

What can energy efficiency policy learn from thinking about sex?

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1. SYNOPSIS

This paper critiques underlying assumptions concerning behaviour and change in the energy efficiency discourse and suggests new directions which account for social contexts and relations.

2. ABSTRACT

It should be obvious from the title that the purpose of this paper is to provoke new thinking, and that the object of the provocation is firmly anchored assumptions concerning behaviour and change. When it comes to the domain of energy efficiency policy, simplifying assumptions abound; about human behaviour, theories of social and technological change, and the workings of markets. The policy discourse which embraces these assumptions has demonstrated remarkable intransigence in the face of persistent evidence of flaws over its 25 year history. The claim of conference title that “energy efficiency can get us there” (to meet the climate challenge) is only partially correct. The cold facts are that in spite of the energy efficiency efforts of the past decades, energy use has continued to increase in OECD countries. Lack of commitment is only part of the problem and more of the same will only keep us from falling further behind. A renewal of the social theory which informs energy consumption and conservation is called for in the face of environmental challenges. This paper makes a case for the existence of a the dominant discourse in the overlapping domains of energy efficiency policy and applied research and points to weaknesses and anomalies. It argues that conceptualisations of human action have been dominated by the assumptions of neo-classical economics, with its methodological individualism and economically rational actors. There is an urgent need for the development of a more robust theory of consumption, one which incorporates social relations and cultural context, as well as perspectives on individual agency and social change. The paper will draw attention to important perspectives which have been absent or marginalised in the energy efficiency discourse, including the acknowledgement that comfort and other energy services are socially constructed. It argues for a replacement of ‘individual rationality’ with a perspective which accounts for how individuals create meaningful lives within a matrix of social relations which both enable and constrain behaviour.

3. INTRODUCTION

Oscar Wilde is credited with saying that truth is rarely pure and never simple¹. Yet when it comes to the domain of energy efficiency policy, simplifying assumptions abound; about human behaviour, theories of social and technical change, and the workings of markets. At the core lies the underlying assumption that consumption is determined by autonomous individual consumers², and that these individuals:

- Exercise a particular form for economic rationality
- Have non-conflicting motivations
- Act as fully independent agents

In the quarter century in which much of energy policy has rested on these assumptions, energy use has increased in Europe and North America. In spite of this, there seems to be little serious reflection in the energy community on past failures or future renewal of the ways we think about consumption and change. As the need for rapidity of change in the ways we use energy become more apparent, the necessity for a debate about assumptions and

underlying theory becomes more urgent. In this paper I point to weaknesses and anomalies related to underlying theory and argue for the need for new perspectives which accommodate social contexts and relations.

I should make it clear at the outset that this paper is not intended as a critique of economic theory per se. There are a number of strands of economic theory which are critical of the assumptions of neo-classical economics. Nor is the intention to give the impression that the social sciences either speak with one voice or have all the answers. There is, however, a considerable pan-disciplinary debate on consumption, social reproduction, socio-cultural change and individual agency which has not penetrated the central debates surrounding energy efficiency. This paper opens basic assumptions for scrutiny and provides perspectives from the larger debate.

The allusion to sex in the title is meant to attract attention and to provoke. “Thinking about sex” could be used to conjure up a number of issues relevant to the way we conceptualise energy consumption, including fantasy, creativity, aesthetics and so on. A glance through print media and the way sex is used to sell everything from perfume to motor parts ought to suggest it as a concern for any policy arena concerned with influencing consumption. However, the intention in this paper is to use sex to make yet another point based on recent work on sex and gender. These reveal that not only is gender a socio-cultural construct, but that sex is as well. The point to be developed is that the things we use energy to achieve - a comfortable home, suitable lighting, clean clothes, tasty food - have also been implicitly assumed in models of consumption to be generic and physically determined. The sex analogy is used to open the energy efficiency discourse to the social construction of these energy services and to the resulting new set of questions and issues which follow.

The structure of the paper is as follows: chapter 4 sets out to describe and evaluate the mainstream energy efficiency discourse, its contributors and development and to point to problems with dominating assumptions; chapter 5 discusses the importance of acknowledging social structures and relations in underlying theories of agency and change; chapter 6 presents the results and arguments on sex; chapter 7 lays out some of the new areas of inquiry which follow; chapter 8 contains the conclusions.

4. THE ENERGY EFFICIENCY DISCOURSE ON BEHAVIOUR AND CONSUMPTION

In examining the assumptions which form the foundation of energy efficiency research and policy, I have found it useful to use Michel Foucault’s concept of discourse: “a system of representation which regulates the meanings and practices which can and cannot be produced.” (paraphrased by Smith 1998:254). Smith (2000) suggests that

the unifying characteristics of a discourse is its capacity for self-reference and self-regulation. Discourses are effective to the extent that they provide a framework within which meanings can be regulated. They attempt to shut down the possibility of alternative interpretations by drawing upon the stock of common sense knowledge which has come to be accepted. Discourses regulate the productions of meaning with reference to an established set of textual sources and with institutional practices through which we classify.

In various books and essays, Foucault examined topics like sexuality, psychological normalcy and criminality, focusing on assumptions, claims and the processes through which claims were made. He exposed underlying assumptions and showed that normative ideas about criminality, mental health and sex were all products of hegemonic discourses. His analysis of the discourse surrounding sex is sketched out in chapter 6.

In this section, I use Foucault’s approach to argue that in the domain of applied research and policy, there is a “dominating” energy efficiency discourse, and that it rests on a foundation borrowed from neo-classic economics. The discourse produced is consistent with Smith’s characterisation above: it has a framework within which meanings are regulated, a stock of common sense knowledge which has come to be accepted and a set of textual sources which produce and reproduce the discourse. In what follows, I look more closely at the development of the representations, meanings, and practices.

The framework and contributors

The defining events for the creation of the discourse were the oil price shocks of the 1970's. The intellectual framework evolved in the regions of overlap between energy policy 'analysis' (mainly macro-predictive models and program evaluation), applied technical research and economics. The discourse has varied somewhat by region (North America, Europe, Japan); over time; and by topic, but fundamental approaches have been shared.

The contributors to the discourse are peculiarly heterogeneous. In its early stages in the late 1970's and in its latter stages in the 1990's, the discourse overlapped with, or was tangential to environmental discourses on resource depletion (mainly in the early stages) and climate change (mainly in the latter stages). But the dominant contributors throughout have been governmental and intergovernmental energy policy institutions, themselves strongly tied to national and international economic interests. Both have relied on consultants, contract research organisations and quasi-governmental organisations such as the national energy laboratories in the United States to provide analytical perspectives. These individuals and organisations have been periodically called on for evaluations of policy and programs, for analyses of new trends and for propositions of new measures for achieving energy efficiency or conservation.

The energy-utility industry has also been a significant contributor. Great pains were taken in the 1980's to rationalise the turning over of responsibility for stimulating energy conservation to energy utilities. Many OECD governments mandated Integrated Resource Planning (IRP), which required utilities to make and periodically update a strategic energy plan, in which energy conservation (in the form of specific programs like installation of efficient lighting, thermal insulation, efficient shower heads, etc.) was evaluated as a potential new source of energy. Energy Utility-based IRP was rather abruptly made obsolete in the early 1990's, with a wave of deregulation of energy utilities in North America and Europe and the establishing of so-called competitive markets for electricity, which according to its proponents, would self-regulate energy conservation.

To complete the institutional landscape, there have also been contributions to the discourse from intergovernmental and international organisations such as the International Energy Agency (IEA), an arm of the OECD located in Paris, and recently from the Intergovernmental Panel on Climate Change (IPCC), founded in 1988, and the Commission for Sustainable Development (CSD), which entered the energy debate on the heels of the Rio conference in 1992. The international NGO's like Worldwatch Institute have had some marginal input to the discourse, mainly in the form of supplying information on increasing energy use and its environmental consequences, and in lobbying for greater political attention to energy efficiency and renewables.

The environmental discourse has only tangentially impinged on this energy efficiency discourse. When the environmental aspect has been drawn in, it has usually been channelled through the same discursive tools, such as "right price", i.e. a price which reflects environmental externalities. There has also been an institutional separation of energy and environment in government organisations at all levels, including national ministries. With a few exceptions, energy and environmental policy organs are almost always separate. Energy is usually grouped with industry or trade. In recent years the climate change issue, with its direct links to energy, has begun to reinsert the environment into the energy discourse.

The stock of common sense knowledge

Engineering scientists were influential in shaping the thinking surrounding energy consumption and conservation. They drew political attention by pointing to "energy savings potentials" associated with diffusion of devices and insulating materials (refrigerator, washing machine, air conditioner, etc.). Versions were commercially available which were X% more energy efficient than the average in use. Further, there were new technologies under development which were Y% more efficient. The replacement of existing devices would lead to efficiency gains approaching X% in the short term, Y% in the medium term, and much more in the longer term as ever more efficient technologies made their way from the minds of engineers, to the retail stores and into homes. Implicitly assumed in the formula was the rational economic individual or firm who would be interested in devices with lower energy running costs. The higher purchase price was a problem, but it was thought that people and firms would see it in their economic self interest to purchase products which would pay for themselves through saved energy costs anywhere from a few months to a few years from installation.

There has been repeated evidence that people and firms act in ways that this formula predicts (see Lutzenhiser 1993). Some of the clearest examples came from the important domain of thermal insulation for existing buildings. Costs of retrofitted thermal insulation are recuperated anywhere from a matter of months to three

years in older dwellings, and yet installation was very slow, even in programs which offered zero interest loans, subsidies, and give-aways. Weatherstripping around doors and windows provided one of the most perplexing anomalies. It costs next to nothing (less than 5 Euro in the United States) and can lead to reductions in heating (or cooling in warm climates) costs of up to 30% per year. Yet, neither people nor firms installed weatherstripping in the numbers predicted, even those who were well aware of its potential economic benefits (Wilk and Wilhite 1986).

The response to anomalies was the laying out of a set of problems or barriers formulated in the same vernacular (if you are a hammer, every problem looks like a nail). Consumers were not acting rationally because they either lacked information (awareness of the existence of these efficient devices and a lack of understanding of their economic advantages), or lacked money to cover the capital costs. As a result, information-provision has been a favoured policy instrument throughout the history of the discourse. The second problem, the “investment capital” or “discount rate” problem, was a concern of the energy conservation effort in the early 80’s. Rebates, cheap loans, give-aways, and so on were central policy instruments (Hausman 1976; Gately 1980; McMahon and Levine 1982; Meier and Whittier 1983; Chernoff 1983). In the 1990’s, this approach gave way to “market forces”. Markets, which consisted of those same rational, autonomous actors, would, if allowed to operate freely, take care of the problem, as prices, reflecting changes in supply and demand, would bring energy efficiency to the forefront. “Market barriers” had to be dealt with, the most important of which was, again, conceived of as lack of information³. An alternative to the market-based approach was to work “upstream” with “command and control” type mechanisms. These aim at increasing the efficiency of choice alternatives.

The contribution of social science to the discourse’s “common sense stock of knowledge” has been limited, coming mainly in the areas of information development (or refinement), or on removing other barriers conceptualised in the discourse. These contributions have been important in fine tuning the machinery, but do not go to the heart of the engine which has produced and reproduces reified assumptions about individual agency and social change.

Textual sources

The main domains of expression and interchange have been conferences and their proceedings, as well as certain international journals, including *Energy Policy*, published in the United Kingdom, *Energy and Buildings* in the United States and *Energy the International Journal*, published both in Holland and in the United States. The policy manifestations of the discourse have come in the form of pan-national, national and local laws, directives and ‘white papers’. Influential texts in energy efficiency over the years, such as those by Goldemberg et. al. (1988), the authors of which provided much of the scholarly input to the World Commission on Environment and Development headed by Brundtland (WCED 1987), and more recently those of Weizsäcker et al. (1997) and Hawkin et al. (1999), all have at their core the “common sense stock” of economic rationality and technical optimism.

The ‘energy user’ as imagined in the discourse

The assumptions of neo-classical economics were imported into the energy discourse at the outset. Much in the same way that immigrating groups tend to maintain dialects reflecting those that existed at the time of the migration, these assumptions have been impervious to developments in the academic arenas from which they were borrowed. In economics, there have been a number of internal critiques and developments after Friedman (1953) set the neo-classical agenda. Academic economics today is a diverse arena consisting of variations on Marxist economics (see Hunt and Sherman 1981), the revival of Keynes state interventionism and monetarism (see Vane and Thompson 1982), and institutional economics (Hodgson 1989), to name a few. Hodgson and his followers recognised the weakness of the individualistic assumptions and have called for an acknowledgement of relations and “networks”. There have also been many assaults on the assumptions of positivist economics from social anthropology and sociology. The objects of attack have usually been individualism and market models in which “individuals who deal with each other at arms length” (Carrier 1997: 8). Based on work in Ghana, economic anthropologist Keith Hart showed that fundamental ideas concerning the ways that markets work were flawed. The things which were most important, social relations and networks, were the very things which were missing from the model (Hart 1971, reprinted in Grinker and Steiner 1997:138). His analysis of the “informal economy” has been very influential in subsequent development theory.

None of these debates have reached the inner sanctum of the energy efficiency discourse. When it comes to both consumption and energy consumption, neo-classical economics remains “the general model of social order

through which the consumer is defined” (Slater 1997:41). Facts about societies and social phenomenon are explained in terms of facts about individuals. Lawson (1997:159) expresses it this way: “Economist’s regard it as sufficient to characterise the economy as constituted by the interactions of numerous pre-given, independent, atomistic, economic individuals and the actual states of affairs (structures of preferences and beliefs, asset distributions, inputs and outputs, prices and quantities) which their interactions presuppose and/or are said to bring about.” Whether at the individual or macro level, “economic events and states of affairs are always to be explained by deducing them from, and only from conjectured principles governing the behaviour of actual individuals, or, as in macro economics of idealised ‘average’ individuals, and ‘descriptions’ of their situations.”

The existential question of the imagined consumer is “Given limited means and unlimited desires for goods, what pattern of spending will maximise my satisfaction? (Slater 1997:43)” This is problematic first because an assumption about “utility maximisation” adds nothing to our knowledge of why an individual bought or consumed something or what their motives or needs were. “Utility, to reiterate, is the core of a formal concern with how we calculate in pursuing our interests rather than a substantive concern with what those interests are or how they came to be (Slater 1997:43).” Further, this view of rational action assumes omnipotent oversight. It presupposes “that the actor has clear and distinct insight into the ends, the means and the secondary results, involves rational consideration of alternative means to the end, of the relations of the end to other prospective results of employment of any given means and, finally, of the relative importance of different possible ends (Schultz 1972:215).” Schultz ironically characterised these assumptions this way:

... the puppet and his artificial consciousness is not subjected to the ontological conditions of human beings. The homunculus was not born, he does not grow up, and he will not die. He has no hopes and no fears; he does not know anxiety as the chief motive of all his deeds. He is not free in the sense that his acting could transgress the limits his creator... has predetermined. He cannot therefore, have other conflicts of interests and motives than those ... imputed to him... He cannot choose, except among the alternatives the social scientist has put before him as standing to his choice (1972:41).

As Chapman and Buckley (1997:242) put it, “A non-economist might well feel that representing reality as a distortion of a non-existent and purely hypothetical perfection was logically absurd; but one can scarcely deny the power of much economic analysis conducted from this point of view.”

These assumptions at the heart of the energy efficiency discourse render social context invisible. It ignores the fact that:

Any individual is situated in a range of positions, with associated, perhaps contradictory, real interests, as well as other needs and motives. Associated with the positions in which any individual is located will be a range of rules to draw upon, obligations to fulfil, structures of power to utilise and be influenced by. Many such social structures will be inadequately or falsely understood. Most of the skills utilised, modes of conduct performed, will be tacit⁴. Action in such a context is a continuous stream, continuously monitored, and rarely rendered available to discourse (Lawson 1997:178).

5. THE MISSING DEBATES SURROUNDING SOCIAL STRUCTURE, INDIVIDUAL AGENCY AND CHANGE

Marcel Mauss, who had a strong influence on both 20th century anthropology and sociology, is reputed to have said that there were only two things that needed to be worked out to be human: self-reliance and learning to belong. According to Mary Douglas (1990:xi), Mauss “tried to keep a delicate balance between reproaching utilitarianism for overlooking that humans are social beings and reproaching socialism for overlooking the demands of the individual.” Social theorists Roy Bhasker and Anthony Giddens have contributed much to the development of a theory of human action which accommodates both structure and the individual. Giddens defined the exercise as one of the “Central Problems in Social Theory” in his influential book published in 1979. Bhasker is considered to be the godfather of critical realism, which is based on the credo that “society does not exist independently of human activity (the error of reification). But it is not the product of it (the error of voluntarism). . . Social systems are both enabling and coercive (Bhasker 1989:36).”

Bhaskar's perspective attempts to identify the structures and mechanisms through which social events are understood. By structure is meant positions, rules or relationships which endure over time and space. Social structure influences action, and because it makes a difference to action, it must be real. Structures do not determine action, but rather create tendencies or pathways for action. Social structures endure and social life is not continuously reinvented by individuals with complete freedom to choose. Because structure pre-exists action, it cannot be regarded as the mere creation of individuals. On the other hand, structure cannot be regarded as fixed, as externally coercive, and so reified. If the human race dies out, so does social structure. As expressed by Lawson,

Human intentional activity does not *create* (original emphasis) social structure for, to repeat, the latter is presupposed by such activity. Instead individual agents draw upon social structure as a condition of acting, and through the action of individuals taken in total, social structure is *reproduced* or (in part at least) *transformed*. Equally, though, the social structure cannot be reified. Only at the moment of acting can it be interpreted as given to any individual...The picture that emerges, then, is one of largely unmotivated and only partially grasped social reproduction. Individuals draw upon existing social structure as a typically unacknowledged condition for acting, and through the action of all individuals taken in total, social structure is typically unintentionally reproduced. Social structure in general is neither created by, nor independent of, human agency, but rather is the unmotivated condition of all our motivated productions, the non-created but drawn upon and reproduced/transformed condition for our daily economic/social activities" (1997:169).

In anthropology the interaction between social structure and individual agency has been important to both theoretical debates on the causes of behaviour, and methodological debates on what should be the appropriate object of analysis. British structuralists like Edmond Leach and Mary Douglas were concerned with the distinction between a social "base" and its "cultural" reflection, drawing on the thinking of Emil Durkheim and his emphasis on myth and symbols as central elements of cultural reproduction. A quite different perspective was put forward by structural Marxists (such as Maurice Godelier, Jonathan Friedman and Marshall Sahlins), who located 'determinative forces' within certain structures of social relations in production. Ortner's (1984) important review of anthropological theory, criticised structural Marxism for its mechanical view of change, but praised it for inserting social structure and relations (what she called a "powerful sociology") back into an anthropology which had become overly concerned with ideology and culture. Clifford Geertz (1980:168) led an assault on structuralism throughout the 1980's and early 1990's, arguing from his post-modernist perspective for a view of society not as an "elaborate machine or a quasi-organism" but as "a serious game, a sidewalk drama, or a behavioural text." From this perspective, "the actor's point of view"- of how actors formulate needs and desires, plans and schemes, modes of working in and on the world - is central to the methodology Ortner (1999: 159). Following Geertz, Collier and Rosaldo (1981:311) wrote that "conceptions in any society are to be understood as functioning aspects of a cultural system through which actors manipulate, interpret, legitimise and reproduce the patterns...that order their social world." Pierre Bourdieu (1977), with his "practice theory" emphasised the necessity to incorporate the actors "practice, action, interaction, activity, experience, and performance." In spite of these debates and disagreements, there is no anthropologist who would deny the importance of social structure for understanding individual behaviour. Even Fredric Barth, who throughout a long career has emphasised the individual as the appropriate object of analysis for anthropology, acknowledges the importance of "cultural stock, of knowledge, of concepts and values." This "stock" leads to what he calls an "internal coherence" of action. The cultural stock will be "modified and replenished" by new experience. Though all actors have "multiple and simultaneous purposes" each individual choice and action emerges in a context of "positioning, circumstance and social participation (1993:322)."

6. THINKING ABOUT SEX

The determination of an individual's 'sex' provides an example of how individuals and social contexts interact to create something that has been widely accepted as an individualised phenomenon, determined at conception. Cross-cultural based analyses by social anthropologists Marilyn Strathern (1988) and Henrietta Moore (1994), and discursive, historical analyses in the tradition of Foucault, have contributed to a rethinking of the notion of sex. Both the cross-cultural and the discursive analyses of sex are consistent with theories of by Bhaskar and Giddens on the interaction of structure and agency.

Predominant theories on sex have regarded sex as biologically pre-determined and immutable, while gender is socio-culturally constructed. Based on her research in Melanesia and Africa, Strathern establishes that sex is strongly influenced by social and cultural contexts. Consequently, she questions any presupposition which takes the differentiated single sex state as a 'natural' reference point. Identifiable and individual sexual identity is exclusively Western, as is a concept of a bi-polar sexual identity (individuals with intrinsic male and female attributes in a perpetual relation of difference). Sex and sexual orientation ought to be thought of as potentialities and thus as fluid, varying according to the social and relational context in which a person finds themselves ('him' or 'herself' are not appropriate in this non-bipolar construct). Sexual organs do not sex the person, but are rather sexed in relation to others, thus men are not in any simple way men. They also have an identity as androgynous beings composed of male and female elements. "In the company of other males, the Sambia initiate learns that what distinguishes males from females is not their appendages and orifices as such but the social relations in whose context they are activated... it is a difference that turns on interaction, not attributes (1988:211)." This is exemplified by the relationship between young men and their "inseminator", an older man, often the husband of the boy's sister, who establishes a same-sex relationship with him. These same young men later marry, have children and themselves establish same sex relationships with younger cohorts.

Foucault has analysed sex in Western discourses and come forward to a framework for understanding sex, and with conclusions, which could be compared with Strathern's. He concludes what counts as "sex" has varied considerably across time and space. He characterises sex is an effect rather than an origin and contends that "far from being a given and essential unity, it is, as a category, the product of specific discursive practices: "sex" made it possible to group together, in an artificial unity, anatomical elements, biological functions, conducts, sensations, and pleasures, and it enabled one to make use of this fictitious unity as a causal principle, an omnipresent meaning; sex was thus able to function as a unique signifier and as a universal signified (1978:154 cited in Moore, 1994:12)." Foucault's basic argument can be summarised as follows: the notion of sex does not exist prior to its determination within a discourse in which its constellations of meaning are specified, and therefore bodies have no "sex" outside discourses in which they are designated as sexed. Consequently, the construction of fixed binary sexes, with fixed categorical differences, is the effect of a specific discourse. What is more, if binary sex is an effect of discourse, "then it cannot be considered as a unitary essentialism and, more importantly, it cannot be recognised as invariant or natural (Moore, 1994:13)." Sexuality is not an innate or natural quality of the body, but is a historically specific effect of the operations of different regimes of power on the body.

These analyses of Strathern, Moore and Foucault show that sex is only comprehensible in a framework which incorporates discursively-situated social relations. This insight directs attention outside the individual body for an explanation of sex.

7. NEW AREAS OF INQUIRY

We can derive from the above that individual action or behaviour cannot be understood in the absence of a recognition of the role of social structures, defined as the potentials and pathways for action inscribed by social relations and cultural knowledge. The individual is not absent from this conceptualisation, but rather is present in ways quite different from those visualised in the energy efficiency discourse. From the direct analogy between sex and energy services comes the insight that those services – space comfort, lighting aesthetic, culinary tastes and so on – should all be regarded as being socially constructed. This recognition opens vast new areas of inquiry for energy efficiency research and new pathways for policy. In this section I will only sketch out two examples of where these pathways might lead.

Which social structures contribute?

We have argued in earlier papers that the social structures which shape production and delivery of energy choices are those which are most conspicuously absent from the energy efficiency debate (Wilhite *et al.* 2000; Shove and Wilhite 1999; Wilhite and Shove 1998; Shove *et al.* 1998). Anthropologist Appadurai (1996) in his book *Modernity at Large*, puts it this way: "The real seat of agency, ... is not the consumer but the producer and the many forces that constitute production." This is especially relevant in the home, where ways of cooling, heating, cooking and bathing are tied to heavy infrastructures and interlocking constellations of equipment

Perhaps the well-meaning separation of ‘demand’ from ‘supply’ in the energy discourse, done in order to draw attention to policy opportunities at the point of consumption, has had the unfortunate consequence of severing relationships between providers and choosers in policy conceptualisations. The relationship needs to be restored. This involves taking a step behind the final product to all of the contributors to the delivery of a “comfort system.” As Polanyi (1968:7) put it, “Neither the process of production nor that of distribution is linked to specific economic interests attached to the possession of goods; but every single step in that process is geared to a number of social interests which eventually ensure that the required step be taken.”

All of the social interests need to be accounted for. How would this change policy focus? The current energy efficiency policy approach to air conditioning in southern Europe provides an example. Anticipating an air conditioning trend in the future, international and national energy efficiency policy has thus far supported the diffusion of efficient air conditioning and heat exchangers (see for example Mebane and Presutto 2000). The approach focuses on a technical solution, but ignores the context into which the device will be inserted. The insertion of an efficient air conditioner into a building designed for passive cooling, or in a building with poor thermal efficiency standards, will not only result in both an increase in the buildings energy use, but in waste due to thermal gains. It is not even certain it will lead to increased comfort. A more robust policy, one truly (not just rhetorically) oriented to energy services, would have provision of comfort, not technical efficiency, as its goal. In such an approach, if an appliance is to be inserted, it ought to be contingent on minimum standards for the building shell, including materials for walls, insulation and windows (see Pagliano 2000). Second, before it is inserted, alternatives which reinforce passive solutions, such as porches, ducts, and fans, ought to be considered. Finally, taking a step back, there ought to be policy interest in how social structures surrounding passive cooling have stabilised in southern Europe and how can they might be reinforced (Wilhite 2000).

The role of media and global interconnectedness

According to Hart (2001), global interconnectedness, both in terms of displacement of people, of capital and of images contributes in as yet little understood ways to changes in both social structure and individual choices. On the one hand, this interconnectedness might be seen as individualising as people use increasing amounts of time on media (films, television series, internet, MTV, videos, popular magazines, and comic books). Advertising and the media, by intervening substantively and culturally through images, styles, and psychology, contribute to the creation - and recreation - of our understanding of what is individually fulfilling. But it also conveys messages on what is socially appropriate, and as such, impedes on social structure. Appadurai (1996) sees the social aspect as dominant, regarding modern media as a new kind of coloniser, one which takes over the imagination. It conveys styles and ways of living associated with the good life, success, and popularity, while at the same time it enforces the importance of commodities as mediators of human interaction: by obtaining or giving this or that, I will be more successful, loveable, clever, and so on. The ways that media impacts on both social structure, individual agents and the intervening dynamic is under-theorised and at the same time of utmost importance to a policy arena which hopes to effect changes in the way energy services are conceived of and consumed.

8. CONCLUSION

Lawson’s (1997:159) definition of social reality neatly encapsulates an alternative to the thinking which dominates energy consumption and conservation today:

..social reality is conceived as intrinsically dynamic and complexly structured, consisting in human agency, structures and contexts of action, none of which are given or fixed, and where each presupposes each other without being reducible to, identifiable with, or explicable completely in terms of, any other.

As I have shown, the assumptions concerning individual agency and social reproduction in energy efficiency discourse are firmly anchored, demonstrating remarkable intransigence in the face of persistent evidence that they represent an oversimplified version of reality. The contention in the title of the conference that “energy efficiency can get us there (to meet the climate challenge) is only partially correct. The cold facts are that in spite of the energy efficiency efforts of the past decades in OECD countries, energy use has continued to increase. Lack of commitment is only part of the problem. More of the same will only keep us from falling further behind. A renewal of the social theory which informs energy consumption and conservation is long overdue.

This paper has been an effort to lay bare fundamental assumptions and to provide ideas which could strengthen the theoretical framework which underlies policy. It is a long stretch from framework and assumptions on the one side to policy prescriptions on the other. A collaborative effort will be needed, involving those with experience from programs and policy evaluation, from economics and from the domains of social science not usually represented in the energy policy arena. The challenge involved in shifting the debate is considerable. As I have pointed out, the reasons for resistance to new thinking are many, including well-established and reified assumptions; an aversion to complexity; and a policy-driven concern with models which can predict. Further, the energy efficiency discourse is submerged in a broader discourse which favours continued expansion of consumption. The increasing spectre of climate change may eventually provide a leverage for change. Both the worlds of energy policy and of social science need to be prepared to contribute to a renewal of the discourse. Thinking about sex might be one way to begin.

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11. END NOTES

¹ According to Blaug (1992) the idea that a theory must be simple to be good is a product of 19th century science.

² The focus here is on individual consumers, but firms are also assumed to be economically rational (profit maximising), to have non-conflicting motivations and to act as independent agents, ignoring the fact they have overriding strategies, that they consist of collections of individuals with different interests and often with conflicting goals, and that creating, maintaining and solidifying relations are important to their survival and their success.

³ Carrier and Miller (1999:27) characterised the kind of market conceived as one which "emerges from the aggregate of the individuals who transact within it . In this conception, individual manufacturers and consumers meet and transact as sellers or purchasers, either for goods, services or energy. Markets are stripped of their social contexts.

⁴ He provides as examples driving on the motorway, playing a musical instrument, and speaking a foreign language.