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# Concepts and methodologies for a new relational geography of energy demand: Social practices, doing-places and settings

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## ABSTRACT

Understandings of space as not an objective surface or container but rather a set of relations that are continually made and re-made have become well established within the social sciences, yet they remain noticeably absent in how energy demand research is understood and undertaken. This is, in part, because relevant vocabularies and methodologies remain minimally developed. This paper therefore establishes a conceptual approach, vocabulary and set of methodologies that offer new opportunities for understanding the spatial deployment of energy. In doing so, it works at the intersection of energy geographies and theories of practice, engaging in particular with the concepts of place, anchors and settings from Schatzki's site ontology. After introducing these concepts, the paper outlines how they can provide a more conceptually sophisticated understanding of the energy demand dynamics of a range of changing social practices. It then presents methodologies capable of foregrounding the relational spatialities of practice and energy demand. It argues that carefully working through how energy demand arises as a consequence of social practices, and how spatialities of practice matter for understanding energy service provisioning, helps in developing methodologies that push energy research into refreshingly unfamiliar explorations, analyses and strategies for addressing associated challenges.

## 1. Introduction

The use of energy is undoubtedly a spatial phenomenon: as Lefebvre states, "energy has to be deployed within a space" [1]. How exactly this apparent fact is interpreted, however, depends significantly upon the conceptualisation of space that is adopted. Conventionally and intuitively, space is thought about as an objective surface or container, on or in which locations can be marked out. Yet alternative understandings of space as "the product of interrelations" [2] that are continually made, rather than given, have become fundamental to various lines of spatial thinking across human geography and the social sciences more generally [3]. This paper starts from the observation that this important shift in how space is understood has been noticeably absent in the conception and undertaking of research on the demand for energy. There exists a well-developed vocabulary for discussing energy demand in objective space (and time) – using not only proper names of locations, but also measured distances, scales, coordinates and rates (e.g. kilowatt hours). So, for example, insights might be made about travel patterns between coordinate locations and across measured distances within a particular area of a city, or of rates of energy demand within delineated country borders [e.g. 4]. No comparable vocabulary,

however, has been established for discussing the spaces of energy demand in relational terms. The connected methodologies that produce and proceed from understandings of objective space similarly lack well-established comparators. As a result, researchers have had few tools with which to investigate the processes of 'deployment', whereby energy is used for particular purposes that are themselves embroiled in the relational and on-going making of spatial phenomena. The central aim of this paper is to establish a conceptual approach, vocabulary and set of related methodological strategies that can advance new understandings of how energy demand and space are interrelated.

These ambitions are shaped by the observation that relational spatial processes could provide new understandings of both on-going changes in the world around us and the energy-related challenges that these processes are caught up in. For example, there continues to be an extraordinary diffusion of information technologies, which are variously incorporated into all sorts of everyday activities at home, work and in moving around [5–7]. Practices such as shopping are shifting in terms of where, when and how different goods are being bought. Flexible working arrangements increasingly mean that the practice of work, for some people at least, does not happen only in spatially fixed and determinate work-places, but can also take place on the move, at

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home, in coffee houses, or when (apparently) on holiday. These and many other smaller and larger shifts in what is being done where and when – and what is available to be done where and when – all have consequences of different extents and forms for spatial and temporal patterns of energy demand and how these are being made across society [8]. These consequences in turn have various implications for ambitions to decarbonise energy systems, reduce energy demand overall [9] and manage peaks and troughs in energy system load in relation to supply-side dynamics [10–12].

We do not seek in this paper to focus on any one of these examples of changing social dynamics, or their specific interrelation with energy system challenges, but rather to lay out tools that can potentially be deployed to a variety of ends. Our main contribution is thus conceptual and methodological. This has value, we would argue, as having alternative ways of conceptualising phenomena, and abstracting from what appears to immediately confront us, can enable and stimulate new research designs, alternative units and trajectories of investigation, novel insights and creative approaches to solving existing problems.

In pursuing our aim, we position the paper at the intersection between two identifiable movements in social science research on energy. The first is a reinvigoration, if not entire reinvention, of the field of energy geography, or as Calvert [13] suggests, energy geographies, concerned with bringing the full range of conceptual resources now running through human geography and its subfields to bear on energy questions – in all of their diversity and complexity [14–16]. Whilst some geographers have begun to consider energy concerns in terms of the dynamics of relational space [17,18], including by approaching energy poverty as a “relational assemblage” [19, see also 20,21], as yet these instances provide a limited set of resources for thinking more broadly, and more precisely, about how energy demand and space are interrelated. Moreover, this work has drawn upon varied understandings of social action and therefore presents challenges in terms of the extent to which their insights might be brought together.

The second movement is the bringing of concepts from theories of social practice into the analysis of energy demand, starting from the foundational position that demand is constituted through the social practices of everyday life [8,22]. The use of energy is here understood as part of the doing or performing of many varied practices such as cooking, working, communicating, or laundry<sup>1</sup> [24–26] and at an aggregate level, demand is a product of the vast array of interwoven practices out of which the ordering of society is made [27,28]. Engaging with theories of practice is particularly helpful for our interest in thinking relationally because this approach emphasises that the deployment of energy is not simply about moving energy to appropriate places (as may be a concern for the managers of electricity grids), but also about how energy connects to the evolving arrangement and use of things for specific purposes and actions – such as, for example, the growing global use of air conditioning to cool indoor environments [29–31]. As yet, however, there has been little systematic engagement with the spatial dimensions or implications of working with a social practice approach to energy demand and its ongoing dynamics – in comparison, associated temporalities have been more substantially explored [11,32–34].

In developing this intersection of academic interests, we draw specifically upon the work of Theodore Schatzki and his longstanding concern for establishing an ontology of the social that is centred on practices and “site-based” [35–38]. All theories of social practice start not from the individual and their choices and behaviours [e.g. see 39],

<sup>1</sup> There can be considerable debate about how to appropriately name practices (e.g. [23] A. Warde, What sort of a practice is eating? in: E. Shove, N. Spurling (Eds.), *Sustainable practices: social theory and climate change*, Routledge, London, 2013, pp. 17–30.) as this is always a task undertaken by the analyst. There is no one right answer; the expansiveness or precision of these categories can be used to strategically highlight different dynamics, and either reinforce or bring into question social understandings of what it is that people are doing.

but from the idea that the social world is continually reproduced through a range of diverse practices that people perform [35,37,40,41]. These practices could be seen to occur in objective or partly objective relations to social space, which Schatzki, following Heidegger, defines “as the opening and occupation of sites for human existence” [36]. Whereas objective space is “at least to some extent independent of human existence” [36], social space is inseparable from human agency, and therefore studying the practices of social life becomes de facto a means of studying social space. This is not to say that studying social, relational space involves always focusing upon people actively doing things in the present. Rather it acknowledges that: “physical spatial relations are not ... the only sort inhabiting social life” [35] and thus space is about not only distances on maps or how particular cities are laid out, but also the human activities that bring maps, land zoning, road layouts, shopping districts and more into existence and that sustain or shift their form over time. This provides the starting point for articulating an understanding of space that is open to both its objective and relational forms, and which, whilst sharing something in common with other ways of thinking about the spatial [42], provides a distinctive and thorough integration with social practice.

By building from Schatzki’s work and identifying a specific set of concepts and methodologies that link energy demand to practices, we provide in this paper a way of foregrounding the spatial relations within which the constitution of energy demand is embroiled, without immediately doing so in terms of objective and physical understandings of how practices are performed in spatial terms. We begin by introducing key concepts of *places*, *anchors* and *settings* from Schatzki’s ontology, highlighting how these provide a means of discussing and summarising aspects of relational space. We then ground these abstract concepts by articulating specific examples and implications for studying energy demand. The third step of our argument is to make explicit the methodological principles and processes that arise from this conceptual foundation. In this way we build up a vocabulary and set of methodological strategies that are carefully grounded in understandings of practice and relational space, but which also provide new avenues of investigation.

## 2. Schatzki on places, anchors and settings for social action

The relationship between spaces, times and human activities is a longstanding theme within Schatzki’s work, but one marked by notable shifts from an early focus on space [36] to the later discussion of ‘timespace’ as a unity [38]. Of particular relevance here is how Schatzki understands place in relation to human activity. For Schatzki, human activities are performed within an array or “matrix of places and paths” [35]. Here place does not, as in some geographers’ work, suggest emotional attachment or sense of place, but rather “simply places to carry out particular activities” [36]: “A place is a place to X, e.g., a bed is a place to sleep, a table a place to eat, and a bus stop a place to catch the bus. As these examples demonstrate, places are defined by reference to human activities” [36]. The term ‘path’ then appears as a sub-type, or “particular sort” [35] of this broader category of places: paths are “places on which to reach Y from X (routes)” [36]. This gives places and paths a distinctly relational quality. So rather than being located definitively at some physical site, places and paths are spaces within or along which particular types of activity are understood to make sense and to be practically or sensibly possible. Paths for a footrace might therefore be performed from the starting line to the finish line on a marked indoor running track – in this case taking the form of a fixed and long-lasting physical path for the practice of foot racing. Alternatively, a footrace may be performed along a path from a pile of jackets to a bush in the middle of a large grassy field, a far more ephemeral and physically indistinct form of path, but still understood as an appropriate place for racing.

Whilst this way of thinking about the making of spatial relations is analytically helpful, the many alternative social scientific and

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