Changing human behaviour and lifestyle: a challenge for sustainable consumption?

Elizabeth Shove, Department of Sociology, University of Lancaster August 2003

Over the last decade or so, there has been a wealth of social and natural scientific debate about the environmental consequences of contemporary consumption and there is, by now, something of a consensus. It is clear that lifestyles, especially in the West, will have to change if there is to be any chance of averting the long-term consequences of resource depletion, global warming, the loss of biodiversity, the production of waste or the pollution and destruction of valued 'natural' environments. To put Brundtland's famous definition¹ another way round, future generations will encounter a much degraded world if present trends continue. Apparent agreement on this point disguises important theoretical divisions regarding the conceptualisation of behaviour, lifestyle and consumption. Are 'lifestyles' in some sense 'chosen' or are they better seen as 'ways of life', that is, as part of the social fabric (Harrison and Davies 1998). What is the relation between 'behaviour' - what people do - and what they think? Is consumption an expression of taste, or a moment in a complex system of social, cultural and material reproduction? The task of sifting through these differences is of more than academic interest. As I suggest below, policies designed to promote sustainable consumption are generally founded upon an extraordinarily narrow understanding of human behaviour. It is not too difficult to explain why this might be so, after all, some theoretical positions are much more amenable to policy-making (as it is presently configured) than others. The danger, however, is that this understandable confluence of theory and practice obscures, sometimes even denies, important forms of social and environmental change. In this chapter I want to give a sense of these limitations and of the kinds of social-theoretical development still required if environmental policy is to make an effective and durable contribution to the challenge of establishing and institutionalising more sustainable ways of life.

The chapter is organised in four parts. The first outlines and characterises three distinctive approaches to consumption as an environmental issue. The second reviews and compares these accounts and the ideas that lie behind them. Part three introduces a new challenge. Meanings of comfort, like expectations of mobility or of food provisioning, have changed dramatically in recent years. As a result, people expect to wear much the same sorts of clothing indoors all year round: they do not expect to sweat nor do they expect to wear bulky sweaters. This inconspicuous trend constitutes a really significant environmental problem. Maintaining conditions that we now count as comfortable, all over the world, requires the use of unsustainably resource intensive systems of heating and cooling and the development of new social conventions and habits. That the production of household air-conditioners in China increased from 220,000 in 1990 to 18,226,700 in 2000 and has been rising by more than 20% per annum (Friedl 2002) is just one indication of the scale and rate of change in this sector. How can such developments be analysed in terms of 'consumption'? I use this case to reflect on the qualities and limits of contemporary approaches for analysing and maybe modifying patterns of consumption that are widespread yet routinely invisible, that are both social and technical, and that seem to have an unstoppable logic of their own. I argue that it is necessary to broaden the reach and scope both of social-environmental theory and of policy if we are to comprehend global transitions of this kind. I finish by reflecting on the types enquiry and forms of intervention that might be inspired as a result.

¹ Sustainable development is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. (world Commission on Environment and Development 1987: 43)

Conceptualising (environmentally significant) consumption, choice and change

There are many ways in which one might classify the literature on environmental consumption. The strategy I have chosen distinguishes between positions that view consumers as (1) decision-makers exercising environmental choice, (2) as citizens influencing the range of environmental options on offer, or (3) as practitioners involved in reproducing variously resource intensive ways of life. These are not watertight categories nor are they all mutually exclusive. Each is none the less sustained by supporting strands of social, psychological, political and economic theory. The following sub-sections provide a brief sketch of these three positions and of the research and policy agendas associated with them.

1 Consumers as decision-makers: exercising environmental choice

According to the authors of a UK government report entitled *Sustainable Development: Opportunities for Change* 'consumers can have a huge impact on sustainable development through their influence as purchasers. But they need help to make choices' (DETR 1998: 28) Observations of this kind have prompted research into the economic and psychological determinants of consumer decision-making in order to figure out how to persuade people 'to change their behaviour' (Ekins 2003). Put more broadly, the aim of a current UK Economic and Social Research Council funded programme on 'Environment and Human Behaviour' is to discover why 'people behave as they do towards the natural environment' and to determine the 'factors that drive or influence human behaviour' (Ekins 2003).

Such formulations of 'the problem' have three related features in common. First, they suppose individual behaviour to be responsive, hence the search for social, economic or psychological stimuli with which to trigger desired outcomes. Second, they imply a method of enquiry that revolves around the isolation and analysis of relevant 'factors'. Finally, they assume that human behaviour can be modified by restructuring the flow of information and incentives, or through education (Ekins 2003). By definition, approaches of this kind pay scant attention to the formulation of options from which consumers 'choose', they do not recognise consumption to be a shared, cultural or collective enterprise, and they take little account of the multiple situations and contexts in which it takes place.

People are primarily addressed as autonomous 'shoppers' whose choices, in the aggregate, determine the fate and future of the planet. Brown and Cameron justify a 'focus primarily on individual behavior because programs and policies aimed at reducing consumption ultimately must alter the consumption decisions made by individuals' (200: 28). This makes some sense. It is, after all, true that much environmental damage could be avoided if we all made 'green' our brand of choice: if we all opted for the most efficient washing machine possible, for locally produced food or for public rather than private transport. In following this line of argument, commentators have been drawn into a maze of motivational psychology and economics in which consumers' actions are explained with reference to a cocktail of competing concepts like those of altruism, status seeking, identity and rational calculation. While 'the consumer' is credited with considerable power (including that of obliterating or ensuring sustainability), such analyses usually preserve a place for what Packard referred to as the 'hidden persuaders' (Packard 1957). The notion that commercial organisations and advertisers have managed to convince people to consume more lends weight to the view that similar techniques might be used to turn evidently fickle desires in other directions. On the other hand, and as advocates of environmental education are quick to point out, deeper values may be at stake. Brown and Cameron, amongst others, argue that the extent to which promotional efforts succeed, and the degree to which people are willing to 'curb their consumption levels for the greater good of the community' (2000: 31) depends upon the existence or otherwise of an underlying bedrock of environmental commitment.

The tacit assumption that consumers' decisions reflect their core beliefs has two consequences. One is to justify efforts to challenge the prevailing ethos of individualism, consumerism and the construction of 'false' needs. These take more and less radical forms. Reisch is, for example, of the view that necessary 'changes in deeply rooted values and lifestyles' will only occur when and if 'people become enlightened consumers who learn to identify those goods whose consumption adds little or nothing to welfare' (Reisch 2001: 369). The sub-plot here is that understandings of welfare and 'real' needs have become distorted and that the route to personal fulfilment is through less rather than more consumption. Other writers pin their hopes on a collective appreciation of the fact that we are all in the same boat (Brundtland 1987).

Although beliefs are expected to translate into action, they do not always do so. This apparently puzzling discrepancy has prompted further research into competing value systems and needs (Uusitalo 1990, Moisander 1995) and into the institutional, financial or informational 'barriers' that prevent people from being as 'green' as they say they want to be. Although they may be swayed by other considerations, the ability to compare the 'true' environmental costs of different courses of action is, it seems, a necessary first step if consumers are to reduce the size of their ecological footprint (Wackernagel and Rees 1995). Following this logic, governments and other agencies have invested heavily in overcoming the barrier of 'popular ignorance' (Ekins 2003) and in providing consumers with the information (labels, advice, etc.) they need to act upon their environmental commitments. In the UK, for example, utilities have been involved in designing and seeking to quantify the effect of educational programmes, as part of the Energy Efficiency Standards of Performance (now called the Energy Efficiency Commitment) scheme. Powergen's Bright Sparks programme is typical. This scheme involved giving school children 'a free, low-energy lamp and a questionnaire on energy use to take home. Families were able to buy a second lamp at the reduced price of £3, with £1.50 of this going to the school.'. According to Powergen's promotional material, 'The project increased energy awareness among children aged between seven and 11, saved energy and is reducing electricity bills by £3.1 million. Over 47,000 customers are benefiting.' (Powergen 2003)

All this rests upon a pervasive model of individual choice and agency, the assumption being that consumers can reduce the weight of their personal environmental 'rucksack' if that is what they choose to do. Popular representations of environmental pioneers and voluntary downshifters confirm this impression of freedom (Centre for a New American Dream, 2003)².

To summarise and simplify, consumers are positioned as key 'switches' in the environmental system. Turned in one direction and the 'metabolism' of society is endangered, turned another way and it is potentially preserved (Noorman and Uiterkamp 1998). Efforts to isolate the determinants of consumer behaviour tend to rely upon economic theories of rational action. Similarly, lifestyles are believed to reflect personal preferences and commitments, whether to 'the environment', or to goals like those of well-being, identity and status. This kind of reasoning justifies strategies that inform consumers of the consequences of their actions and exhort them to behave differently. This might mean encouraging them to buy a low energy freezer or to spend their holidays at eco-friendly resorts. Sometimes the need for freezing or foreign holiday-making is itself called into question. Either way the individual (and his or her motivations) constitutes the primary unit of analysis, and persuasion - which might also include taxation or regulation - the dominant policy tool.

2 Consumers as citizens: influencing the environmental options on offer

² According to the Centre for a New American Dream, 'there is a growing trend of Americans who are working to create a new American Dream - by changing the way they consume to improve their quality of life, protect the environment and promote social justice' (Centre for a New American Dream 2003)

The approaches represented in this second section differ in that consumers figure as the instigators of, not the obstacles to, environmental reform. Assuming that ecological concerns are in fact diffused through society, writers like Spaargaren and van Vliet search for examples of bottom up 'environmental innovation ...initiated by the wish of the consumer' (2000: 70). The notion that motivated citizens will seek to reduce the resource intensity of production is an important, even necessary, part of ecological modernisation theory. Arguments of this sort are usually illustrated with reference to selective case studies of grass roots greening. Taking such an approach, Georg (1999) describes three 'citizen initiatives for "social management of environmental change". These cases are used to show how small groups of citizens attempt to 'develop technologies and create social structures that can minimise the environmental degradation associated with the Western way of life' (1999: 456). In the context of this discussion, the key point is that consumers are involved in developing alternative (lower impact) modes of provision and in reproducing new routines associated with them. They have a hand in shaping options as well as exercising choice between them and as van Vliet puts it, 'they participate in the organisation of production-consumption cycles' (van Vliet 2002: 53). Developing these ideas, van Vliet illustrates different modes of involvement, distinguishing, for example, between situations in which consumers opt for 'green' electricity tarrifs or in which they are themselves providers - owning and using photovoltaic systems and maybe selling 'green' power back to the grid.

A further feature of these examples, and of Spaargaren's earlier work on the ecological modernisation of consumption, is the presumption that people actively and reflexively monitor the environmental profiles of different sectors of their life (Spaargaren 1997). In the examples Georg discusses, eco-villagers soon learn that 'environmentally informed behaviour is expected of them' (Georg 1999: 462), and they soon learn what that involves. In the longer run, environmental criteria are expected to seep into the fabric of everyday life such that actors, 'at the level of practical consciousness, the level of the automatic pilot, - 'stay in touch' with certain rules of the game, i.e. with a set of criteria for ecologically rational behaviour' (Spaargaren 1997: 151).

Proponents of ecological modernisation theory argue that capitalist society can be restructured around ecological goals and that with new technologies and forms of organisation in place, goods and services can be delivered sustainably. This is a particularly attractive message in that there is no hint of restraint, no 'cutting back', and no questioning of contemporary conventions and ways of life. Instead, the challenge is to 'internalise' environmental considerations and position 'ecological rationality as a key variable in social decision-making' (Hajer 1996: 252).

This second cluster of ideas shares a number of distinctive features. Most obviously, there is more to consumption than shopping, hence Spaargaren's recommendation that policy ought 'not limit itself to consumer behaviour 'on the market' but should also be directed at intermediary organizations and systems which can have a direct influence on changes in household consumption patterns' (1997: 193). Put another way, consumers are implicated in what is produced and how. Second, it seems that the 'rules of the game', including the rules of consumption, are formulated and reproduced within social groups. Unlike the first position, this approach acknowledges the cultural and historical construction of choice and preference. On the other hand, both assume that values drive behaviour and that it is necessary to make the environmental consequences of different courses of action visible and explicit. In both there is an implicit emphasis on resources rather than services, the difference being that this second approach expects environmental innovation to be a 'bottom up' process, perhaps involving the development of new (often more localised), systems of provision. For policy, the challenge is not one of 'top down' persuasion but of helping consumers find ecologically rational ways of achieving the taken for granted goals of daily life.

3 Consumers as practitioners: reproducing more and less sustainable ways of life

The third family of ideas revolves around the proposition that patterns of consumption follow from the routine accomplishment of what people take to be 'normal' ways of life. As Ropke puts it, 'consumption is woven into everyday life' (Ropke 1999: 403) and must be analysed as such. Those who concentrate on the specification and re-definition of 'normality', rather than on consumption per se, have different accounts of how practices are organised and of the relation between agency and structure. While Cogoy concludes that 'consumption' has much to do with the way in which individuals organize their lives' (1999: 386), he also observes that 'The fact that most consumers consider spatial mobility or a holiday trip as important contributions to the enjoyment of their lives is not a law of nature, but a cultural phenomenon' Cogoy 1999: 387). In this analysis, peoples' routines and expectations reflect systems of social and cultural order. Taking a stronger line, Reisch argues that 'the non-stop society *forces* consumers to adopt lifestyles which are unsustainable' (2001 :374 - my emphasis).

The idea that people are obliged to consume in order to be part of society raises a host of further questions about the relation between consumption and the production and reproduction of social difference, and about how the symbolic significance of specific forms of consumption evolves (Bourdieu 1984, Douglas and Isherwood 1996). These dynamics are important in explaining how concepts of well-being and the 'good life' take the form they do, how are they institutionalised, and with what environmental consequence. They are also important in defining what Redclift refers to as the 'underlying social commitments which drive our consumption, and contribute to waste' (1996: 146).

As Redclift observes, normal and acceptable standards, practices and ways of life are rarely articulated or questioned either in social environmental theory or in policy. As a result, contemporary formulations are 'afforded value by being naturalised. Their value is not interrogated' (1996:146). By bringing these issues back into the limelight, he clears the way for a much more challenging interpretation of what environmental policy could and should involve. Such a move foregrounds politically contentious questions about the conventions and assumptions around which society is organised. Redclift uses the example of automobility to illustrate his point: 'the right to individual motorised mobility is', he writes, 'enshrined in the way we regard the motor car. Challenging this commitment may mean redefining the relationship between where we live and work. It will require an altogether more radical way of "managing" the environmental policies are unlikely to be successful if they do not address the question of power distribution and control over time in contemporary society' (1999: 395).

Quite what it would mean to ' address the question of power distribution' is itself open to debate. Yet the general conclusion holds: environmental policies that do not *challenge* the status quo - in terms of divisions of labour, resources and time, or social and cultural representations of the good life - have the perverse effect of legitimising ultimately unsustainable patterns of consumption. This criticism can be levelled at the first two positions described above, both of which deal with matters of efficiency (focusing, for instance, on the ecological modernisation of systems of provision, on environmental management and technological innovation) whilst sidestepping debate about the ways of life that are thereby reproduced.

Though sometimes useful, the distinction between efficiency (achieving the same standards of service with fewer resources) and sufficiency (meaning different, less demanding concepts of service) introduces further questions about the relation between technology, consumption and demand. The idea that new technologies might increase resource efficiencies to such an

extent that present patterns of consumption become sustainable requires a conceptual separation between means and ends in a way that is itself problematic.

Turning to a different body of literature, there is some support for the view that technological change is important not (only) because of the resource efficiencies that it might promise, but because tools and infrastructures shape (whilst also being shaped by) taken for granted conventions, practices and ways of life. Rip and Kemp introduce the notion of a 'regime' to describe how 'technical groups and their social environments create stabilized interdependencies that shape further action (1998: 338). As they define it, regime change involves the reconfiguration of a 'seamless web' of social, organisational and technological elements. There are two observations to draw from this. First, and as Rip and Kemp explain, 'the idea of a seamless web ... implies that the evolution of technology and the evolution of society cannot be separated, and should be thought of in terms of coevolution' (1998: 337). In other words, technological 'fixes' to environmental problems are themselves infused with concepts of sufficient and normal practice. Second, and more important, these ideas suggest that patterns of sustainable consumption require and depend upon the development of correspondingly sustainable sociotechnical regimes.

Lessons and insights derived from historical studies of the sociotechnical co-evolution of electric power (Hughes 1984), telecommunications (Fischer 1992) or automobility are clearly relevant for those wanting to engender comparably wide ranging transitions toward sustainability. Geels (2002), Elzen (2002) and others have taken up the challenge of showing how 'transition theory' might be applied and of figuring out what policy makers might do to foster the development of sociotechnical regimes that have less environmentally damaging consequences than those of today.

In practical terms, this means identifying critical moments or turning points at which sociotechnical trajectories might be nudged, if not 'steered' in a different direction. It means looking for opportunities to modulate pathways of transition through considered forms of strategic intervention and it means facilitating interaction between the many actors involved in configuring sectors, services and institutions. Strategies of this kind need not announce themselves as explicitly 'environmental' nor is there any need for consumers and practitioners to 'see' the environment in what they do. After all, it is not a matter of persuading people to change their behaviour, one by one. The challenge is instead one of configuring sociotechnical systems such that the environmental burden of 'normal' practice is less.

The approaches gathered together in this third bundle do not make easy bed-fellows yet they are alike in emphasising the sociotechnical, political and historical structuring of everyday life, with all that entails for patterns of consumption.

The three positions compared

Figure 1 summarises the positions described above with reference to four 'defining' characteristics. These have to do with (1) the representation of consumers and consumption, (2) the conditions under which more sustainable forms of consumption are expected to arise, (3) the types of policy-making that seem to be required, and (4) the terms in which advances toward sustainability might be recognised.

Figure 1: Three positions compared

	Representation of consumers and consumption	Conditions of sustainable consumption	Relevant forms of policy intervention.	Appropriate measures of sustainable consumption
1 Consumers as decision- makers.	Consumers are viewed as autonomous decision-makers motivated by 'rational' economic or psychological (symbolic or positional) 'factors'.	Consumers decide to make 'green' their brand of choice. They do so because of new forms of ecological - economic valuation, and/or new interpretations of symbolic significance.	Develop and promote more resource efficient products and technologies. Persuade consumers to adopt them by means of information, advice and price.	Ecological footprints and other measures of per-capita consumption.
2 Consumers as citizens.	Recognise that consumers' choices are structured and that as citizens they have a hand in determining options on offer.	Ecologically committed citizens will be actively involved in shaping the options on offer and in formulating new or modified institutions and modes of provision.	Develop and promote more efficient products and technologies. Respond to consumer pressure to develop new institutional forms through which to fulfil existing 'needs'.	Ecological footprints and other measures of per-capita consumption together with an assessment of the ecological modernisation of infrastructures, systems and modes of provision.
3 Consumers as practitioners.	Consumption is viewed as consequence of practice and analysed as such.	The reconfiguration of normal practice and the social, symbolic and technical co-evolution of taken-for- granted routines, habits, and expectations of everyday life.	Influencing understandings of normal practice, perhaps by 'steering' sociotechnical systems in transition, promoting diversity or trying to foster sociotechnical configurations that work (for the environment).	The specification of normal standards, conventions and expectations of service and the character of entire (sociotechnical) systems of provision.

This figure helps identify points of similarity and contrast. As it makes clear, the first two positions suppose that lifestyles can be 'changed' by force of political, moral and environmental commitment, or through economic and other forms of persuasion. By contrast, the third understands changing conventions of everyday life, lifestyles if you will, to be the result of collective, contingent and emergent processes of sociotechnical co-evolution. Although the first two positions have some features in common they differ in the representation of consumer-provider relations, the latter supposing that these complex, dynamic and themselves an important part of the story.

There are other differences of emphasis and orientation, but in terms of method, the table arguably represents a successive broadening of the frame of reference from (1) individual behaviour to (2) social institutions to (3) the sociotechnical fabric of society itself. Some might claim that each 'position' consequently affords a different view of reality, each providing a partial but complementary picture of what consumption is about and how it changes. Others would take a harder line, arguing that nothing can happen unless individuals decide to act in different ways. From this perspective, the second and third positions describe the backdrop of 'factors' against which autonomous individuals make real decisions that affect the world. By shifting the emphasis just a little, the background becomes the foreground, and the rule-sets and grammars of social convention take centre stage. In fact, there is more to this than a simple switch of focus. If we believe that 'the structural properties of social systems are both the medium and outcome of the practices they recursively organize' (Giddens 1984: 25), the previous interpretations are not just partial, they is quite simply misleading.

There is nothing to be gained by backing away from this conclusion or from papering over underlying differences of theory and approach. Especially not given that differences of orientation generate contrasting interpretations of relevant and appropriate forms of policy intervention. Such is the dominance of economics in policy making, and such the need to turn truly complex issues into tractable problems (Liberatore 1994) that the positions sketched above do not get anything like equal treatment. The remainder of the chapter considers the practical and political implications of this imbalance. What are the consequences of relying on some but not other forms of social theory? Which issues come to the fore, which are obscured, and with what effect?

It is easy to see why national governments and international agencies routinely adopt the theoretical baggage of the first and sometimes the second paradigms. A recent OECD report entitled 'Towards sustainable household consumption? Trends and policies in OECD countries' typifies this approach (OECD 2002). Building upon the results of previous workshops, including one on 'information and consumer decision-making for sustainable consumption' (OECD 2001), these documents review the effectiveness of different policy instruments in influencing consumer decision-making. Although this work acknowledges that it is important to shift the 'structure' of consumption, most of the policy suggestions have to do with modifying information and price signals, providing people with consistent messages about the sustainability of their consumption choices.

The sheer familiarity of this kind of analysis should not lure us into thinking that there is no more to be said. There are many reasons why this representation of consumption and behaviour should be challenged, two of which are particularly important for the present discussion. First, and as indicated above, efforts to persuade people to buy environmentally friendly goods and services may legitimise potentially unsustainable conventions and expectations. Second, by focusing so exclusively on the behaviour of individual consumers, policy makers have no way of detecting, let alone influencing, longer term transformations of technology, culture and practice. As a result, large reaches of social environmental change quite simply disappear from view.

In the next section I consider recent developments in the global indoor environment in order to illustrate this point and explore ways of conceptualising and modifying long term swings in what people take to be normal and necessary patterns of consumption.

3 Consuming comfort - recent developments in the indoor environment

Although people have reported being comfortable at temperatures ranging from 6 to 31 °C. (Goldsmith 1960, Nicol 1999:271), indoor climates are converging. For a number of reasons, some of which are discussed below, people have come to expect the same indoor conditions all year round and all over the globe. In environmental terms, the resources required to maintain these protected bubbles of around 22 °C, whatever the weather outside, are considerable and vast amounts of energy are consumed to this end. There is no doubt about it: this is an arena in which energy consumption is escalating fast, and doing so as a consequence of rapid and radical redefinitions of what indoor environments should be like.

Looking back over the last century, comfort-related patterns of human behaviour and lifestyle have changed dramatically. In the UK, few people now wake to traces of frost on the inside of their windows in winter. Sales of hot-water bottles have dropped and the waistcoat has gone out of fashion. In Southern France and Spain, the long lunchtime break is in decline and in April 1999, the Mexican government officially announced the end of the siesta for its 1.6 million employees (Moore 1999). Meanwhile, people who live in air-conditioned homes keep the windows shut in the summer. They keep cool in private, staying inside rather than spending time outdoors on verandas or porches. In short, more exacting concepts of comfort have reconfigured our relation to the 'natural' world, transformed the ways in which we heat and cool our homes and influenced where and with whom we spend our time.

All the same it is strange to talk about changing conventions of comfort. As defined by physiologists and building scientists, comfort has to do with the physical relationship between a person and his or her environment, comfortable 'neutrality' being that state in which the heat generated by the human body is equal to the heat transferred away. Such a definition naturalises and standardises the 'need' for comfort in a way that it is difficult to argue with. Surely architects and engineers should do their best to meet the thermal-physiological needs of those who live and work in the structures they design. In addition, and because comfort is specified in the universalising terms of human biology, peoples' needs are (on average) the same, whatever their social status or cultural background. From this point of view, the global convergence of indoor climates is normal, natural and something to be expected. Whilst there is much that might be done to improve the resource efficiency with which comfortable conditions are achieved and maintained, the specification of comfort is not, in itself, in question: not for policy makers and not for those seeking to produce a more sustainable built environment.

On the other hand, physiologically based interpretations of comfort and the heat-balance models on which they depend are relatively recent inventions. As Humphreys observes, the management of comfort 'pre-dates by thousands of years the development of the theory of heat exchange' (Humphreys 1995: 5). I do not want to go into detail here, but it is arguably the case that contemporary concepts of comfort reflect the air-conditioning industry's interest in promoting a definition that establishes and justifies the 'need' for mechanical heating and cooling. Gail Cooper's historical study of *Air-conditioning America* (1998) reveals some of the commercial advantages of isolating and quantifying the parameters of an optimal indoor environment. She writes as follows: 'When it was shown that no natural climate could consistently deliver perfect comfort conditions, air-conditioning broke free of its geographic limits. When no town could deliver an ideal climate, all towns became potential markets for air-conditioning' (Cooper 1998: 78). Taking this observation a stage further, Oseland (1993) concludes that there is nothing natural or normal about the convergence of indoor climates. The fact that buildings are now heated and cooled to provide the same conditions the world

over tells us more about the effective 'marketing' of an idea than it does about the requirements of the human body. If we subscribe to the view that comfort is an essentially social construct, albeit one that is embedded in a sociotechnical complex or 'regime' of regulation, engineering, material structure and habit, we see before us the successful globalisation of just one possible formulation. Since other interpretations are possible, it is reasonable and perhaps important to think about how more environmentally forgiving definitions might take root in the future.

Strategies to contain the environmental costs of 'comfort' vary depending upon whether comfort is taken to be a natural state of affairs or a provisional cultural achievement. As the next section shows, they also depend upon how changing patterns of behaviour and lifestyle are conceptualised and understood.

4 Reconsidering comfort and consumption

Whatever the dynamics involved, heating and cooling now accounts for around half the energy used in buildings. Air-conditioning is not one 'technology' and systems come in different forms. Taking these together, a major report on the industry (BSRIA 2002) concludes that the world market for air conditioning is growing and changing dramatically, especially in East Asia and Southern Europe (BSRIA 2002). To give an indication of the rate of change, sales of air conditioners in the Chinese market rose by 41% between 2000 and 2001 (Friedl 2002). And in the UK, one commentator, writing for Building Services and Environmental Engineer, is of the view that 'it would only take two or three hot summers to create sufficient momentum for it (the UK market) to reach a critical mass. The moveable market would soar, and a spill over into mini-splits would follow fast and, like air conditioning in cars, would be here to stay' (Giles 2003). On these grounds alone, the reproduction of 'comfort' is an increasingly resource intensive activity. So what might each of the three 'positions' described above have to 'say' about the standardisation of the indoor climate and associated patterns of energy demand? It is useful to think this question through in order to show how well (and how badly) contemporary theories fare in analysing and addressing trends in behaviour and lifestyle that are of far-reaching environmental significance.

Promoting efficiency

To the extent that governments deal with questions of comfort at all, they do so in terms of energy consumption and technical efficiency. In the UK, the aim has been to improve the technical performance of heating and cooling systems and to promote passive solar design. Consistent with this approach, clients and consumers are appealed to as decision-makers responsible for the selection of more or less efficient technologies. Challenging 'need' (for example, the 'need' for air-conditioning in the UK) is for the most part beyond the scope of policy making as conventionally conceived. It is, in any event, a dangerous path to follow given the range of commercial interests at stake and the politically unpalatable consequences of advocating standards that fall short of 'comfort' as it is currently defined. The storm of outrage that followed Edwina Currie's³ suggestion that those too poor to heat their homes to 'current' standards should wear more woolly clothing demonstrated the risks involved. Subsequent more cautious efforts to persuade householders to turn the heating down for the sake of the global environment have not been strikingly successful. In fact average temperatures in British homes have been rising steadily over the last thirty years, from around 17 to 21 °C.

Although the promotion of efficiency is by far the most common policy response, it is one that internalises and takes for granted those features of indoor climate change that are the most

³ Edwina Currie was a Conservative Party politician when she made this suggestion in the 1980s.

problematic. Caught up in the flow - indeed arguably contributing to it - such efforts do nothing to address the redefinition of service or to challenge the institutionalisation of lifestyles that suppose and rely upon a standardised indoor climate.

In this respect, the focus on individual behaviour and technology is itself restricting. Although the transformation of societal routine can be analysed as a consequence of multiple individual 'choices' - the decision to invest in air-conditioning, the decision to develop some but not other technologies, the decision to design new homes differently *because* they are air-conditioned, and so forth - it is important to recognise that practices intersect. Whether companies that occupy air-conditioned offices abandon the siesta or not depends, above all, on the working hours of those with whom they interact. To give a somewhat different example, it is increasingly difficult to buy a new car that does not come ready equipped with air-conditioning. Likewise, there is no way you can sit out on the veranda in the cool of the evening if your mechanically conditioned home has been built without one. In short, comfort-related lifestyles have evolved but not necessarily because of personal or even corporate 'choice'.

In concentrating on efficiency not service, and on moments but not contexts of decisionmaking, governments and international agencies find themselves tinkering with the tip of a metaphorical iceberg that is, unknown to them, moving fast and with a momentum of its own.

Restructuring supply

What might proponents of ecological modernisation theory have to say about global indoor climate change and the patterns of consumption associated with it? As above, questions of 'need' are naturalised but by taking a rather broader look at the systems of provision involved a much wider cast of actors and interests come into view. Working back from design and engineering, requisite levels of heating and cooling might be achieved with the help of passive or active solar systems, renewable energy and/or better, more precise controls. Walt Patterson (2003) argues that the built environment should be analysed as part of the supply infrastructure since its relative efficiency affects the functioning and the resource intensity of the whole. Similarly, new opportunities for intervention and influence emerge when analysts look beyond the end-consumer and examine the many ways in which 'demand' is constructed and configured across the entire supply chain of resource production and consumption (Chappells 2003; van Vliet 2002). Although initiatives inspired by this kind of thinking dig deeper into the systems through which 'comfort' is provided, they too fail to engage with transnational currents of social and cultural change. In short, ecologically modernising consumers are expected to influence the way in which services are provided, but not the specification of 'need'. While the first two strategies take the definition of comfort for granted, the third acknowledges the sociotechnical structuring of demand.

Reconfiguring demand

There are many reasons why conventions of comfort and associated practices change within and between societies. But what, if anything, might be done to halt the diffusion of just one tightly specified formulation? At a stroke, this question increases the scope of enquiry and of possible policy intervention. It is true that there are few precedents to follow but there is no reason why environmental policy should not seek to influence 'long term sociotechnical transformations including cultural aspects such as the aspiration to modernity' (Rip and Kemp 1988: 392).

Over the longer run, the technical efficiency of specific devices is much less important than the symbolic relationship between the technologies of indoor climate control, modernity and new, consumption-intensive, concepts of comfort. Illustrating this point, Hal Wilhite's (1996) study of Japanese advertisements shows that air-conditioning has been bought and sold as

a marker of Westernisation. It is not just that there is status attached to having airconditioning. In addition, its use challenges more traditional body-centred understandings of comfort and has further consequences for meanings and experience of health and wellbeing, for the clothing that people wear and for the design and use of the home.

As indicated above, the accomplishment of comfort is entwined with the sociotemporal order, with fashion, with property development and design, and with an interlocking 'package' of contributory practices and expectations. The task of deliberately engineering change is correspondingly complex. On the other hand, these interdependencies generate multiple points of intervention, some of which may have the effect of 'tipping' the entire system in a different direction. To go further here, and to put the insights of 'transition theory' into practice, it is important to learn about how regimes of 'thermal monotony (Heschong 1979) have taken hold over the last century. Assuming that concepts of comfort are malleable, the question is then how, and under what conditions, societies might (re)generate localised - or at least less resource demanding - interpretations and practices. In some cultures this might involve the reintroduction of the siesta. In others the waistcoat might come back into fashion. Alternatively, the sensations of thermal variation might come to be valued in their own right.

Although this is unfamilar territory - especially for environmental policy - there are ideas and theories that may be of help. I have already suggested that the field of science and technology studies has much to offer when thinking about the relation between systems of technology, convention and practice and how these change. This is not the only option. Following Giddens's theory of structuration, a further intellectual challenge is to discover how rules are restructured, how traditions and innovations are reproduced through practice, and where government policy fits into this picture, if at all. There is more work to be done in figuring out how policy intersects with practice yet the overall message is clear. Environmentalists have to find some way of encouraging and promoting social and cultural diversity in the way that comfort is defined.

This implies a complete reversal of current methods. Rather than standardising energy labelling or promoting efficient technology (and the standardised assumptions of need and service associated with it), national and international agencies should be encouraging the proliferation of regional (climate sensitive) understandings of comfort and the development of a corresponding variety of localised sociotechnical regimes. Rather than inadvertently naturalising the meaning of comfort, its definition should be the subject of explicit discussion and debate.

Conclusions and implications

I want to make four main points in conclusion. First, and most important, I have tried to show that the most popular and pervasive ways of thinking about consumption and the environment are fundamentally limited. Because they focus on individual behaviour, choice and decision-making they fail to detect sweeping changes in the defining features and contours of everyday life. Because the shifting sands of 'normality' lie outside the field of view, they also lie beyond the reach of plausible and possible policy intervention. Serious restrictions follow. It is all very well to concentrate on cars and on the design and development of more fuel-efficient models, but what about the social and technical infrastructures of automobility and the conventions of co-presence upon which normal forms of social interaction now depend? There are two aspects to this. It is not just that the heritage of psychological and economic thought cuts possible programmes of action short, though this is probably so. The second, more pernicious, effect of this tradition is to naturalise demand by default. In the bigger scheme of things, currently popular policy 'tools' designed to encourage more sustainable forms of consumer behaviour are likely to prove ineffective, if not counterproductive. Because it does little to challenge or stem the standardisation and globalisation of resource intensive ways of life, it is possible, indeed likely, that much 'environmental' policy legitimises and fosters the standardisation of unsustainable habits and expectations.

My second point is that this need not be the case. As I have hinted at already, there are other theories, resources and paradigms on which to draw. Recent interest in transition theory, especially in the Netherlands, illustrates the point that government agencies are willing and able to think more broadly about the limits and possibilities of policy intervention. This may involve little more than swapping one illusion of agency (that policy-makers can influence consumer behaviour through persuasion, taxation and regulation) with another (that if only they could find the right moment and form of intervention, whole 'regimes' of sustainability might fall into place). Yet the very idea of a 'system' in 'transition' brings with it a new way of thinking about consumption, lifestyle and behaviour. While a more systemic, more co-evolutionary approach does not necessarily bring the 'big picture' back into view, it does at least ensure that the construction and reproduction of 'demand' (whether that is for comfort, for automobility, for foreign food or for unprecedented 'standards' of personal hygiene) is made explicit and is itself part of the problem.

In reviewing and exploring alternative ways of conceptualising consumption, lifestyle and behaviour I have tried to reveal divisions in theory, method and approach. The cake can be sliced this way and that, yet my third point is that there are paradigmatic differences in the conceptualisation of agency, structure and social change. To some extent, and as one might expect, these mirror disciplinary divides within the social sciences. As one might also expect, some paradigms are more immediately 'relevant' than others to policy and practice, as that is currently configured. Following the argument developed above, the contemporary confluence of ideas is uniquely dangerous.

My fourth point, then, is that a different approach is required if there is to be any hope of engaging with, let alone influencing, deeply problematic trends like those relating to comfort or mobility. This means jumping ship and embracing a new agenda (one that has to do with sociotechnical transitions and reconfigurations of rules, resources and habits), and a new set of theoretical tools. It also means re-reading the title of this chapter and giving it a different inflection. Is the challenge of sustainable consumption one of changing human behaviour and lifestyle? I would argue 'no', it is not a question of fretting about prices and barriers or of searching for levers that might be pulled to re-engineer consumer decision-making. Is the challenge of sustainable consumption one of changing dominant ways of thinking about human behaviour and lifestyle? To this question, I have no hesitation in answering 'yes'.

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