

Contextualising values and behaviour

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1. Synopsis

The application of anthropological theory to energy use and patterns of consumption, and a case study - a survey of UK householders' environmental values and behaviour.

2. Abstract

This paper proposes a theoretical framework permitting the systematic analysis of the factors affecting energy use. Rather than dealing with households or individuals in isolation, it considers the cultural contexts of energy use, the processes through which particular contexts engender particular environmental values, and the fields of relationships linking individuals, households, individuals and society.

Drawing upon various strands of anthropological theory, the paper examines the various 'forms' of which culture is comprised, and considers how, within this wider umbrella, different 'scales' or contextual levels interact and create sub-cultures in which cultural processes and values are modified to create context specific behaviour. At each level, the cultural 'context' and its developed values have the potential to affect energy use patterns and, similarly, each may have a particular response to policy initiatives.

The theoretical discussion is illustrated by a brief outline of recent survey work on UK householders' energy related values and behaviour. The paper foregrounds some of the social and cultural factors that affect environmental values and energy use and attempts to place these within a broader cultural frame.

3. Introduction

For some years now, energy research has been dominated by two major approaches: an engineering-based 'bottom-up' approach which deals empirically with concrete data (eg. actual consumption levels, household characteristics and demographics), and a 'top-down' econometric approach based on principles of 'economic rationality'.

These two approaches share some common problems: both consider energy purchase and use in self-contained individual or household 'units' detached from their socio-cultural context - and thus separated from much that is potentially explanatory; both nurse the fond illusion that human behaviour is subject to a few simple, linear 'drivers'; and both are highly reductive, tending to make the data more manageable but less meaningful. This has led, perhaps inevitably, to reliance on equally data-led social science research methods which are also largely quantitative, and which have attempted to categorise populations into particular cohorts or types (eg. EPRI 1994).

The reduction inherent in these approaches might not be so problematic if it genuinely compressed dense and multifarious data reflecting the complexities of consumption, but in most instances it relies either on patchy, largely technical, data (such as different size households' consumption of electricity, or a particular population's ownership of appliances), or on massive implicit assumptions about human behaviour (eg. that it is driven by simple economics) which rarely come close to representing cultural realities. In both approaches the many social and cultural forces which actually shape patterns of consumption, are excluded.

Energy research is therefore at somewhat of an impasse: as the more complex issues underlying energy behaviour begin to emerge neither engineering nor economic models, though familiar, are sufficient to tackle the analysis of intricate, qualitative social issues. Researchers attempting to elucidate or model the processes of consumption are thus confronted with a daunting array - and potential morass - of qualitative and quantitative data on the multitude of factors influencing patterns of consumption.

Although this may feel like an awkward stage, it is in many respects a positive indicator of progress. Elusive issues - for example, roles and identity and the development of cultural values - are being drawn to the surface, making visible some of the important relationships between the socio-cultural, economic and technical aspects of energy use. Though this may not facilitate immediate and familiar research outputs, such development is promising, enabling people to begin to situate behaviour and patterns of consumption within realistic, dynamic and multi-faceted cultural systems.

A potential way forward for the management and analysis of these much richer data sets, is to make use of some of the well-developed theoretical models offered by the disciplines that actually specialise in culture and behaviour. Anthropology of course has a long history of developing such theoretical frameworks, and these clearly underpin the work of some of its practitioners in energy research (eg. Wilhite and Ling 1992, Wilhite *et al* 1995, Kempton 1995, Lutzenhiser, 1992, 1993, Hackett and Lutzenhiser 1986, 1991, Strang 1994, 1995, 1996a&b).

However, there is now a major need for descriptions of 'cultural systems' which bridge the divide between the disciplines which deal with social and cultural issues and the majority of energy researchers. This is no mean feat, given the vastly differing perspectives which are involved: it requires social scientists to describe their work in terms which are readily accessible to computer modellers and engineers (which may require controversial compromises in their conventional forms of description), and it pushes the engineering-based disciplines to let go of the certainty of concrete data and encompass a host of new and unfamiliar ways of considering energy consumption.

This paper attempts to make such a bridge. It is, in essence, a heuristic device. It is not intended to rewrite cultural theory, but merely to suggest a simple 'model' in which social and cultural issues are addressed explicitly and technical and economic data are located within a larger cultural framework. Emerging from an interdisciplinary analysis of energy policy with the Environmental Change Unit's DECADE team, its purpose is to communicate across disciplines and make 'culture' more accessible and thus less peripheral for the computer modellers, statisticians and other non-social scientists involved in energy research.

4. A theoretical framework

Within the discipline of anthropology there is a range of complex cultural 'models' or 'interpretative frameworks' which could be used to contextualise energy use, and most would normally be represented through detailed textual explanation. In such a broad discipline, there is also no consensus or single 'cultural theory' that could be employed without contention, and there is no space here even to summarise the potential theoretical perspectives that could be used, ranging from early the structuralism of Durkheim (1954) and its developments (for example by Firth, 1964), to the 'social action' of Bailey (1993, 1996), the 'habitus' of Bourdieu (1977) and to the more fluid phenomenological view of culture which now dominates anthropology (eg. Morphy 1993, Miller 1987). The following model is drawn from of a number of such theoretical strands, and attempts to present culture as a continual process of adaptation which recursively creates and is created by human action.

The sketch that follows is an attempt to represent some basic principles diagrammatically, but it must be stressed that such dense compression can only begin to represent cultural dynamics. This particular framework is based upon a number of central tenets:

Culture can be defined as a dynamic, adaptive system which mediates all human-environmental interactions.

The relationship between behaviour and culture is recursive or 'phenomenological': belief, knowledge and action

- including energy behaviour - create and respond to cultural forms. This assumes that humans are socially constructed beings, albeit with personal/genetic predispositions and individual aspirations.

The human-environmental interaction is progressive, often containing a wide variety of temporal frames.

Energy use is part of - and representative of - wider patterns of consumption.

The consumption of resources is largely determined by socio-cultural practices and beliefs, though also subject to environmental/ecological pressures and human needs and drives. It articulates with the production of material culture which, as part of a physical and social environment, recursively defines and expresses consumption behaviour.

At a broad cross-cultural level 'culture' can be further broken down into elements or 'forms' that are sufficiently broad to be applied universally, permitting cross-cultural comparisons. They can be seen as the various 'aspects' of culture:

- Social and spatial organisation.
- Economic practices.
- Cosmological/religious concepts.
- Law/moral order.
- Art/representation/symbolic meaning.
- Material culture/technology.
- History/cultural identity.

These mediate interaction with the physical world. Though the reality is obviously a great deal more complex, it is possible to describe broadly 'linear' relationships between people and the environment, and 'lateral' interconnecting relationships between cultural forms. This opens up avenues for analysing socio-cultural data systematically, and may, in the longer term, permit the quantifying and modelling of such data. Describing the data in this fashion also acknowledges the influences of the physical environment (including material culture and technology), and defines a cultural framework which, though it may be composed of universal 'forms', is specific to a particular society.

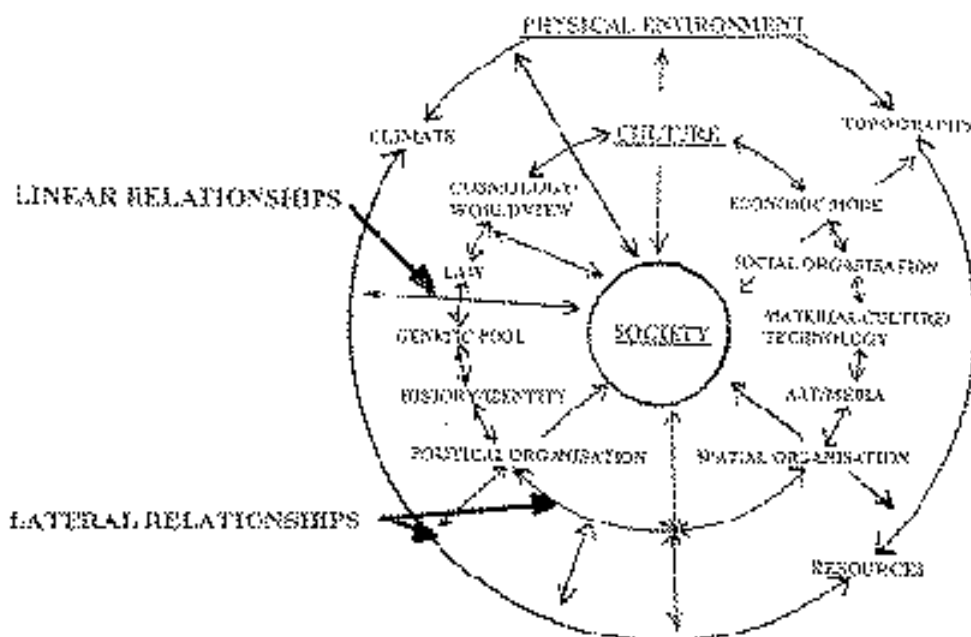


Figure 1. Through recursive 'linear' and 'lateral' relationships, culture mediates human-environmental interaction. (Strang 1996b).

As Lutzenhiser has pointed out (1992), previous approaches to energy research can be subsumed within a larger model of 'culture'. For example, engineering-based methods could be placed under a 'material culture' umbrella, and the econometric focus considered within the cultural form described as 'economic mode'. With this in mind, these familiar approaches, rather than being discarded, can be relocated within a wider, integrative framework and their data reconsidered from a new analytical viewpoint.

4.1. Applying anthropological theory to energy behaviour

Energy behaviour has traditionally been reified as a rather specialised, technical activity. This historical baggage makes it almost counter-intuitive to suggest that the major reason for relocating it within a much broader cultural model is because each part of the framework described above is relevant to understanding consumption. This is an awkward leap in a 'hard' science paradigm which assumes that deconstruction automatically elucidates. Most anthropologists, however, accept that human behaviour can, as a rule, only be explained with or by its specific cultural context.

Previous work (Strang 1994, 1997) suggests that a practical and quite reductive view of values and behaviour can be gained through a systematic analysis of how they are expressed and constructed within each cultural form, and how the combination of these creates culturally specific 'modes' or patterns of environmental interaction and resource consumption.¹ This relies upon one of the most useful concepts linking anthropological investigation and other disciplines: the concept of value. The view proposed here (building on the work of eg. Munn 1986 and Myers 1991) is that modes of behaviour are, in essence, patterns of value: ie. the value located in particular ideas, things and ways of behaving. Once these values are made explicit it is feasible to consider, in broad terms, the dominant values of a society, group or individual, and perhaps to make some predictions about where this may lead.

This is an approach which lends itself to cross-cultural comparison, and therefore has considerable potential to assist international collaborative research. However it can also be applied within a single culture to consider different 'scales of context' and their particular effects on the behavioural trajectories of groups or individuals.

4.2. Practising contextual 'scales'

One of the common problems for every discipline involved in energy research is deciding upon an appropriate 'unit of analysis'. Should the unit be households (thus facilitating the measurement of actual consumption), individuals (enabling simple demographic or psycho-social segmentation), or societal (offering easier linkage with large scale economic models)? This is particularly problematic for the most quantitative approaches, but it is also an issue for social scientists.

Anthropologists have traditionally worked at a societal level and considered how smaller 'units' such as households, particular age, kin or gender groups interact with cultural 'norms'. Central to any anthropological analysis are the relationships between empirical data, collected from individuals and groups, and their cultural context - hence the necessary development of various theories of culture.

A coherent societal view is more difficult to achieve in large-scale, fragmented and more diverse societies. Greater prominence has to be given to the effects of widely disparate social and economic contexts, institutions, regional variations, local communities and all other the sub-contexts that make quite different contributions to behaviour.

In real terms, an individual inhabits a number of these sub-contexts, often simultaneously, but behaviour will vary according to which 'action framework'² or performative context dominates the decision-making at that particular time. Heuristically, each context can be described as a fairly self-contained element. The classic simile of the Russian doll is useful, in that it also describes the hierarchical nature of the relationship between the different contexts, suggesting that the larger contexts have a greater (or at least more long-term) influence.

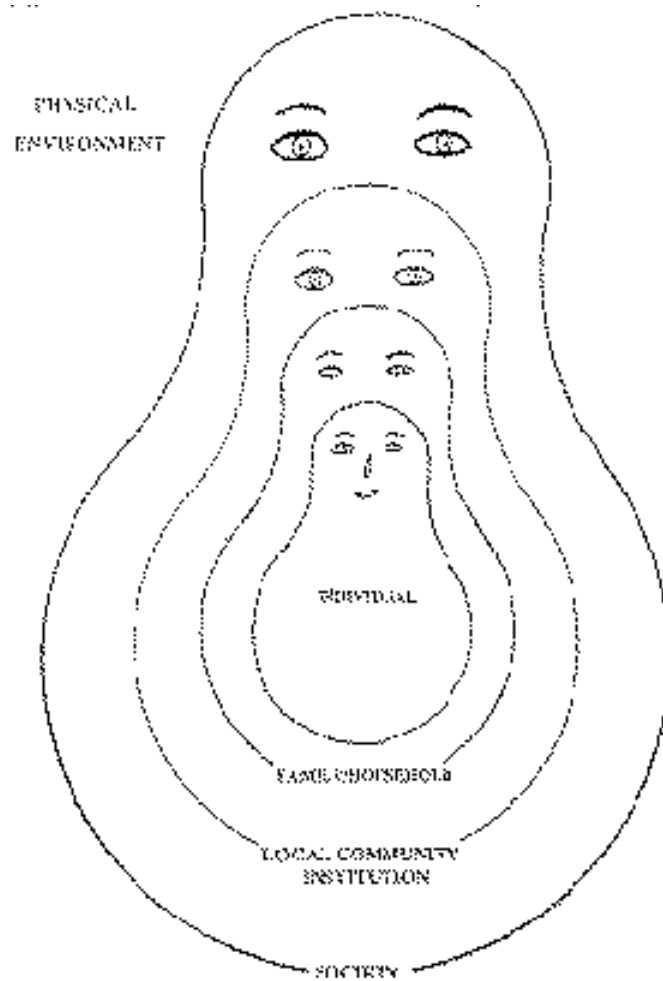


Figure 2. *The individual as socially constructed being (Strang 1996b)*

The concept of 'hierarchy' touches upon the fact that individuals are socially constructed, as Giddens has pointed out (1979), by:

... the fundamentally recursive character of social life and ... the mutual dependence of structure and agency ... The structural properties of social systems are both the medium and the outcome of the practices that constitute those systems. (1979:69)

Thus, although they are active participants in the process, rather than mere passive recipients, individuals' world-views are comprised of the beliefs and knowledge which are passed on inter-generationally; their values are inculcated according to cultural mores; their actions take place within the opportunities offered by their particular society. All of these will be further particularised by the most immediate social contexts they inhabit. There are various kinds of immediacy that are critical in determining energy behaviour: influences may be 'immediate' in that they are close and formative - for example early family socialisation, or they may be immediate in being the strongest influences upon the present. The individual has her or his own 'context' of experience which interacts with wider contexts: household, institution, local community, society.

Clearly there is a wide range of possible 'sub-contexts' that could be considered and aggregated or disaggregated in a variety of ways. Local communities and institutions are quite dissimilar in their dynamics, though sometimes similar in size; households and families reflect different social and spatial arrangements; ethnic groups, or people at particular income or educational levels, are also obvious potential 'contexts' of relevance. However, with the

needs of computer modellers and systems theorists in mind, only four major scales of context will be considered here:³

- The societal, cultural level
- Institutions/organisation and local communities
- Households and families
- Individuals

This approach therefore includes the most frequently neglected aspect of energy consumption - the institutional level and the practices and values that it encourages. This is a major omission in most analyses, and yet, in industrialised countries, business and industry is probably one of the most powerful influences of all upon cultural practices, including patterns of consumption, as well as being a major contributor to CO₂ emissions:

...most pollution is caused by organisational behaviour, not individual behaviour...the majority of energy use, releases of water and air pollutants, and many other environmentally destructive activities are traceable to the acts of corporations or Governments, not individuals and households. (Gardner and Stern, 1996:7)

Another major omission is the effect of institutions on the values and actions of individuals and households. As Lutzenhiser has pointed out, these links are quite critical:

Households and organisations do not operate in distinct spheres...an adequate societal-scale model of energy and behaviour should consider these linkages, and how they may change in the future. (1993:276)

The cultural 'forms' of a society: law, beliefs systems, economic practices etc. are reflected in each contextual scale. Like the ever smaller features of the Russian doll, institutions, communities households and individuals contain their own rules, practices, values and so on, like 'mini-cultures' reflecting the patterns of the larger, more influential ones and, to a lesser degree, acting recursively upon those larger contexts. Each context may therefore be said to replicate the same types of linear and lateral linkages between their own forms and others. Similarly, like the larger contexts, they represent a continual process of adaptation which both carries beliefs and values forward, and modifies them over time.

INSTITUTIONAL LEVEL	ORGANISATIONAL LEVEL	HOUSEHOLD LEVEL	INDIVIDUAL
Governmental policies, standards, directives	World Bank	Climate Change Conference, Kyoto Protocol, Copenhagen	Energy, Ecology, and Policy
Law, regulations	National legislation, standards	Technology	Energy, Ecology, and Policy
Business models	Corporate strategy	Automotive industry, Retail and Technology, etc.	Energy, Ecology, and Policy
Political organisations	Environmental NGOs, political organisations	Energy industry	Energy, Ecology, and Policy
Academic research	Research and development	Energy industry	Energy, Ecology, and Policy
Market organisations	Energy organisations	Energy industry	Energy
University, think tanks, large research centres, think tanks, etc.	Global education, research centres, think tanks, etc.	Energy industry, energy policy, etc.	Energy, Ecology, and Policy
Small business, family, etc.	Community organisations, etc.	Energy industry	Energy, Ecology, and Policy
Think tanks		Energy industry	Energy, Ecology, and Policy
Social organisations, think tanks, etc.	Research and development	Energy industry	Energy, Ecology, and Policy
Energy industry, research centres, think tanks, etc.	Research and development, energy, etc.	Energy industry, energy policy, etc.	Energy, Ecology, and Policy
Individuals, families, etc.	Community organisations, etc.	Energy industry	Energy, Ecology, and Policy

Figure 3. Some practical 'scales', their cultural forms, and their important relationships (Strang 1996b).

As the above diagram suggests, the patterns of each context may be summarised as a particular 'mode' of values and actions, and this approach can be extended to consider the energy use patterns of that particular mode.

In terms of encouraging long-term change, this construction of cultural dynamics contains the implicit assumption that the major 'flow' of influence will be 'top down', from society to individual. As indicated previously, the relationship is recursive, but although individuals are also formative of society, cultural momentum is such that the major flow of influence is generally the other way. This is a central issue, because one of the key problems for research into energy consumption and responses to policy lies in defining the causal chains between influences and actions.

Most energy research focuses on the decision-making of households and individuals. However, individuals' values and behaviour are a product of their interactions with other contexts. This assumption is integral to anthropological research, which regards individuals as representative of their culture and its particular organisational principles.

Once individuals and their behaviour are reframed as socially constructed it becomes possible to ask questions such as how are overarching cultural forms modified and reinterpreted within different contextual scales? For example, how are broad religious or scientific worldviews strengthened or undermined by particular families, social milieu or institutions? How might a societal economic mode be reflected in institutional, household or individual behaviours?

A useful way to consider this - particularly in a research area that focuses largely on households or individuals - is to ask how each contextual frame influences the 'mode' of the individual. This requires some thought as to how individual beliefs, knowledge values and behaviour are pushed towards particular tangents by the mores of larger contexts. As a person moves through these different contexts over time, they acquire new information, foreground particular values (in accordance with their role in that particular social space) and adapt or develop their beliefs and behaviours in response to the various influences offered by each context.

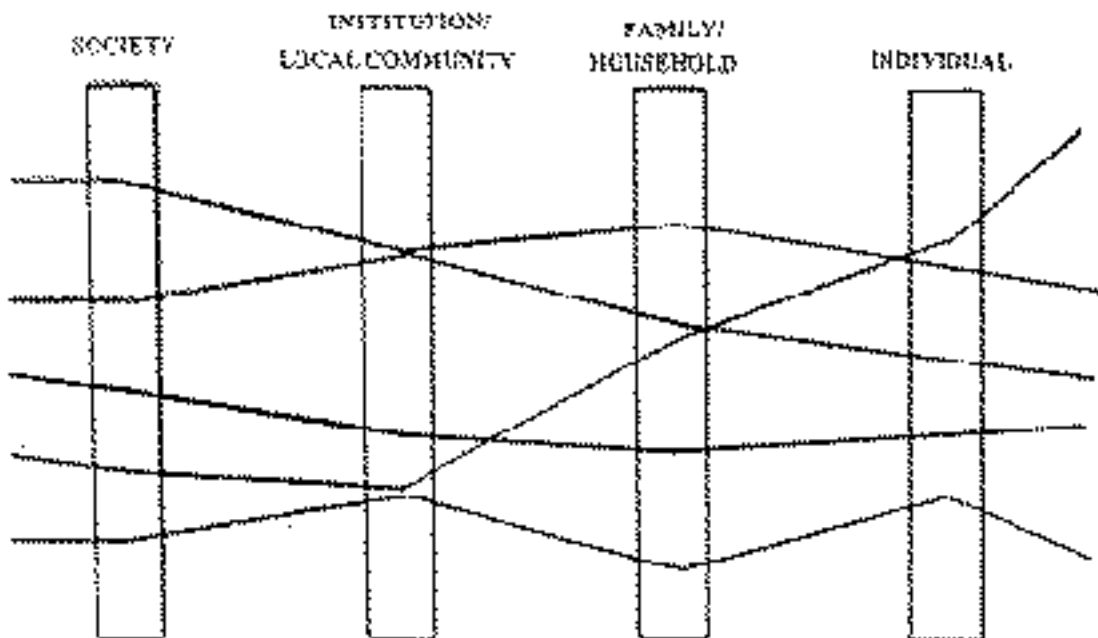


Figure 4. Tangents of values and behaviour are influenced by the experience, over time, of wider contextual frames (Strang, 1996b)

4.3. The application of cultural 'models' to policy

One of the advantages of attempting to make cultural dynamics transparent is that this should enable a more realistic analysis of the effects of policy initiatives. Policies may be described as the actions and representations of particular groups - usually those in positions of leadership - whose purpose is to persuade other groups to modify their behaviour in some way: to limit their consumption, buy (or produce) particular types of technology, eschew 'labour-saving' technologies which consume energy and so on. A 'reading' of the effects of policy instruments, like the reading of energy behaviour itself, needs to be re-contextualised and placed within the network of relationships which affect people's responses.

Some efforts were made to move towards this kind of analysis within the behavioural work of the DECADE team at Oxford University's Environmental Change Unit.

5. Case study

5.1. A Survey of Fridge/Freezer Purchasers

DECADE's early forays into the analysis of domestic energy use focused mainly on the issue of causality, and the relationship between underlying factors and individual action (see Strang 1994, 1995a). This led to the design of a survey to consider people's responses to the introduction of the energy label introduced in the UK in January 1995. The survey and some proposed modelling methods were described briefly in DECADE's Annual Report (- Strang 1995) and at the 1995 ECEEE conference (Strang and Lane 1995) and the survey results are discussed more fully in a subsequent report (Strang 1996a). The major emphasis here is to give just a few examples of the kinds of data which could be located within the theoretical framework described above.

5.2. Methods

Though DECADE's emphasis on computer modelling made it necessary to employ particular- ie. largely quantitative - research methods, considerable effort was made to stretch these to encompass more complex socio-cultural issues. The survey design was therefore systematic in two respects: it covered a 'sequential' series of issues in order to look for causal factors - ie. connections between background influences, knowledge, attitudes and values, actual energy use/purchasing behaviour and policy receptivity. It also attempted - though it must be said that this was quite constrained by the methodology - to consider a holistic array of issues reflecting the various aspects of culture defined in the theoretical framework described above.

The requirement for quantitative data (and therefore a larger number of informants) meant that only a limited time could be spent with each interviewee, so only one or two questions touched upon each issue. However, this lead from more complex qualitative approaches permitted a greater breadth of investigation, and at least a preliminary exploration and inclusion of socio-cultural issues which have hitherto been almost completely ignored in energy research. These included, for example, factors such as length of residence and community involvement, early socialisation, various concepts of Nature, and relationships with institutions, and how these factors affected levels of environmental concern and willingness to conserve energy.

The main survey covered 100 households in Oxfordshire drawn from respondents to a leaflet placed in cold appliances at the point of sale. Considerable efforts were made to find a demographically representative sample, although the focus on fridge/freezer buyers meant that some age and income groups were under-represented. Brief telephone interviews were followed by self-completion questionnaires and then structured interviews, resulting in 164 completed questionnaires and 100 interviews. Through a collaboration with the Lothian and Edinburgh Environmental Partnership (LEEP) a further 50 households were added to the sample, with 59 questionnaires and 46 interviews.

As well as examining responses to the energy label, the survey considered a wide range of data. These were selected according to several criteria: if they had been shown by previous research to be relevant; if they represented

areas in which the DECADE team had access to existing data, and if they seemed to have the potential in terms of tracing relationships between influences and actions. They included:

Background data. Demographics: age, gender, educational qualifications, income, occupation. Household characteristics: tenure, length of residence, dwelling type, household size, appliance ownership. Socio-cultural factors: early socialisation, attachment to local community, religious beliefs, worldview, concepts of nature, family dynamics, roles/identity.

Knowledge. Environmental literacy: awareness and understanding of general environmental issues, energy issues, technical knowledge, household management skills.

Attitudes and values. General environmental concern, prioritising of materialism and economic growth, faith in science and technology, relationships with wider communities, concepts of individual responsibility for protecting the environment, attitudes to energy conservation, other environmental activities, appliance purchasing criteria.

Action indicators: 'Green' behaviour (energy saving, recycling, purchasing of environmentally friendly products, behavioural modifications), environmental activism, efficiency rating of fridge/freezer purchased.⁴

Policy receptivity: responses to actual policies (eg. energy labels) and stated responses to a range of hypothetical policy instruments.

5.3. Data Analysis

The majority of these data were quantified (in many instances with a simple ranking system) and subjected to a statistical analysis. The major objective was to consider a range of indicators of environmental concern, 'green' behaviour and policy receptivity, and to look for the links - ie. the important correlations - between these and 'influential factors'. This endeavour and a qualitative analysis of the data were written up in a report focusing on responses to the energy label (Strang 1996a).

6. Results

Although the data could often only hint at important relationships, the inclusion of a range of socio-cultural issues laid some foundations for a systemic view of causal factors and values. This more complex picture is not easily summarised, and undoubtedly still requires considerable analysis and development. There is also a clear need for more in-depth data, which could only be collected through proper ethnographic methods. However, it is possible at this stage to make a very rough sketch of some of the key issues that emerged from the research. These can be organised according to cultural forms in accordance with the 'model' provided above.

6.1. Worldview

Though it is impossible to discuss the complex issues of 'worldview' sensibly in a couple of paragraphs, it is worth flagging this area of investigation, as it is clearly central in determining people's environmental beliefs and values. There are two dominant explanatory paradigms to be considered: a Cartesian deconstruction of the material world that underpins scientific analysis and contains implicit values about human interaction with the environment; and a religious explanation which contains an explicit array of values and promotes 'stewardship' of the environment. Each is maintained by particular institutions and disseminated via a range of media.

Individuals and households have their own 'take' on these (and other) explanations according to their particular societal, community and institutional trajectories. Much depends upon their social placement and education and, in this most central of factors, early (familial) socialisation is critical. Though this is a crude simplification, the respondents' comments (illustrated in the italicised quotations that follow) suggest that individual concern for the environment is encouraged by two major types of trajectory. One is through a behavioural 'trajectory'

which has a strong emphasis on social and environmental responsibility - often a strong religious or spiritual set of ideas:

[Nature] is God's creation, therefore we have a duty to look after it.

The other 'trajectory' involves education in (or exposure to) scientific explanation to a level at which people feel that they understand ecological systems and energy issues sufficiently to have some ability to deal with them. Part of this involves learning skills which enable good environmental/energy management and thus enable '- green' behaviour:

The more we know about it, the more we can sort it out: like CFC-free aerosols. We can insulate your house so that you don't have to use as much energy.

6.2. Law/Moral issues

Though many of its messages are implicit, legislation expresses a particular value system and is thus a powerful influence on behaviour when reinterpreted at each context level. A key issue for many people in the UK is whether environmental legislation is applied 'across the board' or whether they are being asked to make changes or sacrifices while others do not. Considerable confusion about who is actually responsible for environmental care seems to be caused by the perception that there is little social consensus about these issues:

Government must act - industry won't unless regulated.

The Government should lead the way - it has to be national Governments and maybe more, from outside, from Europe for example.

Some respondents recognised that much depends upon the relationship between different scales of context:

I think it has to be the industries: they would do something about it if forced by legislation or public pressure.

It is only the Government who can do something, but it only the people who can make the Government aware of what they want.

Implicit in some remarks is the feeling that societal modes of interaction will not shift unless each context level is involved in creating changes:

The difficulty with these things is that people think their little bit doesn't do anything.

We are all responsible: the scientists for their brains, the Government to enforce it and we, the people, need to do our bit as well.

Individuals and households draw their models and evaluations of these issues from larger institutions and - in a democracy at least - will not respond to dissonant messages which tell them 'do as we say, not as we do'.

It has to be the responsibility of Government... I don't think commerce is going to do anything unless it is forced to - the polluter has to pay.

The data also suggest that people feel somewhat overwhelmed by their perception of environmental problems, and their inability, as individuals to carry their responsibilities successfully without wider societal backing:

I could write to my MP and local Councillors... I could go on demos, and I could lobby. I could pick up litter in the street. I could find information on the things I am interested in. I could join a group, 'cause people are more effective in groups. [But] it might take years to work - like water against a stone'

6.3. Economics

Much as been written about 'costing' the environment, and the degree of influence offered by the potential for saving money through energy efficiency. It may be more useful, however, to consider the values that are expressed by particular economic modes. The economic mode that prevails in European nations contains values that fundamentally conflict with conservation and sustainability. Growth, we are continually assured, is good. Commercial institutions uphold and indeed intensify this value, and individuals and households are encouraged to reflect it by aspiring to 'higher' standards of living and greater affluence expressed in material terms. The flexibility of a cash (as opposed to a bartering or reciprocal⁵) economic mode also enables much great individuation of resource ownership and a commensurate loss of collective stakeholding on a manageable scale.

The conservation message is therefore swimming against a tide of messages that encourage consumption at the expense of 'the commons'. It is hardly reasonable to expect households or individuals to adopt economic practices which reflect completely different values from those promoted within larger contexts. However, where particular trajectories have brought them into contact with alternatives, people do draw upon other models which, for a variety of reasons, they see as being more desirable. This may be a historical model: older people, for example, may recall more frugal and sustainable patterns of consumption:

There was some emphasis about not wasting things - I can just remember rationing on food, electricity and water. You always turned taps off, you always turned the electricity off and it's actually a habit that I think I've always had.

In many instances respondents explained their environmental values by drawing on their perceptions of other cultures:

I think the Red Indians got it right: they believed they were part of Nature... they saw themselves as part of a cycle.

In some cases materialism was rejected in favour of other qualities of life, or on the basis of social responsibility, thus drawing on more reciprocal and socially cohesive models. Some of the strongest correlations in the statistical analysis were between 'post-materialism' and environmental concern, activism, green behaviour, concern for the community and receptivity to conservation policy instruments.

This suggests that particular trajectories offer people alternative models and values, and that certain combinations of experience encourage them to reject or modify the dominant societal mode.

6.4. Social and spatial organisation

The 'mode' of social organisation in the UK, as in other European nations, has long been characterised by increasing fragmentation, containing, for example, distinct social, regional and ethnic divides. However, the most important trend - particularly with regard to energy use - has been towards greater geographic mobility for individuals, encouraging the dissolution of local communities and smaller, more isolated family units. Individuals are now confronted with an array of possible roles and identities and, as matter of course, juggle membership in a variety of contextual scales. They are, simultaneously, householders, extended family members, participants in local community or social groups, professionals, members of ethnic, regional or national groups, and so on. Each of these 'persona' inhabits a different scale of context and is subject to its particular forms. Household and individual energy use reflect trajectories through these different frames and exposure to their different sets of values and information.

An important issue revealed by the DECADE survey was that of community membership and its effect on people's willingness to conserve energy and their responses to a range of policy instruments. There was a strong correlation between involvement in the local community and environmental concern and green behaviour, suggesting that where people know and feel involved with those around them, there is a greater incentive to care for common resources:

[Being involved] stops you from feeling alone. It allows you to borrow from each other. I am sure that it must reduce crime, 'cause people respect each other's property more.

We are all friends, and we look in on neighbours' property when they go away.

Clearly this kind of involvement has to be enabled by work patterns, relationships with wider institutions and to some degree security of tenure and the ability to invest - socially and perhaps financially - in local communities over time. This raises the question of the importance of stakeholding, which is of course a central political, social and economic issue. Analysis of the DECADE data also suggested an important relationship between stakeholding - ie. owning property/land, and feeling part of communal decision-making and responsibility for environmental care.

6.5. History and identity

Though history may not be a processual cultural 'form' in the same way as those described previously, it is an important part of each of the contextual scales that people inhabit. It provides a narrative of powerful images and experiences which are carried by historical momentum into the present and, potentially, the future. It is integral to the physical environment that people inhabit, but it also provides, through various media, an array of cultural imagery from which values and social identity are drawn. People integrate their personal history in constructing their environmental values and resource management:

My father's weekly wage was three and six... If it was a bit chilly - 'shut the door, keep the heat in', Mum used to say it all the time... I'm a terror for shutting things off.

They also draw on cultural images of community and reformulate those in modern terms, and they cite historical events which have sparked concern for the environment:

The first thing that impinged on me was the dropping of the atom bomb... In the early 1970's there was a power strike, and that involved us saving energy.

Shared history runs like threads through each context, and each particular trajectory gathers these and incorporates them as a set of influences. When these threads are severed by research methods which isolate particular contexts, it becomes very difficult to see why an institution, household or community holds particular values and is habituated in particular ways.

There is a variety of temporal frames to consider. Some historical images achieve weight because of their longevity: for example, the beliefs, actions and values perceived to have been integral to a particular national identity for centuries carry considerable authority. There are also the more immediate temporal frames of individual experience which are influential because they are habituated and central to personal identity.

As Greer has shown (1995), the issue of identity is critical in defining energy behaviour, and this is certainly an area which would benefit from more investigation and linkage with wider social dynamics.

6.6. Representational systems and knowledge

There is a plethora of representational systems - art, the media, oral discourse, material culture etc. - which depict, influence and thus contribute to human-environmental relations and environmental values. The DECADE survey focused mainly on trying to define which sources were important in informing people about issues, and what they therefore understood about environmental problems such as global warming, and the technical aspects of energy management. The survey demonstrated a link between people being well informed on these and other environmental matters and having sufficient concern to carry out some green behaviours.

It's hard for people to make decisions if they don't know how much energy something uses. If you are constantly made aware of it, you then take it into account.

Something that came through strongly in the survey results was the importance of early socialisation: the learning that takes place at formative life stages:

My parents were strongly anti-nuclear and I got a certain amount of that kind of thing.

In my teens I joined the World Wildlife Fund - that made me aware of animals.

Such early influences are foundational to social identity and, in order to avoid cognitive dissonance, require affirmation. They therefore tend to push people onto particular trajectories which may later influence which other contextual frames they choose to inhabit, thus gathering similar, affirmative values and beliefs.

However, early socialisation - though critical - is not by any means wholly deterministic. People learn constantly and often adapt their beliefs or foreground particular values in response to their current interactions. They are constantly being 'socialised', and this, indeed, is the purpose of policy instruments aimed at modifying behaviour. The likely effect of such policies can be gauged more realistically when placed alongside all of the other representations that people receive in the various contexts through which they move.

6.7. Material culture/technology

In recent years anthropologists (eg. Hodder 1989 Morphy 1991, Tilley 1990), have provided a rich literature on material culture as a representational system, and it is clear that the 'form' of material culture and technology has many powerful but subtle influences. It creates a physical environment which socialises people into particular energy use habits. It carries into the present built environment previous, habituated ways of living. Perhaps most importantly it bears a stream of symbolic messages about social identity, status, affluence or poverty, 'comfort' and aesthetics.

These influences can only be elucidated through an understanding of the processes expressed by and through material culture, and its relationship to social and economic organisation, belief systems and values. In this sense it can be seen as the concrete expression of all the other cultural forms described above.

A small example of the important links between changes in socio-spatial organisation and material culture is offered by the results of the increasing autonomy of small family units. This has obvious technical implications in terms of energy consumption, creating not only much higher levels of appliance ownership per capita, but also encouraging more autonomous consumption patterns in other ways - for example non-local bulk food shopping requiring car usage and more storage facilities. More subtly, it is a pressure that reduces the inter-dependence and cohesiveness of communities and thus, as we have seen, people's concern for 'the commons'. It is these kinds of links between cultural forms that need much closer examination.

7. Conclusions

It is difficult, in so very brief a sketch, to draw a comprehensible picture of a complex cultural model and of the inter-relationships between what are, in themselves, multifaceted cultural forms. However, what begins to emerge - it is hoped - is at least a faint image of the processes that connect all these different aspects of culture and the various contextual frames in which they are expressed.

A greater understanding of such processes, and the development of more accessible ways of representing them, would encourage a radical rethink of much of the research focusing on issues of energy consumption, linking this with much of the (already well-developed) work on other forms of consumption (eg. Miller 1987). The results of the behavioural research described above suggest that an appreciation of cultural dynamics is as vital as the collection of concrete technical data. There are some large questions here for members of organisations such as ECEEE. Is it not essential to have models that reflect disciplinary expertise in the area of culture, and deal with its complexities realistically? Without such socio-cultural models, how can isolated chunks of data - however concrete - provide more than limited description? How willing are energy researchers to deal with - ie. locate their data in - denser, more abstract models that attempt to provide an explanatory framework? This may mean more

text and fewer graphs: will quantitative researchers, and - most crucially - policy makers, encompass and make use of these different kinds of outputs?

By providing models of cultural processes and translating cultural complexities into more familiar and accessible forms, anthropologists and other social scientists can enable this exchange, but, in essence, it relies upon a real shift in emphasis in the field of energy research.

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Notes

¹ There are echoes here of Ruth Benedict's assertion that each cultural group may be said to have a coherent and definable 'personality' (1932).

² See Guerrier *et al* 1995: xiii. There are also various theoretical works on performance which are relevant here, for example Goffman (1971), Parkin (1996).

³ These scales are fairly arbitrary, though they do correspond to the 'units' for which there are some available data on energy consumption, beliefs and values etc.

⁴ Respondents were also asked about their motivations for some of these indicative actions and about their view of the links between energy saving and environmental issues.

⁵ Unlike traditional exchange systems, a monetary economy is not closely tied to - and thus stabilised by - a web of immediate social relationships and obligations, and the collective ownership and management of resources that usually characterises such economic modes.