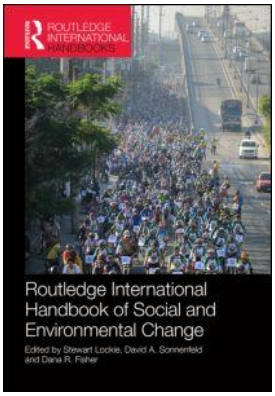

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Sustainability as social practice

New perspectives on the theory and policies of reducing energy consumption

Harold Wilhite

The spectres of climate change and resource depletion create an urgent need for deep reductions in energy consumption in the rich countries of the world. Rapidly increasing energy use in developing countries for human and economic development (poverty reduction and the provision of basic energy services such as health care and schools) increase the urgency for deep reductions in the energy consumption of OECD countries. The need for rapid and radical change is disheartening given the deeply anchored associations in both research and policy between more consumption, economic progress and better lives. These associations have contributed to a stripping down of energy savings to questions of efficiency, both economic and technical. Greater efficiency promises reductions in energy use without threatening the prospects for economic expansion. The research domain that has focused on sustainable energy has been dominated by technologists and economists, and by an agenda based on assumptions about economically rational actors and the power of markets to reorder the social contexts around consumption (Shove and Wilhite 1999; Wilhite and Norgaard 2004; Wilhite et al. 2000).

The debates about the strength of this techno-economic paradigm to deliver results are no longer hypothetical. After forty years of research and policies based on this paradigm, energy consumption in OECD countries has been only marginally reduced. This empirically demonstrable result, together with the increasing urgency of climate change, has grudgingly created an opening for new thinking on energy consumption, and fledgling engagement with broader theories of socio-technical change.

This chapter presents a theoretical framework that draws together perspectives on social, cultural and material contributions to consumption: social practice theory. I explore its potential for inspiring new thinking on how we conceptualize home energy consumption. The important bedrock concepts in practice theory are discussed, including agency, routine, behaviour, reflexivity and habit. Particular attention is given to how practices form, stabilize and change. A distinction is drawn between strong and weak habits, important for policies directed at catalysing change. The chapter concludes with a brief discussion of the policy implications of the social practice approach.

Social practice theory

Over the past decade, social scientists from various academic disciplines have contributed to the development and application of practice theory as related to everyday energy consumption (Røpke 2009; Shove 2003; Warde 2005; Wilhite 2008). This scholarship has moved the theory of energy consumption from its focus on economic rationality and technical efficiency to encompass the ways that people and things interact and how that interaction is mediated by social contexts. These efforts draw on newer refinements in the theory of practice, such as those of Reckwitz (2002). He defines a practice as 'a routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge' (2002: 249, cited in Warde 2005). This perspective provides a way for addressing the contributions of non-reflexive knowledge, informal learning and cultural specificity. As Seyfang et al. (2010: 8) put it, from a practice perspective:

> Individuals … are no longer either passive dupes beholden to broader social structures, or free and sovereign agents revealing their preferences through market decisions, but instead become knowledgeable and skilled 'carriers' of practice who at once follow the rules, norms and regulations that hold practice together, but also, through their active and always localised performance of practices, improvise and creatively reproduce and transform them.

An important shift in practice theory is from a focus on individual agents to a deployment of the concept of agency, defined by Ortner as the potential to influence acts (Ortner 1999, 2006a, 2006b).[1] In the agent-based approach to consumption, individual consumers are free agents whose intentions and actions make consumption happen. The attention is on reflexivity, cognition and conscious decision making. In a practice theoretical approach, agency can be said to be distributed between individuals; the things with which they interact; and the routines and habits that develop in that interaction. Consumption is conceptualized as the result of interaction between the consuming agent (with her preferences and predispositions) and the material environment, mediated by the socio-cultural context in which the consumption practices are performed.

The form for agency possessed by things, routines and contexts has been referred to, variously, as practical knowledge, practical consciousness, tacit knowledge and embedded knowledge. In Pierre Bourdieu's writings, he conceptualized practical knowledge as knowledge that accumulates in and through social relations and interactions. This knowledge is tacit in the sense that it is in the form of a potential or predisposition for action (1977, 1998). He used the term *habitus* to capture this field of structured predispositions. Bourdieu's emphasis was on how predispositions are embedded through 'practice, action, interaction, activity, experience, and performance' (1998: 3) The ways we dress, eat, clean, organize space and time are all saturated by practical knowledge. Bourdieu has been criticized for 'downplaying the agency of the subjective meaningfulness of action' and for viewing practical knowledge as being overly deterministic (Warde 2011: 11). However, I agree with Warde's assessment that *habitus* ought to be rehabilitated in the emerging effort to understand the relationship between lived experience, practical knowledge and action. I return below to a different form for practical knowledge as theorized in Science of Technology Studies (STS), but first want to draw attention to the body, an important site of practical knowledge that is strongly agentive in practices.

Embodiment

Both Bourdieu and anthropologist Marcel Mauss were interested in the body as a site of practical knowledge and in understanding how bodies become knowledgeable. Their work goes against the grain of the bulk of sociological research on behaviour, because, as Crossley (2007: 81) writes, the assumption has been that 'Action, behaviour, interaction, practice and praxis have both embodied and mindful aspects, without any implication that these aspects derive from separate sources or "substances"'. Practical knowledge has been subordinated, because 'culturally appropriate bodily action and coordination "just happens" and falls below the threshold of perception and reflective knowledge' (Crossley 2007: 83). Mauss was interested in fleshing out what 'just happens' when people pick up and hold a baby, pick up and use a fork, apply cosmetics, all of which involve predisposed, 'embodied' agency. Each of these are particular to cultural settings and are capable of being performed without the application of reflexive knowledge. Take eating, for example: when North Americans sit down to eat a meal, they take the fork in their left hand and the knife in their right. They cut their food, transfer the fork to their right hand, and then convey it their mouth. Europeans typically move the food to their mouth without making the transfer of fork from left to right hand. In both of these culturally specific 'eating techniques', the action happens below the threshold of conscious thought. Consumers need not think through their movements in order to accomplish the action. In fact, while performing these movements, people often have their cognitive attention directed elsewhere, for example, to a conversation with a dinner partner or a television programme.

Embodied knowledge can also form through purposive training for competitive sports and other skill-based activities. Training consists of repetition and the honing of tacit skills. While swimming laps in a swimming pool with protected lanes, the experienced breaststroker should be able to accomplish lap after lap without giving any conscious thought as to how to negotiate movements. The successful performance is dependent on a stable socio-material context. For the experienced swimmer, when swimming in a river, lake or ocean, an encounter with rough seas or high waves might require a cognitive override and adjustments in movements to account for changing conditions. The fingers of an experienced typist produce text without reflection, given no disruptions. A talkative colleague, a blaring radio or a malfunctioning word processor might elicit engagement of the cognitive self. Thus the strength of a body technique is related to the strength and uniformity of the cultural predispositions (hiatus) as well as to the nature of the socio-material context in which the action is performed. In the next section I give attention to the role of materially embedded predispositions in practices.

The knowledge embedded in things

Madeleine Akrich (2000: 208) wrote that technologies bring to practices 'scripts' or 'scenarios', which she defined as 'a framework of action together with the actors and the space in which they are supposed to act'. This insight from STS is important for theorizing the agency of embedded knowledge in practices. Curiously, while things and material contexts are named as important contributors to practice, little effort has been made to merge or connect the insights of STS with theories of socially embedded agency. As Marcia Dobres (1999: 8) writes, 'theories of agency are practically mute on the active role of material culture and technological endeavour'. Many social scientists ignore technology because of concerns about technological determinism, anthropomorphizing of objects or perhaps simply because objects do not talk. As anthropologist Ted Ingold (1999: ix) wrote, 'technology tends to be associated with the mechanical replication of the given rather than the creative production of novelty, and hence with what is objective

and determined rather than what is subjective and spontaneous'. As a result, social science has been most interested in how individuals exert agency on technologies, for example, how household technologies are 'domesticated' or 'appropriated' by their users (see Lie and Sørensen 1996). This may be illustrated by how people misunderstand room thermostats and use them like on–off switches; how they override movement-sensitive or natural-light sensitive lighting systems by manually manipulating lighting; or by how people open windows in thermostatically controlled buildings to regulate heat. However, little attention has been given to the capacity of technologies to reshape practices once they are taken into use.

Archaeologists (anthropologists of the past) are an exception. They have a more robust theory of things for very good reasons: things are most often all archaeologists have to work with in their efforts to construct past practices. Archaeologists attempt to dig out (literally and figuratively) the ways in which objects reflect the practices of their users and have influenced social life. Marcia Dobres expresses it this way:

> Because technology is an ever unfolding *process*, a 'becoming,' as it were, it necessarily interweaves the experiential making and use of material culture with the making and remaking of social agents.
>
> *(1999: 3, emphasis in original)*

My research in South India illustrates how knowledge embedded in things can affect practices over time (Wilhite 2008). There is a longstanding food ideology in South India, with roots in India's Ayurvedic health tradition, which associates the storing of prepared foods with the accumulation of substances which cause laziness and stupidity. This ideology contributed to a lack of enthusiasm for the refrigerator when it became widely available in India in the 1960s. Those who purchased the first generation of refrigerators were more interested in their space-saving properties (eliminating the need for storage rooms and cabinets for raw foods like eggs and vegetables) than in their capacity to store cooked foods and reheat them for consumption at later meals. However, a social change is taking place in India in which women increasingly are taking work outside the home, yet retain full responsibility for food preparation and other household chores. The resulting squeeze on women's time has spurred interest in the refrigerator.[2] Once installed in home and in social practices, the refrigerator offers many possibilities for saving time, but some of these conflict with ideas about healthy food. Many families with refrigerators are still conflicted about exploiting the refrigerator's full time-saving potential, for example, to store cooked foods for later reheating and for storing ready-made foods. Many women still insist on cooking food from scratch for each meal and using the refrigerator mainly to store raw foods and dairy products. However, generational differences are beginning to emerge. Many young women are now routinely making food in bulk, storing uneaten portions and reheating them for later meals. This new practice has paved the way for the microwave oven, which in 2004 was the fastest-selling household appliance in India. The embedded potential in the refrigerator has not only contributed to the change in several food-related practices; it has also created an opening for a regime of refrigeration-related technologies in household consumption (microwave, freezer) as well as in food provision (expanded refrigeration in convenience stores) and distribution (refrigerated transport between wholesalers and retailers).

Habit formation

How do practices form and change, and how do practices become habituated? Over time, the ways people cool or heat their homes, prepare foods and wash their bodies (to name only a few

examples) have changed dramatically. Shove (2003) uses bathing as an example of a practice that has undergone dramatic changes over the past century. Nineteenth-century Europeans bathed rarely due partly to concerns that baths were sources of impurities. In the twentieth century, bathing became more frequent as health sciences proposed that water washes away impurities, and then, at mid-century, soap manufacturers invented 'body odour' and 'germs' as targets of the bathing experience. Today most Europeans bath at least once a day and the practice is accomplished with perfumed soaps, shampoos and deodorants.

Reducing the timeframe to that of a couple of generations within a household, many practices, including bathing, are stable. This stability is related to the frequency of performance, as well as to the complexity in terms of space, material contributors and time. Practices become habituated through repetition and in the process a form for practical knowledge develops. The bath or shower; the ways we light and heat the house; how we commute and shop; and the ways we wash our clothes and our houses. Body techniques are strong habits. One reason for this is the uniformity of the socio-material backdrop. This is also true of some of the consumption practices that take place inside the four walls of the home, such as bathing and dishwashing. The complexity of the material, temporal and spatial variables associated with heating, cooking and clothes cleaning, weakens the agency of embedded knowledge and weakens the habit. Routines that extend beyond the borders of the home, such as commuting and shopping, involve bigger spaces, longer time intervals and more opportunities for reflexive decisions. These are weak habits.

We should not forget Bourdieu's point that the socio-cultural context (*habitus*) has an effect on the strength of habits. In Wilhite et al. (2001), my co-authors and I examined the cultural importance of lighting and bathing in Japan and Norway. We determined that highly energy-intensive lighting practices in Norway were deeply anchored in home culture, in which the preferred aesthetic uses small lamps or point lighting to create light and shadow. Light is not used to produce lumens, but rather a particular aesthetic in living areas. This contrasts with Japanese households who used lighting in a more functional way to light up spaces using ceiling lights. Concerning bathing, Japanese associate the bath as much with relaxation as with washing, and spend long intervals bathing, soaping, rinsing and relaxing in the bath. Norwegians are more interested in getting (and smelling) clean and are more likely to take relatively brief showers. These cultural considerations contribute to the strength of lighting habits in Norway and bathing habits in Japan. In these examples, even though the temporal and material components are complex, the grounding in the cultural *habitus* makes them strong habits.

The performance of habits create an inertia, or resistance to change, but nonetheless can change through a change in the socio-cultural context or a change in the material constituents. A move to a new dwelling, the purchase of a new technology or a change in *habitus* can lead to a change in habits. An example from my research on household consumption in India revealed how long-term exposure to a new cultural context can lead to changes in both strong and weak habits. In South India, a large proportion of the workforce spends years abroad working in places like Saudi Arabia and other countries around the Gulf of Amman. These are most often men. Their wives and families remain in South India, where they stay with members of the extended family and, as income accrues, establish their own family homes. In their places of work, migrants are exposed to new household technologies and new ways of accomplishing cooking, heating, cooling and mobility. Over time, migrants live themselves into new habits. A form for 'double *habitus*' is created which connects the work residence to the household in India. Both new household appliances and new routines are transferred through this double *habitus* to the South India home. My research has shown that the ways homes are cooled, the way food is prepared and the ways people transport themselves are examples of habits which have reformed and established themselves as normal practice in India (Wilhite 2008).

Conclusion: encouraging sustainable practices

Such insights on habit are important to the development of policy levers which can be used to move practices in a sustainable direction. The implications are, first, that policy should give consideration to the sources of the embedded knowledge that hold practices together (cultural context, technology agency, repeated performance). Second, there should be an attempt to assess the strength of habits. Once this has been accomplished, appropriate forms for information, technology policies, economic incentives and regulations (laws) can be developed. There is a vast potential for new forms for information based on social learning; new technology designs with 'scripts' that foster less energy intensive habits (not just greater energy efficiency); and new forms for economic interventions which acknowledge the inertia in habits and their inherent resistance to change. The precise nature of these kinds of interventions constitutes a new agenda for sustainable energy policy and need to be developed. Here I give a few suggestions to exemplify new approaches.

Concerning the cultural contribution to household habits, not all practices are equally culturally important. Above, I gave the examples of the importance of lighting in Norway and bathing in Japan. In North America and in many European countries, automobile-centred mobility is important, whereas in Norway car use is related more to functional issues than to social signalling or personal identity. There is a potential in Norway to accelerate change from use of the car to other forms of mobility by making the latter cheaper and more convenient. The technology design element is important, providing the material infrastructure and alternative transport systems which are fast and reasonable.[3] Other types of alternative mobility practices, such as car sharing or appliance leasing, also deserve greater attention. Such practices demystify non-ownership and have demonstrated that sharing does not necessitate radical changes in convenience or the quality of life (Attali and Wilhite 2001; Jelsma and Knot 2002).

Another policy lever based on Ackrich's concept of the technology script is to increase support to the design and implementation of technologies with low energy scripts. The low-energy house and smart-house technologies are examples (Goodchild and Walshaw 2011). Experience shows that it is important to take cultural considerations into account and not give the impression that life in one of these houses would resemble life in a space station. It will be important to emphasize that not only do energy use and charges decline, but that new practices related to these technologies will still be comfortable, convenient and not radically different from life in a conventional home. Smart cities offer further examples of using technology design to affect transport practices (Bulkeley et al. 2011). The provision of bicycle infrastructures and subsequent increase in bicycling is an example of smart mobility. In Copenhagen, after decades of work on making bicycling safe and convenient, over 50 per cent of commuters today commute by bicycle; reduced automobile use hangs together with provision of convenient alternatives in the form of safe walking and biking and fast, convenient public transportation.

Changes in practice can be facilitated with new forms for information that play on what could be called social learning: when people make decisions they rely on the experiences of people who have made similar decisions. Two types of information that draw on the social learning idea hold promise. One involves the conveyance of examples of transitions to successful low-energy practices. For example, many cities around the world are enforcing a new regulation that closes off all or parts of a city to automobiles at certain times of the day or week. These have been almost uniformly well received (Topp and Pharoah 1994). Demonstration projects also play on the social learning idea. They were widely used in the 1980s but are now largely forgotten. In Davis, California, in the 1970s and 1980s, great strides were made in home weatherization after demonstration homes were set up in neighbourhoods around the city. People were able

to observe and experience first-hand how life in a thermally tight house was cooler (in the hot climate) and that the retrofits (windows, insulation, weather stripping) did not degrade notions of what was a cosy home aesthetic. Yet another form for information using the social learning principle provides households with a benchmark by which they can compare and assess their levels of energy use with other households living in similar dwellings. Observing that one's own household energy consumption is higher than that of others living in a similar house can be a stimulus to digging into household habits, assessing the energy consequences, and making a change, whether it be the way energy is managed (i.e. thermostats) or a new purchase (energy efficient fridge or wall insulation) (see Wilhite and Ling 1995; Fischer 2007).

Another insight from a social practice perspective is that tacit knowledge in household practices gets challenged when a family moves from one house and neighbourhood to another. A move often initiates a flurry of projects involving organization of the home's spatial layout, the purchase of new appliances and changes in routines (Wilk and Wilhite 1985; Wilhite and Ling 1992). Further reflection begins when people are preparing to have a child, or later in the family cycle when children move out of the home. Policy for sustainability should give more attention to households in these transitions.

In conclusion, social practice theory offers new insights on stability and change in consumption by accounting for the dynamic relationship between material artefacts, social contexts and individual consumers. Social practice theory acknowledges the co-presence of subjects and objects in the world and gives attention to the field of opportunities and obstacles formed in their interrelationship. It offers a new theoretical foundation for policy that is enabling yet, at the same time, challenging. It is one thing to acknowledge the power of practical knowledge and yet another to find ways to influence and move associated practices. There is a dire need for further development of practice perspectives in future research on sustainable consumption.

Notes

1 In examining the relationship between learning and practices, linguistic anthropologist Ahern has defined agency as 'the socio-culturally mediated capacity to act' (2001: 18). In a recent paper, Gordon Walker (2010) draws parallels to Amartya Sen's (1999) capability theory, in which human development is theorized as providing people with the capacity to improve their lives (education, health, economic opportunity and so on).

2 This is reminiscent of the increasing popularity of the refrigerator and other household appliances in the 1950s and 1960s in Europe and North America, also related to time pressures on housewives (Cowen 1989).

3 This potential has unfortunately not been grasped in Norway, where the rail system is old, underdimensioned, expensive and inefficient.

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