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Epistemic Harm, Social Consequences: A Reply to Torcello on Climate Change
Disinformation

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The temperatures registered in the summer of 2022 were among the highest on record in Europe, central and eastern China, and North America (ECMWF, ERA5 2022). The summer of 2022 is, however, unlikely to be an exceptional one. Similar heat waves will become increasingly frequent, and the world’s inhabitants will have no choice but to adapt, as best they can, to the new climatic conditions, with unpredictable outcomes. Perhaps needless to say, the effects of climate change are hardly limited to heat waves. The IPCC Sixth Assessment Report enumerates several impacts of climate change—some that we are already experiencing and some that we will be experiencing in the future. If no significant action is taken by the world’s political leaders to reduce greenhouse gas emissions, the future scenarios for both natural and human systems are dramatic (IPCC 2022).

Reducing emissions to mitigate climate change should arguably be a priority for many of the world’s political leaders, because it is precisely political leaders who decide on adherence to climate treaties and are ultimately responsible for their countries’ emission reductions. This is a significant problem because many present and recent leaders have lacked the requisite political will or motivation. Exemplary in this regard was the withdrawal from the Paris accords sought by former US President Trump, which took significant steps backwards from the diplomacy that, for more than 20 years, has been laboriously trying to engage all the countries of the world, and first and foremost the great powers, in the formidable but no longer postponable effort of climate change mitigation. In the face of a political class reluctant to act decisively on climate change, the role of individuals becomes even more important, both for the actions they can take on a personal level and as a source of pressure on their political leaders.

For these reasons, it is extremely important for individuals to be properly informed about climate change, its causes and its expected consequences. However, disinformation about climate change circulates abundantly, especially in the new media, and is responsible for many of the mistaken beliefs that are still far too common. There are individuals who believe that climate change is, on the whole, not a negative phenomenon, others who are convinced that the climate is actually cooling, and yet others who consider the existence of climate change to be subject to scholarly debate (see Cook’s skepticalscience.com for a list of the most common false beliefs about climate change, along with their sources).

The Faces of Disinformation

Disinformation can have many faces, from false or inaccurate news spread by individuals in their personal capacities to outright campaigns supported by corporate financing. The resulting damage is quite clear. Disinformation contributes to the spread of false or inaccurate beliefs about climate change, and those holding such beliefs are unlikely to be committed to reducing emissions. Erroneous beliefs about climate change also shape electoral choices by, for example, deterring voters from placing high value on campaign promises of climate change mitigation. It is therefore appropriate to describe climate change disinformation “as a serious social harm” (Torcello 2022, 35). In his essay “Climate Change Disinformation and Culpability: A Sympathetic Reply to Pongiglione and Martini”, Torcello specifically focuses on disinformation that is funded and spread by corporations—that is,

disinformation that is fabricated with the aim of polluting the public debate and creating confusion and uncertainty. Such disinformation campaigns, Torcello writes, are a “form of epistemic sabotage [that] places vulnerable communities and future generations in harm’s way” (30).

The effects of climate change are indeed unevenly distributed. While industrialised and developing countries are all affected by climate change, certain areas of the world are experiencing far more dramatic consequences than others. Some countries are particularly vulnerable because of their geographical position, which makes them especially subject to events such as droughts, heat waves, cyclones, storms or floods. Other countries’ increased vulnerability is due instead to poor resilience, caused by political instability and poverty. Certainly, the most severe consequences of climate change will have the greatest impact on the most vulnerable countries or regions and will be more pronounced in the medium to long term, causing grave harm to future generations (IPCC 2022). For this reason, Torcello suggests that corporately financed disinformation ought to be recognised as criminally negligent, being in effect “a crime against humanity” (29–30).

However, there is another aspect of scientific disinformation about climate change that is worth addressing. Disinformation undoubtedly generates harm in the sense of an inadequate response to climate change, which, as shown, puts vulnerable communities at risk; we could call this a global, intertemporal harm. However, it is worth emphasising that climate change disinformation also causes significant harm to the very individuals it reaches—a local and immediate harm. This harm consists in a worsening of people’s doxastic conduct and their estrangement from the truth; in their developing distrust in institutions and becoming sceptical of authorities; and ultimately in the obstruction of their deliberative processes. Some of the consequences of their poor deliberation regarding climate issues, in turn, fall directly on these individuals themselves.

It is crucial to observe that this epistemic harm is not produced evenly across a society. Some individuals are more susceptible to climate disinformation than others, and disinformation is designed specifically to target these individuals. In most cases, it will be argued, the targeted individuals have lower levels of education and occupy socioeconomically disadvantaged positions, and their vulnerability is significantly increased after the disinformation reaches them. Climate change disinformation, we will therefore suggest, not only harms people globally in the present and future but also exacerbates pre-existing social inequalities, making the weakest segment of the population even weaker.

Consequences Beyond the Global Level

When we consider the effects of climate change disinformation, we immediately think of its global consequences: the failure of individuals to take mitigation action, their failure to support policymakers who promote climate agreement, and consequently insufficient action to mitigate the phenomenon itself. We tend to give less consideration to the fallout of disinformation on its direct victims.

There is ample empirical evidence on the negative effects of disinformation on people’s doxastic attitudes. Mere contact with false or inaccurate information worsens people’s epistemic performance. Inaccurate or even blatantly false information can be encoded into

their memory and become the basis for evaluation on which they rely during further belief formation, thus generating confusion and ultimately distorting their judgment. Interestingly, this process occurs even when they are able to acknowledge the falsity of the information thanks to previously acquired knowledge (Rapp 2016; similar conclusions were reached by Pantazi et al. 2018). Thus, all individuals reached by misinformation suffer damage in their capacity as epistemic agents.

The damage to those who are deceived by disinformation is clearly greater. Individuals who are deceived by disinformation are first and foremost turned away from the truth. This is, in principle, a harm in its own right: truth is in fact an epistemic good (Pritchard 2021). Therefore, those who are intentionally distanced from it suffer an epistemic harm, which may take the shape of either the acquisition of a false belief or failure to take the opportunity to acquire a true belief (as argued by Goldberg 2021, p. 266).

As Torcello highlights, believing disinformation also creates a kind of “cognitive pattern”. If I am willing to accept explanations of phenomena that are not based on evidence but instead rest on conspiracy thinking, nothing prevents this way of interpreting reality from spreading to other domains as well. Those who believe that climate change is a conspiracy engineered by the renewable energy lobby will certainly be more inclined to adopt conspiracy reasoning in other domains as well, such as the Covid-19 pandemic or the 2020 US elections (31).

Putting faith in disinformation has other consequences as well. As recently noted by Baurmann and Cohnitz, opinion formation includes both first-order opinions regarding the issue at hand (in this case, the existence of anthropogenic climate change) and second-order opinions about the trustworthiness of the people who speak out on the issue (Baurmann and Cohnitz 2021, 345). Thus, not only do individuals who believe disinformation acquire false beliefs about climate change, but they also progressively change their attitudes toward those who openly disagree with these false beliefs—including, for instance, experts and research institutions. Furthermore, sources that challenge the mainstream view then tend over time to become their new epistemic authorities and to be trusted in other contexts as well (Baurmann and Cohnitz 2021, 345–346; see also Jaster and Lanius 2021, 38).

The result is that distrust of information conveyed by institutions, at first restricted to a specific sphere, runs rampant, rendering it possible for the individual to take on even more expansive conspiracy views and eventually embrace an attitude of scepticism and distrust toward institutions *tout court*. Importantly, the moment one puts faith in misinformation, one thereby changes one’s attitude toward those in one’s social circle who trust the official information instead. Scepticism is therefore extended toward those of one’s friends or acquaintances who do not share one’s views. The end result is to foreclose access to knowledge generated within society (Baurmann and Cohnitz 2021, 346).

Another relevant implication of the epistemic harm done to the single individual by disinformation is its leading to uninformed decisions and obstruction of democratic deliberation. In the words of Jaster and Lanius, “[R]eports lacking truth and truthfulness undermine societies’ capability for deliberation and may thus foster illegitimate collective decisions. [...] Only sufficiently informed people are able to deliberate in a way that

legitimizes the outcomes of deliberative processes” (Jaster and Lanius 2021, 39). Uninformed decisions in the context of climate policies produce significant consequences, and not only on the global level. Although we know that greenhouse gas emissions accumulate in the atmosphere and cause the global phenomenon of climate change over a fairly long period of time, the same emissions also have localised and short-term effects. Indeed, the burning of fossil fuels negatively affects local air quality, which in turn has consequences for the health of people living where the emissions are produced. Disinformation that minimises or denies the dangerousness of such emissions thus leads people to underestimate or ignore the effects of fossil fuel combustion on their own health and to make important decisions, such as specific votes in local or national elections or opposition to norms that would help reduce emissions, without possessing the necessary information to subject these decisions to proper deliberation.

The Targets of Disinformation

One more point worth emphasising is that disinformation is not equally effective throughout a society. Obviously enough, it aims to mislead non-experts. That is, corporations that manufacture disinformation, aiming “to undermine the general public’s ability to make informed decisions” (Torcello 2022, 29), have specific targets for their campaigns. Their target audiences are non-expert individuals. Who, specifically, are these non-experts? Establishing who can be defined as an expert is a complex question and the subject of extensive debate among scholars (see, for example, Goldman 2018, Lackey 2018, and Croce 2019, for three different views on the issue), and even providing a definition of a *non*-expert is not straightforward. For the purposes of this paper, we can take a simpler route and identify the targets of disinformation by exclusion. That is, we can identify the groups of people who are *least* likely to be convinced by pseudoscientific information about climate change—those who have the greatest defences, so to speak, against disinformation. The remaining population may be considered vulnerable to disinformation.

The least vulnerable to programs of climate change disinformation are those who are familiar with climate science, biology, physics, and atmospheric chemistry, together with those who work on climate change and are familiar with its dynamics: economists, social scientists, and psychologists who study environmental issues. In general, individuals with a university-level scientific background are not particularly vulnerable to scientific misinformation about climate change. In fact, the same could be said for all who work in academia, even in completely different disciplinary fields. They may not know much about climate science, but they know how to recognise a scientific text and distinguish it from a pseudoscientific one. They know, that is, what details allow one to assess the quality of a text, from the publication venue to the authors’ credentials to the sources cited. Such an assessment is clearly beyond the reach of those without higher education.

This reasoning leads to the claim that those who are more vulnerable to disinformation are those with lower levels of education, who are ignorant of both the content of climate science and the quality and reliability requirements of scientific research and are thus less likely to be able to distinguish science from pseudoscience. As suggested by McIntyre, people who are ignorant, or confused, are easier to deceive with misinformation (McIntyre 2021, 197). Now, people with lower levels of education usually also occupy lower socioeconomic positions (Eurostat 2021). From this, we can draw a conclusion that, though perhaps rough, broadly

answers to the reality: misinformation tends to affect people with lower levels of education and income, a group that represents already vulnerable members of a society.

Belonging to a socioeconomically weak group has some epistemic implications. People belonging to a disadvantaged group, as observed by Tanesini, are more likely to develop certain epistemic postures and attitudes that affect their very relationship to information. While people in privileged positions tend to be confident (at times to the point of arrogance), people in lower positions are more prone to develop attitudes such as self-abasement and servility: they feel inferior and consider others more worthy of epistemic credit. According to Tanesini, “the individual who is servile is quick to accept the views of others, to take them to be his superiors” (Tanesini 2016, 523; see also Tanesini 2021, 96–97 and Moody-Adams 1995, 278–280, for a more precise description of the link between epistemic attitudes and socioeconomic status. In addition, Medina 2013 tends to connect social status to specific epistemic vices and virtues). These individuals are particularly subject to being influenced by their social context. The problem is that their social context is precisely where disinformation enjoys a greater following.

It is people in weaker socioeconomic positions who tend to believe conspiracy theories more readily and who are more likely to develop a sense of distrust in institutions, authorities and the mainstream (Freeman and Bentall 2017; Greenburgh and Raihani 2022). It is thus the more vulnerable who are especially likely to lend credence to climate change disinformation when confronted with it—with messaging that in fact constitutes a form of science denialism and therefore has some conspiratorial overtones (Freeman and Bentall 2017). This means that disinformation tends to be far more common among the disadvantaged than among those in higher social positions. And this is a problem, given the influence of one’s social context on the process of belief formation: when a number of individuals in a social context share a belief, others in the same group are more easily led to believe it as well. Furthermore, not only are beliefs shared among social peers, but so are attitudes. Those who belong to social contexts in which distrust of institutions is widespread more easily tend to become sceptical, doubtful and distrustful of official experts. They are influenced by the attitudes they observe in their social group.

A final observation is in place here. Baurmann and Cohnitz have observed that our society has a rather efficient system to prepare and educate highly specialised individuals who become trustworthy experts. However, to recognise the trustworthiness of these experts, “one needs to happen to stand in a number of stable enough personal trust relationships of the right kind” (Baurmann and Cohnitz 2021, 344). This means that those who happen to lack relationships of this kind are also precluded from the possibility of recognising trustworthy experts.

Conclusions

We normally tend to consider the *global* effects of climate change misinformation, effects that are undoubtedly significant. Responding to this extraordinary challenge requires decisive and shared action on the part of the world’s major powers. However, this action can be achieved only with the support of individuals, who are called to vote for the political forces

whose duty it is to find agreement. This is why disinformation is so dangerous: by confusing citizens' ideas, it leads them not to give this emergency its due weight in their choice of political representatives.

With this short article, we have offered a reminder that the effects of misinformation about climate change are not only global. What has emerged from this brief reflection is that disinformation also has consequences in terms of social justice. It is, as it turns out, directed at specific groups of people, and it takes root more easily in groups that are already disadvantaged. The epistemic harm it causes therefore affects the most vulnerable, making their position even weaker. This is all the more reason to consider disinformation a dangerous phenomenon and to emphasise, along with Torcello, the need to insist on the legal culpability of those who deliberately spread it.

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