



Perspectives

Crossing transdisciplinary boundaries within energy research: An ‘on the ground’ perspective from early career researchers



B. Mallaband^{a,*}, S. Staddon^b, G. Wood^{c,1}

^a Aston University, Aston Triangle, Birmingham, B4 7ET, United Kingdom

^b University of Edinburgh, Drummond Street, Edinburgh, EH8 9XP, United Kingdom

^c University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom

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ABSTRACT

This paper considers some of the potential consequences of social scientists adopting physical energy terms in their publications in order to appeal to and hopefully influence policy-makers. There are a number of elements to this debate, from the more practical consideration of how energy is discussed by different parties, to more political considerations around the standing, inclusion and power of the social sciences. We also focus on the key issue of communication, the essential ingredient for translating complex information into everyday use, as well as understanding the people at the centre of energy reduction and who, in our opinion, hold the key to change. This paper highlights the importance of journals such as ERSS in providing a ‘safe space’ for social scientists to publish research specific to their discipline and to promote wider discussion in a suitable language.

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1. Introduction

We would firstly like to thank Adam Cooper for opening up this debate from his unique position of experience of both government department and academia. His experience is hugely insightful in understanding how the social sciences, and other disciplines, may better influence policy. As early career academics from two different fields within the ‘wider social sciences’ (User Centred Design and Human Geography), we welcome the opportunity not only to engage in the debate of how the social sciences can better influence energy policy, but also to partake in and guide the practicalities of how this might happen. We each have experience of working within cross-disciplinary socio-technical energy projects and have previously published on the mismatch and inequality of the role that the social sciences and individual early career social scientists play in these projects within the energy domain [1]; we thus feel able to offer an opinion in constructive debate, from the perspective of those working ‘on the ground’.

In our previous work we report that the social sciences were often included in cross-disciplinary projects for their methodological contributions and to help legitimise energy technologies, rather

than for their full epistemological or conceptual offerings. We suggest that such integration of the social sciences in cross-disciplinary projects is partial; falling short of an equitable relationship. This equitable relationship is what Barry et al. [2] refer to as interdisciplinarity based on an ‘ontological logic’ i.e. in which there is an equal and productive relationship between all disciplines. Working across disciplines has been much debated (e.g. [3,4]), however we suggested that communication was key to promoting successful cross-disciplinarity and we believe that this is equally true for transdisciplinary working, when engaging with policy-makers. We therefore agree with the spirit of Cooper’s call, of the need for better communication between academics (including social scientists) and policy makers. Without this, there is little hope that our combined research efforts will amount to much impact in the daily realities of those whom we, as social scientists, seek to champion e.g. the fuel poor. We are also broadly supportive of Cooper’s socio-technical approach to energy research and suggest this could be taken as an example of interdisciplinarity based on an ‘ontological logic’, as promoted in our own work [1] and also reflected by Castree and Waitt [5].

Whilst we appreciate Cooper’s nuanced discussion of a socio-technical approach in relation to the current imbalance of disciplines within energy research, we are troubled by his assertion that counting the number of times a physical energy unit is discussed in a social science paper either; constitutes a useful proxy for its meaningful engagement in the physical ‘stuff’ of energy, or

* Corresponding author.

E-mail address: b.mallaband@aston.ac.uk (B. Mallaband).

¹ Present address: University of Edinburgh, Drummond Street, Edinburgh, EH8 9XP.

indicates how useful that paper and its findings may be to a policy-maker. We would suggest that in order to understand the latter, an in-depth qualitative study would be required to ascertain how policy-makers access, value and utilise different forms of evidence; and how this changes over time, reflecting wider shifts in thinking. This would indeed be a very fruitful exercise and one from which many within academia (and no doubt policy-makers too) could learn a great deal. We agree with other papers in this volume [5,6] who expand in detail on the importance of understanding the policy-making process, rather than assuming any piece of research will influence policy merely by being published.

2. Publishing issues: sample sizes and publishing sanctuaries

There have been several recent calls for cross-disciplinary socio-technical energy related research projects under the Horizon 2020 and COST initiatives, the USGCRP in the United States and the recent EPSRC (Build)TEDDI fund.¹ Such projects provide great opportunities for ECRs to experience working in cross-disciplinary collaborations as postdoctoral researchers, however, the nature of publishing the results of interdisciplinary projects can be difficult [7,8,1] and tends to see separation of the physical and social sciences due to external constraints (e.g. the REF, monodisciplinary career progression, journal prestige). We feel that ECRs could be disadvantaged from papers written using the socio-technical approach Cooper suggests, as they may struggle to find suitable high-impact journals in which to publish. This suggests that some responsibility lies with publishing houses and individual editors to increase acceptance of socio-technical papers.

Whilst Cooper criticizes several research papers for their failure to include physical units of energy, we suggest that this might be a deliberate choice. Publishing in a chosen journal involves contributing to its particular ongoing debates, and doing so in the common language in which that conversation is conducted. We feel it is unlikely that authors of sociotechnical papers which include significant physical or technical details would choose *ERSS* as a location for such information, perhaps selecting a journal such as *Energy and Buildings* in order to contribute to ongoing technical conversations. We believe that Social scientists are likely to see *ERSS* as a 'safe place' to publish research specific to their discipline and therefore agree with others writing in this volume (e.g. [9]) that comparing the papers published here to those in *Energy Policy* is unfair, the latter being a journal which focuses specifically on policy implications.

This 'safe place' that *ERSS* provides is also key for publishing the type of research produced by social scientists, where some are conducted on a small exploratory scale due to its time and resource intensive nature; whilst other more technical journals which might demand large, more quantitative data sets that provide statistically relevant results. As the social sciences have in some ways been the underdog to the physical and technical sciences, this type of publishing sanctuary is essential, at least until academia in the UK (and beyond) is better able to support and promote all elements of cross-disciplinary research.

We do however suggest that neither the research carried out, nor the manner in which it is reported in journal articles is the main issue, rather the way in which this information is translated into a usable format for technologists and policy makers, a challenge which Castree and Waitt [5] also draw our attention to. Surely how energy is discussed is not the issue, rather the importance that it is discussed and that these discussions lead to an overall reduction in energy usage.

In this perspective, we consider some of the potential consequences of social scientists adopting physical energy terms in their publications in order to appeal to and hopefully influence policy-makers i.e. the central argument of Cooper's paper. There are a number of strands to this debate, from the more practical consideration of how energy is discussed by different parties, to more political considerations around the standing, inclusion and power of the social sciences. We also wish to focus on what we consider to be the underlying issue surrounding this topic and that which we will discuss further below: *communication*. This is the essential ingredient for not only translating complex systems into home use, but also in understanding the people who are at the centre of the complex issue of energy reduction and who, in our opinion, hold the key to change.

3. How do people make sense of energy?

Our main proposition here is that people in their homes and workplaces do not generally think about or discuss energy in terms of Kilowatt Hours (kWh) and other such technical terms, thus social scientists should be free to impress upon policy-makers the significance of the ways in which people *do* make sense of energy, rather than being forced to adopt one particular set of (technical) terms. Before the recent introduction and rise in popularity of digital displays in the home, householders could only use meter readings, bill information or sensory feedback to understand the way they use their energy for heating the home. The smart meter rollout and the increase of in-home displays have enabled easy access to real-time information in kWh as well as pounds and pence, but still social science research finds that people have difficulty in understanding kWh or relating this to their every action (e.g. [10]). We know that people do not 'use' energy; rather it is consumed in order to carry out everyday activities and routines, often subconsciously. Unfortunately, these new in-home technologies have often tended to highlight the energy consumption of appliances, rather than educating householders in the energy consumed from their home as a system, or seeking to uncover their understanding of this.

Researching energy use by asking the general public questions related to kWh has limited results, for this is not how they (or for that matter, we,) think of energy. Strengers [11] highlights the language used by a participant when discussing energy e.g. "kilowatt-*evvers*", intimating the participant's nonchalance surrounding this terminology and their lack of desire to understand it. Whilst, Royston [12] describes how people discuss and measure their temperature and comfort in terms of whether their toothpaste was solid (due to low temperatures) or snow-melt as a sign of roofs being poorly insulated. Clearly, these people are discussing very 'physical' measures of energy, not using the technical terms preferred by engineers or physicists, but rather in terms which make sense to them and encapsulate the impact energy has on their lives. In this we concur with Galvin [9] who argues against an 'elitism' implied by those promoting purely technical measures of energy. Clearly, users do not need an understanding of their energy use in kWh in order to reduce their usage.

Social scientists seek to capture people's understandings of energy use in their own words and through their own experiences, in the context of their wider lifestyles. In some research studies, the issue of cost is removed when discussing with users, as they can be distracted or confused by their level of understanding in relation to units of measurement [13]. Instead social science is keen to further understand the underlying behaviours, habits and thoughts which seek to explain their actions, which has led to studies utilising a wide range of methods such as home tours, participant observation, diary studies, probes, scrap-booking and in-depth interviews

¹ <https://teddinet.org/>.

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