



Perspectives

Transformative social science? Modes of engagement in climate and energy solutions



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ABSTRACT

The social sciences are increasingly called upon to engage with how decision-makers and stakeholders tackle climate and energy challenges. However, creating or taking part in these new arenas is not unproblematic, and arguably, social scientists have not properly reflected on what types of engagement are most useful. In this Perspective we argue that such engagement is most productive if we can find or create activities where our core competences, epistemological toolbox and critical sensibilities can be put to use. Therefore, we propose three modes through which social science can productively engage with climate and energy challenges in society: (1) producing and situating actionable knowledge, (2) critically reframing discourses, and (3) connecting actors and processes. Combined, these open up a space for social scientists to both critically assess and simultaneously participate in sustainability transformations.

1. Social science called to action

What is the role for social scientists in accelerating sustainable energy transformations? Social scientists are called to action, in the sense that societal actors seem to envision an increasingly central role for social scientists in the arenas of policy formation, technology assessment, interdisciplinary research projects and more (cf. [1]). However, engaging these new arenas is not unproblematic [2]. Discussions in this journal have addressed possibilities for social science interaction with disciplines that deal with physical or technical aspects of energy (e.g., [1,3,4]), but have to a lesser extent taken up how social scientists should interact with society and social actors. Although there has been some debate on this issue (cf. [5–7]), by and large social scientists have not yet properly reflected on what types of engagement with sustainability transformations we should undertake in practice. Or on how we can use our core competences and critical sensibilities most productively to facilitate and catalyse processes of change in a sustainable direction.

Too often, social scientists doing climate and energy research are type-cast into roles that are based on limited conceptions of what social science is, and what social scientists can do [8]. Somewhat simplistically, we might say there are three stereotypic roles, or ideal types, that social scientists tend to fall into when engaging practically in sustainability transformations. One ideal type is the *spokesperson* for the harder sciences. The social sciences are often envisioned to be a bridge,

intermediary or ‘boundary object’ [9] between the physical sciences and society. It is expected that social scientists can translate findings from the physical sciences and engineering into frames and languages that are accessible to social actors (see, e.g., [10]). This is also the way that social scientist often describe their own role [11–13,7].

The second ideal type is the *uncritical co-producer*. This concerns social scientists inspired by ideals of co-production, design thinking and post-normal science assuming that engagement with society is the end goal in itself, rather than a means to achieve substantive goals. Healy [14] argues for scientists to form extended peer communities, for instance, but it is less clear how such activities can be translated into goals beyond public engagement itself. Turnpenny et al. ([15]: 287) distinguish between post-normal science as a “normative prescription and as a practical method”; but often it seems that the normative is forgotten in the practical work. Moreover, power structures and biases in decision-making processes are typically overlooked [16].

The final ideal type of social scientist, in our view, is *highly critical but entrenched* – somewhat like when Mitchell ([17]: 448) describes himself as a “desk-bound radical”. There is plenty of space for critical theory within the social sciences, but social scientists are nonetheless liable to succumb to ‘preaching to the choir’ given the narrow ways in which academic careers and incentives are structured [18]. And when confronted with real-world practical problems, ambitions to be critical can often get in the way of actual engagement and collaboration [19]. As the debate between Shove [20] and Whitmarsh et al. [21]

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illustrated, there is a tendency for social scientists to emphasise disciplinary difference rather than looking for constructive synergies.

It is high time we shatter the confines of these unproductive roles and categories, and rethink what roles we can create for ourselves as social scientists eager to contribute to making the world's energy systems more sustainable and just ([6]; also see [3]). The challenge is to open up spaces that are not predefined by others, such as physical scientists and engineers [22], nor limited by our own preconceptions of the roles we can take on. Rather, we must seek collaborations that enable us to put our core competences and critical sensibilities to work in ways that contribute usefully to the urgent task of sustainable energy transformation.

2. Venturing outside the comfort zone

Our research group, a collective of human geographers conducting research, education, and communication around climate and energy challenges, has deliberately attempted to branch out of the comfort zone in recent years. Human geography as a discipline has long been oriented towards change processes and stakeholders at the local scale. The dominant methods over the past few decades, after humanistic, critical and social constructivist perspectives replaced positivism in the 1960s [45,23], have been qualitative and ethnographic. The discipline has shared strong affinities with social anthropology, sociology, development studies and urban studies. However, despite influences from action research and ideas around stakeholder participation, much of the critical discussion has taken place *within* the discipline rather than through active engagement with society.

Attempting to branch out of this zone of comfort, we have communicated findings and academic perspectives on local issues through opinion pieces and public lectures. We have brought key planners and architects in our city into our academic teaching programs. Moreover, we have initiated research projects by inviting local decision-makers and stakeholders to take part in research design, focussing explicitly on local sustainability issues. As a result, we have been placed into the (sometimes problematic) position of public 'experts' on local sustainability issues and invited into multiple collaborative science-policy relationships. In fact, the official Climate and Energy Action Plan of our city, Bergen in Norway, explicitly stipulates that the city should cooperate with our research group [24].

However, we discovered that this position was more difficult to manoeuvre than we had expected. Societal actors – planners, politicians, business people – have their own ideas about what researchers do and should do, and what the purpose of research is. They typically assume that research will deliver specific 'products' that serve them, and that these 'products' are much more concrete and applicable than what we as social scientists tend to deliver. In manoeuvring this 'expert' position, we have also found ourselves in a complex and messy landscape of different knowledge producers, including physical scientists, consultants and NGOs. All of these produce and circulate knowledge in different ways, and thereby partake in framing society's ideas about research, facts and knowledge. While physical scientists are often able to deliver more concrete facts (i.e., facts that have an associated sense of certainty in a generalised way) than social scientists can, consultants and NGOs often develop knowledge that serves particular interests or values in a clear, more specific and more strategic way. Language issues are also at play here, when the academic community oftentimes categorise ourselves as "knowledge producers", while other societal actors are coined "users", pointing to the role of the latter as receivers of a "useful" knowledge from researchers.

Finding a constructive and critical position within this complex landscape of knowledge production, where objectives and tasks overlap and the underlying interests are often unclear, is not a straightforward task. Our overarching motivation has been clear: we have aimed to contribute to a more sustainable form of energy use in our own region and beyond by putting to use the tools available to us as social

scientists. We moreover regard the ability and capacity for critical reflection as an important part of this toolbox. Yet working out what this means in practice has been more challenging than one might envisage.

As specific examples of work we have been doing where these challenges have come to the fore, we highlight three projects (Project 1–3) that we have been involved in recently, wherein we cooperated with local authorities on strategies to improve climate and energy policy and planning. This serves as a basis for illustrating some key challenges we have encountered.

The first example is *Project 1*, a collaboration with the Hordaland Regional Authority in order to assess their climate and energy planning, and to make them more effective in reaching emissions and energy transition targets. The current Climate and Energy Plan of the Regional Authority has a goal of 40% reduction in climate gas emissions by 2040 (compared to 1991), and a goal of 30% increased energy efficiency by 2030 (compared to 2007). The stated objective behind inviting us into their planning process was to make their work "more science-based". In this project we surveyed municipalities, analysed integration of climate goals into other planning areas, and co-organised workshops with local and regional planners. Based on this, we produced a report in consultation with the Regional Authority, which seems to have been used extensively by municipalities in their planning processes.

In the second example, *Project 2*, we were invited into a planning process by a small municipality located along the Bergen-Oslo rail line, close to Bergen. The rail line is to be upgraded from single to double tracks, and adjacent municipalities are eyeing this rail upgrade as an opportunity to increase their attractiveness as residential areas within easy commuting distance of the central business district in Bergen via public transport. This would facilitate more sustainable mobility to an area that has in practice mainly been accessible by car. Two municipalities had procured a report from a consultancy firm in Bergen, which found that with the new rail and road infrastructure, the region could expect more than 30,000 new inhabitants and 7500 new jobs [25]. In this context, our competence was sought to look into which kind of planning schemes, policies and mobility solutions could help bring about these developments. We helped frame ideas through workshops and meetings, and developed a large research project that we are now seeking funding for.

A third project worth instantiating here, *Project 3*, is a collection of projects where we partnered another Bergen-based research institution. These projects sought to downscale climate models and facilitate planning processes in order to secure relevant climate data for local climate adaptation. An essential challenge that emerged was how local municipalities could actually apply climate data generated by the physical sciences in their planning processes. We co-funded a researcher to connect the projects while also furthering local cooperation between climate and energy research environments.

We see these invitations and openings as providing privileged opportunities to employ our academic positions towards shaping the climate and energy futures of our own region. However, our efforts have been somewhat hampered by a series of challenges for which our formal training has not prepared us adequately. For example, one challenge has been managing expectations in relating with stakeholders. We have experienced that there is often a mismatch between non-academic expectations of our research and the kinds of research methods in which we see ourselves as being competent—the expectation is often that research can deliver more concrete, directly applicable findings than tends to be the case. Our partners in Project 1 explicitly stated at the outset of our collaboration that the output they expected from our work was hard facts – such as the potential energy savings from switching to other energy sources, for instance biofuels. The municipalities in Project 2 expected our contribution would be something that could be used directly in lobbying and negotiations with regional and national governments, for example, concrete information about the prospective emissions savings. We have also observed a certain mismatch of expectations in Project 3 not only from non-academic

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