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Cognitive Bias in Risk Assessment**

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The Politics of Human-induced Climate Change Denial and Cognitive Bias in Risk Assessment*

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Abstract

This short essay aims to summarize issues related to the politics of human-induced climate change denial under the condition of high degree of uncertainty, which we notice in the United States, some European countries and even in Japan, from the viewpoint of cognitive psychology addressing cognitive bias problems. In addition, we scrutinize how the politics of climate change denial relates to the rightwing populism by focusing on the relation between cognitive bias and identity politics including belief-systems as well as campaigns operated by vested interest groups such as petroleum industry. In other words, the explanation that ideological aspects of right-wing populism are connected to climate change denial has significant overlap with the idea of cognitive bias, whereby inconvenient truths or facts that do not align with individual belief systems are rejected. This extreme form of cognitive bias also plays a role in the formation of conspiracy theories, which right-wing populism is often keen to embrace. Conspiracy theories cast environmentalists who advocate action on climate change as closet socialists plotting to turn the country Communist under the pretense of environmental protection. The natural environment of the homeland is of aesthetic, symbolic, and material value and thus worthy of being protected to the chauvinists, whereas the climate problem is a transnational phenomenon different in kind from the national landscape, and actors who attempt to solve the problem of climate change are, based on their cosmopolitan orientation, adversaries seeking to undermine their foundation of national sovereignty.

Key words---climate change denial, right-wing populism, cognitive bias, vested interests, belief systems, uncertainty

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1. Introduction

With the increased frequency of extreme weather events—including intense heatwaves reaching 40°C or more, heavy rains and floods said to be the worst in decades, and successive super-typhoons—the issue of human-induced climate change has moved to the forefront of our lives. Naturally, the degree of urgency with which people perceive the climate problem varies significantly depending on the country or region in which they live as well as their social attributes. For example, according to a report by the United Nations Development Programme (UNDP), more people in small island nations perceive climate change as a “global emergency” compared with other countries (UNDP 2021). While climate change is considered a global emergency by 64% of people worldwide, the average rises to 74% for small island nations, which is plausible considering that the citizens thereof are gradually losing the very land on which they live as sea levels rise due to global warming, endangering them of becoming climate refugees. Globally, people in North America and Europe have a greater sense of urgency than people in Africa; women appear to be more conscious of the issue than men in these regions. Furthermore, there is a correlation between level of education and awareness of climate change, in which education beyond compulsory levels correlates with higher awareness. It would seem, then, that awareness of the climate emergency is greater among those who are more directly impacted by its effects and those who are more in touch with scientific facts.

However, as symbolized by the Trump administration’s dramatic withdrawal from the Paris Agreement, it is also true that in North America and Europe there are certain groups of people who deny, or are skeptical of, climate change and maintain that human-induced climate change “does not exist.” In the case of the United States, conservative groups made up of Christian fundamentalists and vested interest groups such as the petroleum industry have mobilized think tanks along with partisan scientists and writers, continuing to criticize and attack those engaged in addressing climate change (green) as socialists (red) in disguise, while operating campaigns of climate change denial. Similarly, outside the United States, right-wing populists have supported climate change denial. This paper aims to present an answer and

interpretation to the perplexing question of why certain people and groups resolutely continue to deny the reality of climate change, although its scientific facts (findings of the Intergovernmental Panel on Climate Change [IPCC], etc.) are widely shared among scientists. Concurrently, the paper intends to serve as an interim examination of possibilities for surmounting these obstacles and overcoming the crisis through collaboration.

2. Belief Systems, Interests, Uncertainty, and Cognitive Bias

In addition to *This Changes Everything* by famous journalist Naomi Klein (Klein 2014), there has been much discussion and examination of the forces that seek to forward the agenda of human-induced climate change denial (Brulle 2014; Dunlap and McCright 2010, 2011; Dunlap and Jacques 2013; McCright and Dunlap 2010); however, as noted above, most of this work considers the problem of cognitive bias in the limited sense of short-term interests, by focusing, for instance, on campaigns by vested interest groups such as the petroleum industry facilitated through think tanks and other organizations. In the case of the United States, although it was not until the 2000s that a substantial number of books were published on human-induced climate change denial, in direct terms the conclusion of the Kyoto Protocol at the Third Session of the Conference of the Parties (COP3; Kyoto, 1997), which set reduction targets for the developed countries (Japan, 6%; The United States, 7%; and the European Union [EU], 8%; below 1990 levels for the five-year period of 2008–2012), had the perverse effect of actually emboldening forces opposed to global warming countermeasures. As efforts to raise awareness around the need to address global warming intensified in the mass media as well—the release of former Vice President Al Gore’s documentary *An Inconvenient Truth*, for example—a large number of books presenting a skeptical view of global warming were published in opposition to the climate change narrative. It should be noted that after the turn of the century an interactive process occurred in which the more human-induced climate change was seen as a problem, the more forces skeptical or critical of this narrative rose to the fore.

This is a typical manifestation of cognitive bias (belief bias), whereby arguments opposed to, or critical of, someone’s attitude serve only to further entrench their belief

system. “Confirmation bias” is applicable here: people who believe the hypothesis that human-induced global warming “does not exist” demonstrate a tendency to pay attention only to information that supports their view, while ignoring that which contradicts it. As Christian fundamentalists who take the Bible literally continue to this day to reject Darwin’s theory of evolution as wholly unacceptable, when discrepancies arise between rigid belief systems and scientific facts, people are inclined, to maintain their own psychological security, to defend their belief systems while rejecting inconvenient truths. In psychology, this phenomenon is called cognitive bias. “Confirmation bias” is a pervasive feature of human thought, even when rigid belief systems are not involved, in which people ignore evidence that does not match their own hypotheses.

However, when dealing with an emergency, failure to accurately perceive the situation can only lead to catastrophe. The COVID-19 pandemic that swept the world in 2020 is a case in point: in the early stages, political leaders in the United States and Brazil failed to recognize the danger posed by the virus, which was dismissed by some as “just a cold.” This was a typical instance of “normalcy bias,” making no attempt to recognize the impending danger, or “optimism bias,” making the misguided judgment that the negative event will not involve the person with the bias. Similarly, climate change denial is riddled with “normalcy bias”—ignoring the impending climate crisis—as well as “optimism bias”—the misguided view that the people involved will not experience the actual harm that results from climate change.

One condition under which these biases thrive is, as one might expect, a high degree of uncertainty about contentious future developments or events. That is, when the event is in the future, it is impossible to establish beyond all doubt how it will happen, and in an area as complex as the climate, the degree of uncertainty is higher still. Moreover, where the effects of human activities are cumulative and irreversible, it is difficult to predict the effects and outcomes statistically based on past data. In the case of post-normal scientific phenomena, where there are no past data to refer to and colossal damage can be expected, the need arises to consider precautionary measures to anticipate and avoid worst-case scenarios through deliberations that involve not only scientific experts but also ordinary citizens (Haag and Kaupenjohann 2001; Tosa 2015). Generally speaking, the EU has tended to follow this precautionary principle in its

assessment and management of risk— its response to the issue of genetically modified crops being one example—whereas the United States, faced with uncertainty, tends to underestimate risk, often under the sway of corporate interests. Similarly, with regard to climate change, it suffices to say that conservative forces, heavily influenced by the lobbying of vested interest groups such as the petroleum industry, are suffering from “optimism bias” in their denial of climate change and underestimation of risk.

It is often brought to our attention that the new realm of social media has made it easier to stoke division in society, as people become connected through affinity groups of like-minded individuals and build a stronger sense of solidarity in their collective identity, emotionally attacking opinions that diverge from their own. Another aspect here is that human-induced climate change denial groups are now formed more easily than before, as individuals seek to fulfill their desire for recognition through social media. Consequently, groups that deny human-induced climate change underestimate the risk in safeguarding their own interests and belief systems, effectively obstructing global warming countermeasures while criticizing and attacking “Greens,” whom they consider their adversary. Events such as the Trump-led United States withdrawal from the Paris Agreement, the global framework for climate action, are prime examples of this. Although the United States subsequently rejoined the Paris Agreement in February 2021, after Joe Biden took office, Trump and his followers continue to exert a significant influence on American society, and what America will look like in the future remains to be seen. It is evident, then, that the politics of human-induced climate change denial remains a great concern.

3. Cognitive Bias and Right-wing Populism in Human-induced Climate Change Denial

We have seen how human-induced climate change denial is a consequence of several cognitive biases; however, there has been little scrutiny of why such cognitive biases are a pervasive feature of right-wing populism. Although the close linkage between human-induced climate change denial and right-wing populism is often highlighted, there are relatively few studies into why these two phenomena happen to be connected. Despite this dearth of research, there have been several studies, including an article by

Lockwood, that directly address the association between right-wing populism and climate change skepticism and thus serve as a useful reference in this paper (Huber 2020; Jylhä 2020; Lockwood 2018). Lockwood considers two possible explanations, a structuralist one focusing on socioeconomic dynamics and an ideological one focusing on values, finding the latter more appropriate. The socioeconomic structuralist account contends that those “left behind” by globalization support right-wing populism due to socioeconomic grievances and take a hostile view of climate change policy as an agenda of technocrats and the liberal elite; however, Lockwood argues that this approach does not adequately reflect the various realities of the issue, including the fact that not all deniers of human-induced climate change are socioeconomically disadvantaged. He argues that more significant than socioeconomic factors are values and ideologies, such as right-wing populist authoritarianism and ethnocentric nationalism, which promote hostility toward the cosmopolitanism of those seeking to advance the climate change agenda and provoke a deep skepticism of climate change. This view also coincides with explanations for the rise of right-wing populism itself and closely reflects the hypothesis of Inglehart (Inglehart and Norris 2019), which emphasizes the value-oriented/ideological factor of cultural backlash over socioeconomic factors.

In a sense, the explanation that ideological aspects of right-wing populism are connected to climate change denial also has significant overlap with the idea of cognitive bias mentioned above, whereby inconvenient truths that do not align with individual belief systems are rejected. This extreme form of cognitive bias also plays a role in the formation of conspiracy theories, which right-wing populism is often keen to embrace. Conspiracy theories cast environmentalists who advocate action on climate change as closet socialists plotting to turn the country Communist under the pretense of environmental protection. Although this may not be entirely wrong (given that some within the climate movement, such as Naomi Klein, see capitalism as the root cause of climate change), to view mainstream liberal politicians who emphasize the need for action on climate change, such as Al Gore, as part of a conspiracy is certainly rather extreme. Outright denial of the existence of climate change for this reason evidently falls into the realm of paranoia. Nevertheless, the fact that through conspiracy theories post-truth politics is having such a profound impact on actual political processes is

indicative of the gravity of the situation we face. In any case, if politics is conducted, as it was during the Trump presidency, using methods aimed at fortifying a base of core supporters by accentuating the friend/foe, “us” and “them” dichotomy to sow division within society, like the issue of immigration, the issue of climate change—by virtue of the uncertainty it entails—is prone to overheat as groups in society move to safeguard and strengthen their belief systems and identities.

Indeed, as Lockwood and others have pointed out, the relationship between right-wing populism and climate change skepticism differs by country and region: for example, compared with Europe, right-wing populism in the United States is more skeptical and more combative against the notion of human-induced climate change. Right-wing populism is not always, in all of its manifestations, anti-conservationist—it may be combined with elements of patriotic environmental conservationism stemming from its strong ethnocentric nationalist orientation, and there are some right-wing parties that understand the need for solar power generation; thus, it exhibits certain contradictions in being partly conservationist yet skeptical of climate change as well. As demonstrated by this inconsistent view of environmental conservation rooted in inward-looking nationalism, to the nationalist, the natural environment of the homeland is of aesthetic, symbolic, and material value and thus worthy of being protected, whereas the climate problem is a transnational phenomenon different in kind from the national landscape, and actors who attempt to solve the problem of climate change are, based on their cosmopolitan orientation, adversaries seeking to undermine their foundation of national sovereignty.

4. In Place of Conclusion: Differences in Cognitive Bias and Risk Culture

We have seen how anti-elitism and inward-looking nationalism, values generally inherent in right-wing populist ideology, exhibit cognitive bias in underestimating the risk of human-induced climate change. Further, we have observed the trend in which the greater the pressure for action on climate change, the more vehemently the individuals in question defend their skeptical view of human-induced climate change at all costs to safeguard their belief systems and political identities arising therefrom. However, it should be noted that such cognitive biases do not manifest uniformly

across all countries and regions. For example, according to the UNDP report cited above, awareness of the climate change risk considerably varies among countries. In European countries such as Italy, France, and Germany, over 80% of people with post-secondary education believe climate change to be a “global emergency,” whereas in the United States, the proportion was much lower at 66% (UNDP 2021: 54). It is often highlighted that in the assessment of secondary risks associated with technology, such as genetically modified crops and nuclear power generation, Europe tends to be risk-averse overall, whereas the United States is more willing to take risks to secure capital interests (Vogel 2012); the same can be said with regard to climate change. Certainly, risk assessment considerably varies depending on the risk culture of the country in question: for example, countries within Europe, most notably Germany and France, have produced very different assessments of the risks of nuclear energy.

One reason why the United States has a strong tendency to underestimate risks associated with technology relative to Europe is the aggressive lobbying of industries with strong vested interests in technological development. The reason why climate change risk assessment in American society has been heavily swayed by actors such as the petroleum industry is, as mentioned repeatedly above, that certain features of the socioeconomic and power structures have created an abnormal risk culture within a common cognitive bias in risk assessment. More precisely, it is because, since the late 1990s, in conjunction with the polarization of values and society, which has progressed around the two-party system of Democrats and Republicans, attitudes toward climate change have also been polarized, with one camp calling for climate action and the other remaining skeptical, and a culture of underestimating risk, characterized by anti-reflexivity among the latter group, has gained a foothold within American society through the ideological warfare of industries and other interest groups (McCright and Dunlap 2010; McCright 2011). This abnormal risk culture is causing problems not only in the context of climate change but also across a wide range of phenomena, as seen in the idiosyncratic ways in which many Republican Party supporters responded to the COVID-19 pandemic that began in 2020 (e.g., their rejection of masks and vaccinations).

All this demonstrates that risk culture, shaped by socioeconomic and power structures, is at the same time contingent in character and evolves as risk assessments

are revised and adjusted as a result of experiences of major incidents (in the case of climate change, severe damage due to major hurricanes and heavy rainfall). If we assume that risk culture is a contingent matter, it ought to be possible for cognitive bias in risk assessment to also change, gradually, as information is shared through persistent communication, and people are confronted by the kind of critical incidents that foster new awareness. Most certainly, the task of rectifying cognitive bias in risk assessment will not be easy, not least because such biases are intertwined with identity politics and belief systems. However, if we could return to the essential fact that, as humans, we are often under the influence of cognitive bias, we ought also to be able to envisage the possibility of being liberated from the “politics of anti-reflexivity” in which cognitive bias is so deeply entrenched.

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