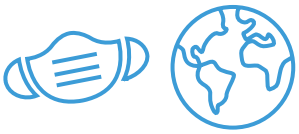
Introduction: Interdisciplinarity and Representation in Practice



The COVID-19 pandemic has shown us that the world is capable of acting with urgency to tackle crises on a global scale. It has demonstrated that the focused and coordinated efforts of global experts can lead to rapid and radical changes to address an emerging threat – for example in global mobility, ways of working, and medical advances. It also highlighted the crucial importance of tackling misinformation, demonstrated that individual behaviors can benefit society collectively, and shown how structural inequalities predetermine who is most affected and how - all issues that have clear parallels to the climate crisis.

In early 2021, Springer Nature considered how we could contribute to the conversations around the climate crises in the lead-up to the United Nations' climate negotiations at COP26. We reflected on climate action blockages and successes and found there were a number of interconnected themes that are relevant to both COVID-19 and climate change. These themes included the impact of inequality, the movement of people across borders, the need for global collaboration, and the role of misinformation and denial. We asked ourselves, what could we learn from the responses to the COVID-19 pandemic that could be applied to action on climate change?

These themes gradually formed the structure of a series of roundtables, but in discussing blockages we realized that these roundtables could not be formed of the usual groups of experts. We needed interdisciplinary and cross sectoral discussion. What if we could provide a meeting place for people who otherwise do not meet? Could we bring together academics, policy-facing professionals, practitioners, and activists from across the natural, social and applied sciences, and the humanities?

In 2020, Springer Nature established a partnership with the UN Sustainable Development Solutions Network (SDSN) aimed at exploring how to bridge the gap between research and policy in order to achieve the Sustainable Development Goals or SDGs. It was therefore a natural extension of this partnership to work together on this roundtable series.

We chose three topics which we felt could have the most impact: tackling misinformation, behavior change, and inequality. The roundtable on behavior and misinformation looked at how, just like the pandemic, we need behavioral interventions to reduce carbon emissions and promote climate adaptation. Participants were asked to consider behavior barriers and change for both groups and individuals, how to communicate climate science to the general public, and how to counter deeply rooted disbeliefs, motivated ignorance, skepticism, and inaction.

CHAIRS

Wolfgang Blau, Visiting Research Fellow at the Reuters Institute for the Study of Journalism, co-founder of the Oxford Climate Journalism Network, co-chair of the "Motivating Behavior Change and Addressing Misinformation" roundtable

Helen Bond, co-chair of SDSN USA and Associate Professor at Howard University, co-chair of the "Structural Inequalities - Gender, Race, and Poverty" roundtable

Gerald Torres, Professor of Environmental Justice and Law at Yale Law School, co-chair of the "Structural Inequalities - Gender, Race, and Poverty" roundtable

Jiaying Zhao, Associate Professor and Canada Research Chair at the University of British Columbia, co-chair of the "Motivating Behavior Change and Addressing Misinformation" roundtable

A commonality between the COVID-19 pandemic and the climate crisis is that most often, nations, communities, or individuals with the least resources or power are the most vulnerable to impact, and structural social inequalities greatly influence who is affected and how. The second roundtable explored the imbalances in the impact and response to crises, the way in which inequality can hinder solutions, and identified the lessons learned to create more equitable responses to future crises.

The resulting conversations were inspiring and sometimes difficult. However common lessons started to develop such as the power and impact of rapidly sharing information, how this can become politicized and weaponized with misinformation, how inequality affects the notion of "tools" and solutions, a third "crises of values", and questions of who gets to construct "knowledge" and how we use it.

The roundtables concluded in a final event hosted virtually alongside COP26, convened with the roundtable Chairs and keynote speakers Magdalena Skipper, Editor in Chief of Nature and Professor Jeffrey Sachs, President of SDSN. The event was rich and wide-ranging in discussion, focused on the learnings from the roundtables, found common ideas, and formed recommendations for policy makers.

Such vast global crises, such as pandemics and climate change, require new and more integrated approaches across the globe. Crises have consequences across all aspects of our lives, whether they affect our food security, supply chains, or public health. Thus in order to identify transformational solutions, we must incorporate perspectives across geographies, disciplines, and expertise. A global crisis cannot be tackled by each discipline of knowledge working in isolation.

Throughout this white paper, we ask roundtable participants to weigh-in on exactly that; what are some of the key advantages to an interdisciplinary approach? The real world isn't divided into siloed areas of knowledge, and we are attempting to look at research in the same way to deliver real-world solutions to our biggest challenges. It is only with greater collaboration across disciplines and among diverse stakeholders that we can achieve the breakthroughs necessary to address these crises.

Equally critical is getting this information into the hands of decision makers that have power to make real change happen at the policy-level. The *Learning from Crises* initiative is at once a lesson in utilizing joint convening power and a networking exercise to build cross-sector relationships and influence.

Overall, the white paper summarizes the discussions that took place during the roundtables, provides insights through direct quotes, and explores the lessons that arose. We have also provided the reader with a list of supporting research from which we encourage them to continue to ponder these emerging concepts. We are enormously grateful for the contributions of all the participants in the roundtables and especially to our Chairs. In establishing this forum, we have started collaborations that we hope will continue to generate new insights and solutions as time goes on and new crises emerge.

It is only with greater collaboration across disciplines and among diverse stakeholders that we can achieve the breakthroughs necessary to address these crises.

ROUNDTABLE PARTICIPANTS

Dr. Ogechi Adeola
Judith F. Aidoo, Esq.
Dr. Cristina Bicchieri
Dr. Altheria Caldera
Dr. Elizabeth Dzeng
Dr. Stephen Flood
Dr. Genevieve Guenther
Dr. Anthony Hatch
Dr. David Holmes
Dr. Stephan Lewandowsky
Dr. Gene D. Morse
Hilde Opoku
Dr. Hetan Shah
Dr. Koko Warner
Dr. Seth Wynes

Lessons learned from the COVID-19 pandemic

Both climate change and the pandemic showcase the interconnectability and globalization of our world and the grave consequences those connections can have.

The recommendations from our roundtable discussions will be summarized in full in a later publication. Below we provide a short summary of the context with which our three key topics were approached and a directory of resources that we pulled together from leading experts in these fields. It is the intention of the Chairs and participants that this work spur new perspectives on, research in, and interdisciplinary approaches to global crises.

Tackling misinformation

The COVID-19 pandemic has been accompanied by a massive wave of false and misleading information, breeding on the fertile ground of people's most basic anxieties and the rapidly changing news cycle. Misleading healthcare information, dangerous hoaxes, conspiracy theories, and consumer fraud all endanger public health. There are clear parallels to be drawn between the misinformation and disinformation spread about both COVID-19 and the climate crisis.

"The disinformation that we've seen both with the climate crisis and with the COVID-19 pandemic has been coordinated and disseminated in a systematic way," said Dr. Genevieve Guenther. "I would call it blatant disinformation. And this disinformation is inflecting all of our understanding and all of our behavior with respect to both the climate crisis and the COVID-19 pandemic."

Despite the significant challenges that this misinformation and disinformation has posed in both instances, the discussion participants felt that lessons learned from COVID-19, and indeed the pandemic itself, presented opportunities too.

"The opportunity is that the pandemic has disrupted the 'illusion'," continued Dr. Guenther. "We can no longer think that economic growth will insulate us from the vagaries of nature. Our systems overall have been entirely disrupted and our vulnerability has been exposed. And I think that is actually an opportunity, not only to raise awareness but to try to make some changes that would possibly leave us less vulnerable moving forward."

Emerging themes from the discussion

Countering misinformation within crises drives behavior change, develops support, shifts values, and increases pressure within the general public, governments, businesses, and increasingly diversified populations. The similarities and differences between the COVID-19 and climate crises create a unique opportunity to develop a solutions pathway. Both crises engender

negative global consequences but face considerable political polarization, starting with the definition of "truth". However, the misinformation campaigns per crisis are driven by different motives and players and face different degrees of urgency and media coverage. The roundtables acknowledged this understanding and pulled together existing literature to identify general solutions, solutions that target specific audiences, and narrative solutions.

Inoculating the public is a widely effective general solution to counter misinformation; methods include preemptively warning audiences and teaching argumentative tactics (Cook *et al*., 2018; Lewandowsky, 2021; Linden *et al*., 2017; Maertens *et al*., 2020; Zhao & Luo, 2021). Other solutions discussed include reframing the situation to stress adaptation advantages, scientific consensus, and solution-oriented communication that aligns with common values but avoids polarizing moral messages.

"Knowing does not replace doing", said Dr. Koko Warner, and solutions must target and be unique to audiences as their motives to spread misinformation and the outlets they use to finance, produce, and amplify those campaigns differ (Dunlap & Brulle, 2020; Nielsen *et al*., 2021; Treen *et al*., 2021). Connecting crisis actions to the personal values of these audiences effectively counters misinformation (Dunlap & Brulle, 2020; Lewandowsky, 2021; Sparkman *et al*., 2021; Zhao & Luo, 2021). Further, timely messages that target trend setters and use surprising sources – such as those whose values align with the target audience – are best (Benegal & Scruggs, 2018; Goldberg *et al*., 2021; Zhao & Luo, 2021).

There is a need for trusted messengers. Developing narratives and stories to share knowledge is a powerful persuasive tool that must balance scientific consensus and information. Narratives play an important role in the comprehension of risks and encouraging action (Lewandowsky, 2021; Linden *et al*., 2017). Experts suggest they are best developed with visuals, stories instead of numbers and graphs (Zhao & Luo, 2021).

Collective behavior change

Addressing almost any major crisis will involve persuading the public to make potentially significant changes to their day-to-day lives.

One successful aspect of the COVID-19 mitigation measure is the emergence of key performance indicators (KPIs) that were used to drive collective behavior change. We have to consider similar relatable KPIs for the climate. Additionally, "It's important to be aware of the difference in the temporality of these two threats, COVID-19 and climate," said Dr. Seth Wynes, a postdoctoral researcher at Concordia University. "So many of the behavioral changes that we could push or request for COVID-19 were only palatable because they were short term – and that doesn't really apply to climate."

Another challenge identified in the roundtable was the importance of focusing behavior change efforts on the *right* behaviors – in other words, those that

would have the greatest impact. “We're behind on the science when it comes to what we were focusing on for climate change communication,” continued Seth Wynes. “In my latest research, I identified high impact lifestyle choices that individuals can make and showed that governments and high school science textbooks were focusing on low impact behaviors instead”. It is difficult to tell people not to travel or to change their diets entirely, which are elements of lifestyle and culture, so coming up with the right and most implementable advice is key. The IPCC recently cited a report that attempted to quantify the emissions mitigation potential of various individual consumptive behaviors by analyzing 6,990 records. Basing climate solutions and recommendations for behavior change in sound and easily understood and communicated actions is essential.

Emerging themes from the discussion

Historically opposed behavior changes can actually gather more public support than previously thought in the face of crises (Howarth *et al*., 2020). However, the promotion and characterization of these changes differ by crisis. For example, the changes, risk perception, causes, and immediacy are clearly recognized in the COVID-19 crisis as opposed to the climate crisis. The latter requires permanent, long-term, and often large scale tactics (Geiger *et al*., 2021; Gemenne & Depoux, 2020; Howarth *et al*., 2020). However, the crises are similar in that solutions can be implemented locally but must scale globally to balance self-interest with the common good. The roundtable applied this to develop general solutions and a pathway to influence target audiences.

Generally, behavioral change necessitates timely international buy in. Delayed responses are costly – especially for minority groups (Geiger *et al*., 2021; Klenert *et al*., 2020). Stressing immediate, personal impacts, including public health impacts, effectively drives this urgency (Geiger *et al*., 2021; Gemenne & Depoux, 2020; Otto *et al*., n.d.; WHO, 2021). Establishing transparent and coordinated working groups between policy, science, and individual stakeholders across socioeconomic backgrounds is needed. This encourages a healthy balance between individual and regulatory behavior change (Klenert *et al*., 2020; Milner *et al*., 2021; Otto *et al*., n.d.). Other solutions include social signaling, emphasis on adaptation benefits such as potential economic boom cycles, and prioritizing changes using time horizons. Actions with high impact potential are priority (Milner *et al*., 2021; Nielsen *et al*., 2021; Wynes *et al*., 2020; Wynes & Nicholas, 2017).

These actions should be designed and implemented within different audiences. Targeting trend setters and early adopters helps mobilize behavior change across the entire population. Interventions should follow the social diffusion approach that engages these groups to increase the public support needed to back government and economic interventions. Engaging people with large footprints and people who are skeptical of climate change is also essential. Successful interventions need to address the different layers of denial, use value signaling, and positively frame solutions. Finally, interventions should address the underlying crises of values in both crises, since values are unique to communities and can be realigned to unite the state, civil society, and private sectors.

"The pandemic has disrupted the 'illusion'. We can no longer think that economic growth will insulate us from the vagaries of nature... And I think that is actually an opportunity, not only to raise awareness, but to try to make some changes that would possibly leave us less vulnerable moving forward."

Dr. Genevieve Guenther

Inequality

Crises do not unfold or take shape independent of the conditions from which they arise. For example, conflict between saving lives or livelihoods during the pandemic further entangled the deeply embedded structural inequalities in Germany, Italy, Ireland, Austria, German-speaking Switzerland, and the United Kingdom according to a study that was part of the 'Solidarity in times of Pandemics Research Consortium' (SolPan) (Fiske *et al*., 2022). What is coming into focus is that preexisting conditions amplified the impact of the virus, from the initial detection of 27 cases in Wuhan, China in December 2019, to a total of 6,062,536 deaths reported to the World Health Organization (WHO) as of March 18, 2022 (WHO, 2022, March 18). The United States (US) ranks number one in total cumulative cases (78,932,322) and deaths (960,935) (WHO, 2022, March 6)[1]. Who could have imagined that the richest country in the world with a GDP approximately 16% higher than other high income countries would lead the world in the number of deaths from a tiny virus (OECD 2020)[2]?

As we have already touched on, crises like the COVID-19 pandemic highlight and exacerbate existing inequalities. People from lower socioeconomic backgrounds and racial and ethnic minorities have been disproportionately impacted by COVID-19. We have also seen structural inequalities lead to uneven global vaccination rates. "Often it's those who are most vulnerable and with the least resources that are going to be impacted first and have the least capacity to adapt," said Dr. Stephen Flood. "This is a big topic when considering the impacts of the climate crisis, but has proven the case with COVID-19 too."

Gender inequality is another issue worsened by COVID-19 and climate change. Women disproportionately make up the caring professions such as teaching, nursing, and social care, putting them at greater risk. While at home, mothers have borne the brunt of the need for homeschooling and a lack of childcare support. "The impact of the disaster is not gender neutral," said Dr. Ogechi Adeola of Lagos Business School. "In Africa, COVID-19 has had health implications, of course, but more of a problem was the income shock caused by the lockdowns. And women and girls constitute the demographic most affected. This is also true of climate change, or any crisis, particularly in Africa."

African women represent more than 60% of the tourism labour force, and these sources of income are being threatened by climate change, as they have been with the pandemic. For example, there are three mountain ranges in Africa that are covered by glaciers: the Mount Kenya massif, the Rwenzori Mountains in Uganda, and Mount Kilimanjaro in Tanzania. The meltdown rates are higher than expected with respect to the global average, and complete deglaciation is expected by the 2040s, perhaps even earlier for Mount Kenya. Even though the glaciers are not sufficient to serve as major water sources for the people and wildlife, they are major income sources. The World Meteorological Organization (WMO) emphasized in an October 2021 UN Climate and Environment report that the mountain ranges were of great touristic and scientific importance. The future income source for women in the tourism sector working across these three mountain ranges is therefore called into question due to the effects of climate change.

"It's important to be aware of the difference in the temporality of these two threats, COVID-19 and climate. So many of the behavioral changes that we could push or request for COVID-19 were only palatable because they were short term."

Dr. Seth Wynes

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And, of course, these different strands of inequality do not exist in isolation.

"Which groups are most impacted?" questioned Dr. Altheria Caldera, who specializes in equity for students of color and students from low-income backgrounds. "We're talking about low-income mothers who don't have the resources to have tutors and nannies at home if their children get sick. Women who run the risk of losing their jobs because they need to stay home when a child has to be quarantined. It's those who are subject to multiple inequalities that are at the greatest risk in any crisis. So I think we need to think more about how to meet the needs of these populations."

"It's those who are subject to multiple inequalities that are the greatest risk in any crisis. So I think we need to think more about how to meet the needs of these populations."

Dr. Altheria Caldera

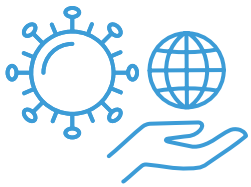
Emerging themes from the discussion

Crises impose many different shocks: health, income, mobility, etc. exacerbate already entrenched inequalities within countries and across the globe (Klenert *et al*., 2020; Maxmen, 2021). Groups that are least responsible for the crises are often impacted most due to limited adaptation capacity. Unique solutions and campaigns to aid these groups are necessary as the values and agendas differ across the global north and south states, and demographics. The roundtable established these disproportional impacts and presented solutions.

Systemic inequality is rooted in discrimination, low wages, limited labour protections, exploitation, mistrust in government, a financial limitation to take time off, and poor access to healthcare, housing, and education (Maxmen, 2021). This systemic inequality leaves racial and cultural minorities, such as Black, Indigenous, and Latinx communities, disproportionately impacted in crises (SDSN, 2020, 2021). Women are also impacted more. (Maxmen, 2021; Mlambo-Ngcuka, 2021). This is often because minority groups can be predominantly employed as low-income 'essential' workers, many of whom face higher vulnerability and death rates (Maxmen, 2021; Milner *et al*., 2021).

To combat this positive feedback loop of entrenched inequality, solutions that engage culture and communities – especially those that lack a voice – are important. These solutions include using human rights-based approaches for data collection and analysis, using interdisciplinary teams for solution creation, and implementing disaster preparedness and education. Trust in both science and the institutions we depend upon is critical for a collective unified response to a crisis. Dr. Helen Bond reminds us that, "Memories of the Tuskegee experiment of the 1930's in the United States and other breaches may spring to life during a disaster or crisis – just at a time when cohesion and clarity is most needed." It is important to keep in mind that solutions are innately unequal. There is also a need for approaches that are supported by science to be administered in culturally appropriate ways. As Professor Gerald Torres reminds us, "Culture eats strategic planning for lunch." This will require local knowledge to be applied to general strategic efforts. How that local knowledge is gathered and disseminated will be critical aspects of all planning and implementation efforts. Also, our ability to transition to green capitalism and to devote money towards green technologies, policies, and more should be analyzed, as capitalism is both a strong persuasive tool and the root of structural inequality.

Conclusion



The COVID-19 pandemic and climate change both present devastating global problems. Interventions need to be decisive and build on societal consensus to move forward together. Both crises face similar challenges in addressing institutional and societal barriers against effective action and should continue to be researched. This means taking the opportunity to learn from policy actions taken during the COVID-19 crisis to enhance efforts in fighting global climate change, as well as preparing humanity for future crises.

In drawing these lessons from the COVID-19 pandemic, it is vital to listen to a diverse range of voices and bring together the expertise of multiple disciplines. We hope that this white paper will serve as a basis on which SDSN and Springer Nature can continue to explore these emerging parallels, together with our roundtable participants and global networks. Academics, researchers, and sustainability experts around the world have worked arduously to better understand, map, and communicate a growing pool of knowledge that helps define the human experience and promote symbiosis between humanity and the natural world. As both the COVID-19 and climate change crises emphasize, it is important that a concerted effort be made to continuously seek balance between the increasingly complex systems of society and our planet. We hope our readers will question some of the points made here, seek their own pursuit of knowledge in the collection of resources we have provided below, and add their own queries to this growing school of interdisciplinary research. As responsible stewards of knowledge, it is our duty to find new ways to work together and identify novel and innovative solutions to the challenges before us and to those that lie ahead.

Contributors

As well as participating in our roundtable discussions, we would like to thank the following people for helping us prepare this white paper:

- **Dr. Ogechi Adeola** – Associate Professor of Marketing and the Head of Department of Operations, Marketing and Information Systems at the Lagos Business School, Pan-Atlantic University, Nigeria
- **Dr. Altheria Caldera** – Assistant Professor, School of Education, Howard University, US
- **Dr. Elizabeth Dzeng** - Associate Professor in Residence, University of California, San Francisco, Division of Hospital Medicine and Social and Behavioral Sciences
- **Dr. Stephen Flood** – postdoctoral researcher at Maynooth University, Ireland
- **Dr. Genevieve Guenther** – founding director of End Climate Silence and affiliate faculty at The New School, US
- **Dr. Anthony Hatch** – sociologist and Associate Professor and Chair of the Science in Society Program at Wesleyan University, US
- **Professor Stephan Lewandowsky** – Chair in Cognitive Psychology, University of Bristol, UK
- **Dr. Seth Wynes** – Postdoctoral fellow at the Department of Geography, Planning and Environment, Concordia University, Canada

Further reading

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