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Everyday practices and energy demand: implications for sustainable consumption

There is a tendency, especially in the field of sustainable consumption, to think about demand as an outcome of individual choice and as an expression of variously green attitudes and behaviours. In this contribution I take a different view of resources and how they flow through society. Warde's claim that consumption is an outcome of social practices (Warde 2005), and the further suggestion that practices constitute the proper topic of theorization and analysis (Giddens 1984), provides the starting point for an attempt to bring concepts from social theories of practice to bear on the concerns and preoccupations of those who are responsible for promoting sustainable consumption.

There are many varieties of practice theory, but most proponents agree that practices extend across space and time, that they are 'carried' by people (Reckwitz 2002), that they depend on material arrangements, and that they combine to form always dynamic 'bundles' or complexes. This is an important move in that it shifts attention away from individual decisions, preferences, and behaviours, arguing for analyses that concentrate, instead, on the interwoven lives of practices, as these develop and circulate, and as they are enacted and reproduced.

Consumption as an outcome of social practice

In this article I refer to a handful of studies¹ that illustrate the power and the potential of this approach. In detail, I describe the recent history of central heating and the material relations on which current conventions and expectations depend. My second example, which has to do with refrigeration and freezing, allows me to consider the dynamic character of systems of food provisioning, including those that extend beyond the home. Finally, I discuss the role of the car and the rise of car dependence within and as part of a 'system' of automobility. In combination, these cases show how more and less sustainable patterns of

1 These were mostly undertaken as part of the DEMAND Centre (Dynamics of energy, mobility and demand); see www.demand.ac.uk.

demand (for gas, electricity, and fossil fuel) are inscribed in the practices of which contemporary European societies are made. In bringing the article to a close I reflect on the place of policy making within, and as part of, these dynamic processes.

Introducing central heating

A detailed study of Local Authority housing in Stocksbridge (a 1920s suburb of Sheffield in the UK) and Stevenage (a 1950s ‘new’ town outside London)² reminds us that arrival of gas central heating in UK homes depended upon a distinctive combination of resources (gas, electricity), infrastructures (including pipes), and devices (such as a boiler, radiators, etc.) (Shove 2017). As we discovered, utilities and local authorities were jointly involved in providing the technologies and networks on which modern societies depend. We also learned about the process of acquiring central heating and its impact on daily life. As described, central heating transformed the use of space within the home and enabled seemingly unrelated practices including those of watching TV or of spending time in previously unheated bedrooms (Kuijer & Watson 2017; Watson & Shove 2022).

In Stocksbridge and Stevenage we conducted interviews with people who had experienced the introduction of gas central heating at different points in their lives. The sampling was quite complicated, but the resulting narrative is familiar. In Stocksbridge, open coal fires were replaced by more controllable closed stoves – often made by a company called Parkray. Not long afterwards, it was common to add one or two radiators, fed with hot water from a back boiler, attached to the stove. These systems were subsequently replaced by gas fired central heating systems, with radiators in every room. At that point, the fireplace became redundant and was often taken out, sometimes making way for a television that became the focal point of the home. The number of socket outlets and point sources of light also increased, along with the ‘need’ for powered devices including refrigerators, microwaves, laptops, and more.

This simplified account describes the steady march of new technology, but it fails to show what is happening within the home, or in the lives of the people who experienced these transitions. To grasp these aspects, we need to know more about what it was like to live with a closed or an open fire, or no fire at all. This is

2 These locations were chosen because both have good historical archives.

a matter of understanding how infrastructures and practices change together and how interpretations of comfort evolve.

When seen in this way, the sequences that I've described are made of multiple overlapping histories. For sure, full gas central heating was an intervention in the life of a building, but it was also an intervention in what people expected to wear and what they expected a home to be. One of our interviewees remembered wearing a woollen vest – these garments have pretty much gone out of fashion, but they were a necessary part of living in a much colder indoor climate. To quote:

Yeah we used to wear vests. I forgot about them, I mean we don't wear vests nowadays. Yeah we used to wear vests, of course.

As this extract demonstrates, clothing and heating were intertwined, so much so that in the UK the rise in average indoor temperatures (these have increased by about 5 degrees since the 1970s) has gone hand in hand with a tendency to wear light weight garments and to do so whatever the weather outside.

Respondents also talked about the television. Televisions were often acquired at about the same time as full gas central heating. In some respects, this was a coincidence, but it wasn't entirely so. Watching television is a sedentary activity, and if you are to sit still for a long time, it is good to be somewhere warm. Prior to full central heating this meant lighting a fire in the front room, all of which was quite a palaver.

You really didn't live in the living room because there were no tellies ... 1953, that's when we got our first telly, so that's when we started using the living room, you only used it for parties and Christmas if that.

She'd say 'I'm not putting the [coal] fire on for you to just watch telly for an hour!'

These two quotations hint at the changing use of space. Bedrooms that had previously been unheated became places in which children spent time, played games, and entertained friends. The living room came into regular use, and daily life was no longer confined to the kitchen.

In describing these arrangements, our interviewees described how overlapping systems connected and how new rhythms and practices took hold. One way or another it is now usual to expect spaces to be consistently heated or cooled to somewhere between 18 and 22 degrees C. It is also normal to build to these standards and to base estimates of domestic energy demand on what have become taken-for-granted needs.

So far, I've considered transitions in home heating, but changes like these have wider effects, making a difference to concepts of comfort (space heating and

not person heating), to infrastructures (including boilers, pipes, wires, etc.), to resource economies, to the politics of national security, and to related patterns of supply and demand. The next example takes these ideas further.

Freezers and fridges

Sociologists have not had much to say about fridges and freezers, but these familiar appliances are vital for consumer culture and for what people cook and eat (Shove & Southerton 2000; Hand & Shove 2007; Rinkinen, Shove & Smits 2019). They are so in that they enable the global circulation of frozen foods, of produce that would otherwise decay, and of goods that are now transported and consumed out of season.

As food historians explain, methods of drying, bottling, canning, and freezing food evolve together with related forms of agriculture, harvesting, and food preparation. These connections are obvious when thinking about items like frozen peas or prawns. Fresh prawns go bad in one or two hours unless kept in a fridge, and when frozen they can be stored for months and shipped around the world. Although supply chains are critical, household infrastructures are also key: in effect there is no viable market for frozen prawns if there are not enough people with freezers at home. From this perspective, fridge freezers are the sensitive ‘fingertips’ of a much more extensive system, all of which depends on a reliable and continuous electricity supply. In countries like the UK and Germany, around 14 % of household energy is used for keeping things cold. This is significant, but it is, as it were, the tip of the iceberg. Although data is not usually collected or analysed this way, the frozen food system depends on electricity across the entire cold chain, including refrigerated lorries, containers, and frozen space in supermarkets.

Of course, electricity demand is only part of the story. Freezers are also crucial for other kinds of consumption. In broad terms, freezing enables meals and diets that would not be possible otherwise, but, as with central heating, there is more to say about how technologies fit into daily lives. Not surprisingly, the details of ‘fitting in’ are not the same for everyone and everywhere, and they change over time.

Some 20 years ago, Martin Hand, Dale Southerton, and I took part in a study in York in which we asked householders what they used fridge-freezers for. At first sight, this was a naïve question: keeping food cold was the obvious answer! However, there was more to it than that. For most people, fridges and freezers

were used to manage stocks of food at home, but, as we discovered, this simple observation disguised a multitude of different arrangements. For some people, a freezer was handy because it allowed them to save money by buying in bulk. Others focused on convenience, arguing that the freezer, plus microwave, made it possible to prepare meals at a moment's notice. Still others preferred what they thought of as 'fresh' food but were glad to have a full freezer in case they were suddenly overwhelmed by hungry visitors. Although I have presented them separately, reasons for having a freezer often overlapped and changed, along with the freezer's place in national and international food systems.

This is an ongoing process, as demonstrated by a more recent study undertaken in Hanoi and Bangkok (Rinkinen, Shove & Smits 2019). Rinkinen et al. discovered that households in both these cities used fridge freezers in different ways. As described, some people used them to resist processed foods and dairy products, some used them because they made Western diets possible, and some did both. For example, Dung and Lan, a brother and sister who lived in Hanoi, froze fresh fruit and vegetables sourced from their parents' garden in the countryside. They also used the fridge for milk and yoghurt – products which were not native to Vietnam but had become part of their everyday diet.

These experiences remind us that the fridge freezer is like a chameleon: on the surface it is always white, but in use it changes its metaphorical 'spots' depending on what is inside it and depending on the systems of provision of which it is a part. The result is a kaleidoscope of material arrangements with different connections being made depending on the practices and complexes of practices in which freezing figures. These fluctuating configurations are not limited to the provision of frozen food: as represented here, they are a normal feature of relations between everyday practice, consumption, and demand.

Before discussing the wider implications of these ideas I comment, briefly, on my third case, which has to do with cars, car dependence, and what Urry describes as 'systems of automobility' (Urry 2004). This example builds on the insights of the previous two cases (first about how infrastructures and practices evolve together; second about the emergence of geographically extensive systems of provision), this time showing how multiple arrangements converge and how complexes of practice develop and change together.

Car dependence

Research led by Giulio Mattioli (Mattioli et al. 2020) as part of the DEMAND Centre tackled another seemingly simple question, this time asking ‘What is a car for?’. One method of finding out was to refer to time use data and to the results of large-scale studies that record sequences of activity including what respondents were doing before they got into a car and afterwards. The results were quite varied, but one theme emerged: after using the car many people spent time ‘unpacking’. This was revealing in that it suggested that cars were often being used for transporting objects including other people, pets, and shopping.

In the UK, the advice is to walk or to use a bicycle for short journeys and to leave the car at home. This overlooks the fact that walking and cycling are not good substitutes if cars are used for freight. For instance, it is usually tricky to carry a child or a dog on a bike, and, as we know, supermarkets and supermarket trolleys are designed and sized around the boot of a car (Cochoy 2009). In this respect, Mattioli’s findings are consistent with the conclusion that cars and driving form part of a network of car-related arrangements, from roads to auto-repair mechanics, and from out-of-town shopping centres to car parks and networks of petrol stations, not to mention global reliance on fossil fuel (Urry 2004).

One practical suggestion, inspired by Mattioli’s research, would be to promote sustainable forms of transport that are capable of carrying heavy or bulky items – cargo bicycles would be a good example. There is nothing wrong with this approach, but, as hinted at above, there are other ways of interpreting Mattioli’s work. In his hands, time use studies provide valuable insight into how complex systems of automobility co-evolve, how driving is embedded in society, and how automobility is inscribed in when and where people and things move around. From this perspective, any radical reduction in car dependence implies a wholesale reconfiguration of a mass of interconnected arrangements.

This is very far away from the much narrower focus of those who study consumer behaviour or the contexts in which choices are made. Instead, and as all three cases (central heating, freezers, car dependence) demonstrate, the bigger challenge is to understand how configurations of consumers, producers, and material arrangements take the form they do and what this means for resource consumption and sustainability.

Implications for research and policy

In coming to a close, I discuss the significance of these ideas for research and policy, starting with the suggestion that people use resources (gas, electricity, or fossil fuel) not for their own sake but as part of accomplishing what are taken to be normal standards of living. At a stroke, this shifts the focus of attention away from the realm of decision making and choice. A second related observation is that patterns of consumption change as technologies and practices develop together. In the cases that I have described, UK households require gas because central heating has become the norm, as has using all rooms in the house, wearing similar clothing all year round and leaving hot water bottles in the cupboard. Again, this is not a matter of personal belief or attitude, nor is it really a matter of choice. Instead, ways of life are inscribed in the infrastructures of the home, just as they are inscribed in the networks of provision that surround the freezer, in the practices of supermarkets, and in methods of transporting goods by car.

When framed in this way, the job is to understand how (unsustainable) patterns of consumption come to be as they are and how they evolve. How is consumption inscribed in the practices of which daily lives are made, and how are patterns of demand changing? Responding to these queries calls for careful investigation of the processes and dynamics in play as energy and other resources move through society. Although it runs counter to dominant discourses and to debates about the drivers of individual behaviour, this is not an unusual position to take.

In mapping out the aims of this conference, the ‘organisers’ make much the same point, suggesting that:

What we eat and drink leaves traces in our body. What we throw away becomes part of (harmful) material flows. The material aspects of consumption depend on the circuits in which consumption habits, modes of production, and disposal processes are connected and influence each other.

As the conference programme also implies, the objects of consumption – the material aspects referred to above – make, and do not simply meet, demand. Going a step further, material arrangements arguably depend on extensive circuits, systems of provision, networks, and relations, aspects of which are shaped by policy making of one kind or another.

Rather than being outside the practices and processes they seek to influence, it makes sense to view policies and interventions as *part of* that dynamic. This works in different ways, but, to give just one example, there is a widespread tendency to focus on methods of delivering what are taken to be normal levels

of service – whether these have to do with heating, cooling, or automobility. There is nothing wrong with this ambition, but it is important to recognize that strategies designed to increase efficiency, to reduce waste, or to generate a more circular economy reproduce and sustain what are generally taken to be normal, but also unsustainable, standards of living.

A second observation is that the three cases discussed above (comfort, diet, and car dependence) are shaped by many areas of policy at once. For instance, urban planning and international trade are implicated in making and shaping the contours of everyday consumption, as are health policies, employment policies, engineering standards, and more (Royston, Selby & Shove 2018). It is tempting to suppose that energy policies or consumer policies should be the focus of attention, but this is not always so: instead, and as described above, the dynamics of social practice are multiply entangled and bound up with diverse forms of policy intervention, past and present.

For the moment, these considerations fall outside the scope of established approaches and of attempts to persuade people to ‘waste’ less or to make more efficient choices for themselves. In this article, I have sought to bring these issues back into view. In the process, I have expanded on the suggestion that consumption is an outcome of social practice, that practices depend on configurations of material arrangements, and that many areas of policy making are implicated in shaping systems of provision, now and in the past.

As I have already mentioned, this is not a surprising or unusual approach. This way of thinking about supply and demand, and about consumption and material culture, is consistent with different traditions in the social sciences, including what is known as ‘actor network theory’ (an approach that emphasizes the material aspects of society and insists on the symmetrical treatment of human and non-human entities), and with historical research which describes the emergence of infrastructures and large technical systems (Misa, Brey & Feenberg 2003). There are significant areas of overlap between these positions and social theories of practice, including a shared resistance to strategies that focus on individual or collective decision-making, or on the public understanding of environmental issues.

This is both a strength and a source of trouble. The enduring problem is this: On the one hand, researchers who meet policy needs (as they are usually defined) go along with a necessarily limited understanding of what is at stake – hence the emphasis on behavioural economics or ‘nudge’ theory. On the other hand, those who take a broader view – and who write about material arrangements, histories, infrastructures, and practices – challenge the terms in which questions

of sustainable consumption are usually framed. There is no easy way out of this impasse, but, as this conference demonstrates, there is room for debate not just about the design of policy instruments but about the concepts of normality that are invisibly inscribed in the policy process.

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