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*Commentary*

### **Towards an Integrative Discourse on Climate Change**

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#### **Abstract**

Harriet Bulkeley's article raises some of the persistent challenges of integrating social science perspectives into climate change research. In this commentary, we consider a broader and deeper approach to integration that introduces multiple entry points for engaging with climate change research, education, and training. We argue that an integrative discourse is already emerging, and discuss the potential role and implications for human geography.

#### **Keywords**

climate change, integrative discourse, education

What role can human geographers play in understanding and responding to climate change? Climate change has long been of interest to "nature-society" geographers who investigate human-environment interactions. Yet, as Harriet Bulkeley points out, it has sometimes been difficult to attract researchers working within others areas of human geography, such as political, economic, or cultural geography, each of which has the potential to provide novel insights into the social dimensions of climate change. This problem is not geography's alone, and in many ways, it mirrors a perception within many realms of social science that environmental research topics are not relevant, interesting or appropriate topics for study. Bulkeley rightly attributes this disregard to an obsession with labelling some issues as "environmental" and others as "cultural", "social", or "political".

Reflecting on the limited engagement of critical geographers and other social scientists with global environmental challenges, Bulkeley is especially interested in the implications for politics. Is the limited interest in climate change research among human geographers and social scientists merely a reaction to the dominant biophysical discourse that has been championed within Earth Systems science and the global change research community? Or is something else going on here? While the

need for inter- and transdisciplinary research and education has long been advocated within the global change research community, we argue that a broader and deeper approach to integration is becoming increasingly visible. We suggest that this emerging, integrative discourse can provide new entry points for engagement by human geographers and other social scientists with the issue of climate change.

### **A broader and deeper approach to integration**

Bulkeley's article explores some of the difficulties of integrating science-based understandings of climate change with those based on social science analyses. She draws attention to how social science "has been positioned within the latest wave of calls for a renewed, integrated approach to understanding matters of global environmental change." While the article emphasizes the diversity of voices and perspectives within the social sciences, it paradoxically adopts a rather narrow view of integrative research that is more consistent with the biophysical discourse on climate change. Within that discourse, successful integration of social science is often interpreted as the inclusion of social, demographic, and economic data in large-scale integrated modeling efforts or systems analyses. Such integration frequently entails linking these modeling efforts with social science approaches that are aligned with scientific positivism, such as rational-choice models of decision-making, game theory, and probability-based risk assessment. Integration may also include the expectation that social science researchers will play supporting roles in translating and communicating scientific findings to policymakers or members of the public. Given these implicit and explicit assumptions about the purpose and value of social sciences within the biophysical discourse, it is not surprising that few critical social scientists are engaged with science-based climate change research.

The lack of connection between the critical social discourse on climate change and the biophysical discourse that Bulkeley highlights is not a new phenomenon, but indeed has long been recognized within the global change literature. For example, a 2001 article by David Demeritt on "The Construction of Global Warming and the Politics of Science" noted the "political brittleness" of a scientific framing of climate change and described the ways in which it prioritizes techno-managerial responses (Demeritt 2001b). His call for a reflexive politics of climate change was met with skepticism by climate scientist Stephen Schneider (2001). Schneider argued that for such a piece to connect with most scientists it would have to, among other things, 1) simplify the impenetrable jargon; 2) engage through scientific journals; 3) back assertions with empirical examples; and 4) avoid creating caricatures or "straw men" that misrepresent the way that science is done. In response, Demeritt, a human geographer, reiterated his critique of the rather deterministic ways that modeling results are presented to the public, and underscored his concern with the prioritization of modeling studies relative to "other, more explicitly political ways of formulating the problem" (Demeritt 2001a). Such debates have persisted since then, and have been prominent across a range of journals, including those oriented toward a science-based audience, such as *Nature Climate Change* (e.g., Castree et al. 2014; Geels, Berkhout, and van Vuuren 2016), as well as those directed at scholars within the social sciences and humanities such as *Osiris* (e.g., Hulme 2011). Indeed, many of these issues were raised in the *Dialogues in Human Geography* interchange that was spearheaded by Noel Castree in 2015 (Castree 2015).

The struggle to recognize and incorporate a wider range of social sciences within global change research also highlights the existence of distinct discourses on climate change, each of which relies on different vocabularies, approaches to science, understandings of causality, interpretations of values, and attention to subjectivity. These are not limited to biophysical or critical social discourses, but also include dismissive discourses that appeal to those with little interest in engaging with climate change, or who may actively disavow climate change. These multiple discourses draw attention not only to a diversity of understandings of the issue of climate change, but also to multiple

perspectives on reality, diverse ways of knowing, and different claims to validity. We describe this awareness and incorporation of multiple perspectives on climate change in our forthcoming textbook on *Climate and Society* as an “integrative discourse” (Leichenko and O’Brien 2019). This integrative discourse views climate change as interconnected with other processes of environmental, economic, political, and cultural change, but also recognizes that it is closely linked to norms, beliefs, values, and worldviews, as well as emotions and narratives. As such, the integrative discourse not only broadens the topics and issues that fall under the “umbrella” of climate change, but also allows for a deeper analysis of how humans relate to each other, the environment, and future generations. This includes revisiting relationships between individuals and collectives, and constructions of “us” and “other.” It also opens the exploration of more-than-human agency associated with new materialism, agential realism, and other emerging philosophies and paradigms (e.g., Coole and Frost 2010; Morton 2013).

The integrative discourse also recognizes that questioning assumptions and challenging embedded and embodied patterns of thought can foster new ways of seeing systems and solutions to complex, adaptive problems like climate change (Leichenko and O’Brien 2019). As a reflexive part of the climate system, humans hold the creative potential to recognize, reflect on, and transform patterns and relationships that currently contribute to growing risks and vulnerabilities. Integrative approaches often emphasize that piecemeal solutions to climate change can exacerbate old problems or contribute to new ones (Olsson et al. 2017). By contrast, the integration of multiple perspectives can help to identify and generate new types of solutions to global challenges. These include transdisciplinary approaches to mitigation, adaptation, and transformation (Ziervogel, Cowen, and Ziniades 2016). An integrative discourse does not offer specific recipes or mandates for action, but instead opens spaces for new inquiries and new ways of relating to both problems and solutions (Leichenko and O’Brien 2019).

### **Entry points for engagement with climate change**

An integrative discourse offers many entry points for Integrative research, education, and training related to climate change. In particular, it allows human geographers and other social scientists (as well as those working within the humanities) who are not specializing in “environmental” problems, per se, to assert the relevance of their knowledge and understanding of social processes for climate change research. Climate change can be seen as an entry point for investigating the social, cultural, political, economic, and institutional factors behind processes of extraction, production, and distribution of resources, as well as for understanding the implications for inequality and the uneven distribution of vulnerability. Research on topics such as conflict, famine, migration, social well-being, and other “non-climate” issues can also contribute to more integrative engagement with climate change solutions -- including those that go beyond the current focus on mitigation of greenhouse gas emissions and adaptation to climate change impacts. Attention to narratives, identities, values, emotions, and not the least the role of politics, power, and interests in maintaining or transforming the status quo can help to integrate climate change within a larger agenda within the social sciences and humanities. Through an integrative discourse, the expertise and methods of a wide range of disciplines and perspectives become essential aspects of climate change research.

The need for recognition of multiple discourses, worldviews, values, and perspectives is not only relevant for integrative research on climate change; it is also vital for educating and training the next generation of scholars and citizens. As Bulkeley points out, the issue of climate change “features on geography curricula from primary schools to Masters programs” and provides a “significant opportunity to the discipline not only to show its relevance but also to reassert its interdisciplinary capacity.” As newer work on climate change is increasingly more integrative, it raises the question of

which discourse predominates in textbooks and undergraduate and graduate education on climate change.

As educators, we can take several steps toward fostering integrative thinking within human geography. A first step is to make the geography curriculum more integrative when it comes to climate change education. Though geography is frequently referred to as “the interdisciplinary discipline,” geographers can take leadership on new initiatives that span the natural sciences, social sciences, and humanities. Such an approach is already prominent in many interdisciplinary environmental and global studies programs at colleges and universities that do not offer geography. Creating a more integrative curriculum both within geography and in allied programs can introduce students to social and human dimensions of climate change, showing them that rather than being merely an environmental issue, it relates to many areas of inquiry.

A second step is to make our courses more integrative, ensuring that we not only combine insights from a range of disciplines (which is arguably geography’s forte), but also that we present a range of discourses on climate change, explicitly drawing attention to the importance and influence of worldviews, values, and beliefs on the framing of both problems and solutions. Climate change education has been largely the domain of physical geography or environmental science courses, with the social dimensions of the issue covered only within human-environment or environment-society courses. Integrative courses on climate change can draw insights not only from a range of disciplines, but also from a range of perspectives, including from the natural sciences, social sciences, humanities, law, engineering, and medicine.

A third and perhaps more challenging step is to make geography known to students interested in integrative approaches to social and environmental issues. Many students already hold an integrative view on climate change – they recognize that their food, fashion, job, and lifestyle choices are directly connected to questions of social justice, politics, and power – as well as to language, emotions, meaning-making, and psychology. They do not see themselves in boxes or silos, nor do they rank or prioritize social problems as if they were distinct and separate from environmental issues. An integrative discourse on climate change may help more students to feel “at home” in geography, while also providing them with a wider range of methods and tools for engaging more effectively with equitable and ethical transformations to sustainability.

### **Making space**

We have argued for the need to think more broadly and deeply about integration in climate change research, and we have described how an integrative discourse – one that brings together not only different disciplines, but also different perspectives – may address the gaps described in Bulkeley’s article. This need has been picked up on by many scholars, and there is already an exciting and expanding literature that reflects this broader and deeper understanding of climate change. This emerging integrative approach to research and education supports Bulkeley’s call for making “space for climate change across our discipline and to imagine new ways of being interdisciplinary through forms of translation, encounter and friction that can serve to generate new knowledges about the kinds of climate changed worlds we might inhabit.”

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