

## OPINION

# Climate change sociology: Past contributions and future research needs

Debra J. Davidson  \*

Department of Resource Economics and Environmental Sociology, University of Alberta, Edmonton, Canada

\* [debra.davidson@ualberta.ca](mailto:debra.davidson@ualberta.ca)

That the causes and consequences of climate change are deeply entangled with socioeconomic systems is no longer a provocative statement. Contributions by social scientists have grown impressively in both volume and influence recently. Sociology has played a particularly prominent role in the field, and several excellent recent reviews far more comprehensive than what I will offer here are available [1–6]. In what follows, I highlight notable findings offered by sociologists who focus on climate change, followed by key priorities in future research.

Notable sociological contributions, representing findings with strong agreement across several studies, fall into in three main areas, including social drivers; social impacts; and the power and politics associated with responses to climate change.

The research record articulating multiple social factors and their relative weight as **drivers of climate change** represent what is perhaps the strongest and most extensive set of sociological contributions to climate science and policy. Especially of note is the degree to which sociological research contradicts persistent claims in political discourse, including, first, the fact that population size has at most an indirect association with emissions, in fact economic growth is far more consequential. Second, individual consumption practices and climate action are shaped by multiple socio-cultural factors that belie simplistic, rationalist, ‘knowledge deficit’ models of human behaviour—information is necessary but by no means sufficient to motivate climate concern and action.

The prevailing finding emerging from research on the **social impacts of climate change** is the inequitable nature of those impacts. Because those peoples who are the most vulnerable—notably many global south regions, and BIPOC, Indigenous, and non-cismales in all regions—are also the least accountable for the emissions that produced the risks in the first place, the inequitable distribution of climate risks also represents a grievous injustice.

Third, sociologists have made resoundingly clear that **responding to climate change** has relatively less to do with technology and economics, where attention is so often directed, and far more to do with power and politics. From the local to the international scale, sociologists have provided evidence of the strong arm of power relations and their influence over political processes in the climate sphere. Most notable has been irrefutable evidence provided of the orchestration of climate denial through the deployment of disinformation by representatives and allies of the fossil fuel industry, effectively postponing proactive policy responses in many western polities for decades. Also notable are studies evidencing the role of media institutions in attenuating the perceived risk of climate change among publics. Sociologists attribute this institutional influence at least in part to the deployment of discourses—human exceptionalism, neoliberalism and technological optimism being particularly consequential—that prescribe a narrow ontological lens through which problem and solution spaces are created. Other studies



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have catalogued the factors facilitating the escalation in social movement engagement, and the successes of those endeavours.

As noteworthy as this body of scholarship is, the list of questions to which sociology could and should contribute more is far longer, including areas of contention and disagreement in current scholarship, and emergent themes associated with our rapidly shifting socio-ecological dynamics. In the realm of social drivers of emissions, there remains a need to disentangle the specific role of economic structures that operate at differing levels, including neoliberalism, globalization, industrialization, and capitalism, each of which has very different ramifications for policy response. In addition, the roles that both colonialism and patriarchy have played and continue to play in driving climate and environmental disruption have entered into academic climate dialogues, and warrant more attention.

One of the emerging impacts that warrants further attention entails interlinkages between climate change and labour—including working conditions in highly exposed regions and occupations, as well as prospects for, and prospective effects of, occupational shifts prompted by climate policies (e.g. de-growth and Just Transition initiatives). As the impacts of climate change evolve rapidly from the projected to the realized, the multiple consequences for families, communities and societies are coming into sharp focus, opening up a plethora of urgent questions for sociology. The most glaring of consequences are those associated with extreme events—floods, fires, heat waves and drought—unfolding at a shocking pace across the global map in recent years. Somewhat less vivid but no less consequential are rapid declines in essential needs—food, energy, and water—that have begun to unfold anew in some places (e.g. the US southwest), and intensify in regions already defined by scarcity (e.g. east Africa). Enormous disruptions to normalcy and survival associated with the loss of livelihoods, of homes and entire communities, and subsequently large movements of people, bespeak the need for a sociology of loss [7]. Material impacts include not solely the cost of disaster recovery but also rapid devaluation of real estate, and stranded assets associated with energy transition. All of these disruptions raise the spectre of failure in our risk and disaster management institutions, what Esping-Andersen [8:5] refers to as a “disjuncture between the existing institutional configuration and exogenous change,” forcing a political confrontation with current structures of political and economic power. Sociologists have also begun to broaden our account of climate impacts to include the numerous non-material consequences associated with the loss of home and community, and coming to terms with climate futures.

Research needs are equally substantial in the realm of climate change responses. Notable here are growing calls for greater understanding of how emotions shape individual and collective responses to climate change, including climate anxiety, particularly among younger generations. As well, the intersections between climate politics and the escalation of far-right, populist and authoritarian movements; competition for political and public attention posed by contingent crises like the coronavirus pandemic and associated economic decline, as well as Russia’s invasion of Ukraine, all loom large on the sociology of climate change agenda.

The unique contribution of sociology to the study of climate change rests with its centering of mechanisms of social change within a conceptual landscape that encompasses individual, social interactional, and socio-structural levels. Yet, despite its record of achievements, and its potential to address the emerging research questions described here, sociology remains in the back seat in climate science and policy. The comparatively lower funding levels received by the social sciences and humanities have already been noted elsewhere. But some self-reflection about this underperformance within the discipline is warranted as well. Most notably, the disciplinary core has yet to fully embrace climate change as a worthy subject [3, 5]. Sociologists committed to the study of climate change face difficulties receiving career rewards from their home discipline, and resort to publication outside of major sociology journals [4]. Alas, the

Human Exemptionalism Paradigm still prevails. Sociology needs to embrace the interdisciplinarity that can allow for application of socio-ecological systems approaches [2]. Other disciplinary shifts are also called for, including methodological experiments in forecasting, rather than solely explaining, change would enhance sociology's role [e.g. 9], as would expanding representation of climate sociology scholarship emanating from researchers in the Global South.

## References

1. Falzon D., Roberts J.T. and Brulle R.J. Sociology and climate change: A review and research agenda. In: Caniglia BS, Jorgensen A, Malin SA, Peek L, Pellow DN, Huang X. editors. *Handbook of Environmental Sociology*. Springer; 2021, pp. 189–217.
2. Dietz T, Shwom RL, Whitley CT. Climate change and society. *Annual Review of Sociology* 2020; 46: 135–158.
3. Klinenberg E, Araos M, Koslov L. Sociology and the climate crisis. *Annual Review of Sociology* 2020; 46: 649–669.
4. Koehrsen J, Dickel S, Pfister T, Rödder S, Böschens S, Wendt B, et al. Climate change in sociology: Still silent or resonating? *Current Sociology Review* 2020; 68(6): 738–760. <https://doi.org/10.1177/0011392120902223>
5. Norgaard KM. The sociological imagination in a time of change. *Global and Planetary Change* 2018; 163: 171–176. <https://doi.org/10.1016/j.gloplacha.2017.09.018>
6. Dunlap RE, Brulle RJ, editors. *Climate Change and Society: Sociological Perspectives*. Oxford University Press; 2015.
7. Elliott R. The sociology of climate change as a sociology of loss. *European Journal of Sociology* 2018; 59(3): 301–337.
8. Esping-Andersen G. Social Foundations of Postindustrial Economies. New York, Oxford University Press; 1999.
9. Urry J. The 'system' of automobility. *Theory, Culture and Society* 2004; 21(4/5): 25–39.