Consumption, human needs, and global environmental change

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Abstract

Rapidly increasing levels of consumption of materials, energy, and services are one of the fundamental drivers of global and local environmental change. Yet consumption is still a poorly understood phenomenon and the social, cultural, economic, and psychological variables that determine consumption have not been clearly identified. Effective policymaking and prediction is impossible without knowing what determines and changes consumption levels. Diverse social-scientific models of consumption are largely incommensurate, poorly articulated, and untested. Rather than argue for one fundamental cause, this author reviews a number of alternative theoretical approaches, and then proposes a heterodox "multigenic" theory based on the work of Pierre Bourdieu. Such a theory accepts multiple types of causes of consumption, operating at different analytical levels, from the individual, through household, community, and ultimately to nations and other groups. Factors impelling and restraining consumption can therefore be balanced or unbalanced by relatively minor changes in a large number of interrelated variables. © 2002 Elsevier Science Ltd. All rights reserved.

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1. Introduction

A wide variety of scholars and activists have identified modern mass consumer society as a fundamental driver of both global economic growth and environmental damage (Redclift, 1996; Stern et al., 1997). The spread of high-level consumption practices across the planet has the potential to dramatically increase human impacts on both local and global resources, and contribute to continuing climate change (Myers, 1997; Wilk, 1998). Direct consumption of food, water, construction materials, energy and other renewable and nonrenewable resources is the easiest to track and quantify. Indirect consumption also has major impact on the environment; extraction, production, disposal and transportation of goods are linked together in complex 'commodity chains' that can make it very difficult to assess the full environmental effects of even common and everyday products like coffee and running shoes (Ryan and Durning, 1997). Nevertheless, the World Wildlife Foundation estimates that the consumption of resources and consequent pollution are currently increasing by around 2 per cent per year (WWF, 1999).

On a global basis the demand for consumer goods is not a simple consequence of income levels. Economic historians now argue that consumer demand has historically been highly variable, and is a fundamental cause of economic growth, rather than a consequence of it (Mukerji, 1983; Tiersten, 1993; Belk, 1995). It is also apparent that populations at the same income levels can have drastically different levels of environmental impact, consuming different bundles of resources, using different mixes of energy resources, and emitting widely varying amounts of greenhouse gases. For these reasons, consumption is a key issue in both predicting future environmental change, and in formulating policies that can lead towards sustainable resource use (Cohen and Murphy, 2001).

Environmental scientists should also be concerned with issues of consumption because they have become a key element in international dialogue about environmental change, and a major obstacle to effective international agreements that could control resource use and emissions. The dramatic differences in consumption between rich and poor countries—some have estimated that during a lifetime one US citizen represents 200 times the environmental impact of a child born in a country like Mozambique—raise obvious questions about the equity of global agreements. When people in developing countries hear

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scientists decry global warming, what they hear is "you're going to have to stay poor to save the planet" (Camacho, 1995).

For these reasons, there is an urgent need for useful and comprehensive theoretical work that will help us understand the forces that drive increasing consumption, and develop policies and programs that can lead to more stable and sustainable consumption levels (Michaelis, 2000). Yet there are presently no unifying theories of consumption in the social sciences, though there are many useful ideas scattered around a number of disciplines. In this paper I point out several reasons why existing theories of the dynamics of increased consumption are so incomplete and incoherent, based on my broad (though hardly comprehensive) reading about consumption in a number of disciplines. I identify three major paradigms within consumption theory, and suggest that each has its own limitations. Then I propose a pragmatic approach to understanding the continuing growth of needs and desires, which may transcend some of the limitations of previous approaches. Drawing on Pierre Bourdieu's practice theory, I sketch a multigenic model, which assumes that a diversity of causes both impel and restrain the expansion of consumption. Such a model provides a number of opportunities for regulation, activism, and communication that can change the direction of change in consumption behavior. By pursuing consumption policy more directly, environmental and social scientists can have a major impact on the future of the environment though influencing regulation, policy, education, and markets. But the existing tools for understanding and acting on consumption are incomplete and contradictory.

2. Three paradigms

There have been several excellent reviews of consumption theory recently, which note the diversity and complexity of work in a number of disciplines (e.g. Berger, 1992; Miller, 1994). I have reduced this diversity into three basic categories for the sake of clarity (based on a more thorough treatment in Wilk, 1996). Each type of theory is grounded in fundamental (and untested) assumptions about human nature, and is connected to deep philosophical issues about the causes of human behavior, as well as methodologies for studying people. This is why it is so important to bring these assumptions out and make them clear at the beginning.

Individual choice theories seek the basis for consumption within the individual, through the mechanism of the satisfaction of needs. Psychological approaches may trace needs to the process of personality formation, early family interactions, and the actualization of adulthood. Consumption may then be cast as either pathological aberration or healthy means of objectification and individuation. A classic example is the work of Csikszentimihalyi and Rochberg-Halton (1981) which assigns a number of psychological functions to middle-class consumer goods, including self-expression, making a personal history, and providing security. From this standpoint, people need goods in anonymous and stressful modern societies in order to remain healthy and happy. Their basic needs are extended to new objects because of the pressure of advertising, which associates consumer goods with sex, status, self-respect and other fundamental human drives.

Other scholars have used similar psychological theories to develop a distinction between individualist and collectivist cultures (e.g. Hofstede, 1980; Aaker and Williams, 1998). This psychological work converges with the recent spate of post-modern and reflexive theories of consumption, which concentrate on subjectivity, experience, identity and selfhood, and the creative and playful potential of consumer culture (e.g. Brown and Turley, 1997; Lash and Urry, 1994). The more materialist and economic branch of individual/choice theory is based on ideas of rational choice and maximization of utility found in economics and economic psychology. Here people consume to maximize short-term satisfactions derived directly from goods themselves, though the model has been extended to include services, and the non-material satisfactions of social life, citizenship, and charity (Becker, 1981). Rational-choice theorists assume that consumption is the product of individual choice, driven by an internal hierarchy of needs.

To summarize; *individual choice* theories are primarily concerned with consumption as needs-driven behavior. Needs are produced internal psychological and cognitive processes, leading to choices within a marketplace of possibilities. For adults, therefore, advertising and media should be seen mainly as a source of information, which people may use to make decisions, and persuasion that plays on basic psychological needs. But because children are still forming their personalities and needs, and lack the ability to tell good information from bad, they are seen as especially vulnerable to the media, and some form of protection is therefore needed.

Social theories of consumption see consumption as a group phenomenon, a form of collective behavior that helps form groups and signal membership (Burrows and Marsh, 1992). Many social theories can be traced back to Thorstein Veblen, who thought that consumption was motivated by social competition and emulation; people use goods for display in modern society because their social roles are no longer strictly prescribed by birth, class, and social standing. In traditional society people consumed according to their rank and social place. Free of fixed social positions, people now consume competitively, endlessly trying to acquire status by emulating those with more wealth and power.

The underlying assumption is that desire for social distinction and social solidarity are a part of human nature, part of what makes it possible for us to live in groups, and that consumption seeks (unsuccessfully) to satisfy these needs. Therefore, when social structure changes, so will needs and consumption. Bourdieu (1984) has done the most to develop social theories of consumption, arguing that consumption reflects underlying groups of tastes and style that hold social classes together. Logically, in any society where there is social differentiation, consumption will have an important role in asserting or challenging rank and status (see Holt, 1998).

To summarize; *social theories* reveal the ways that consumption serves to maintain and challenge the boundaries of social groups, including nations, classes, genders, and ethnic groups. Consumption is a social code, and people consume to fit in or to stand out (Simmel, 1904). Concepts like status, lifestyles, and standards of living are all based on social thinking, which equates particular patterns of consumption with specific groups. From this perspective, the role of the media is to reflect group characteristics, providing images that reinforce identities and provide reference groups, though people also choose media that fit their group characteristics. Advertising can manipulate these roles, by encouraging emulation of higher status groups, and associating brands and styles with particular social groups.

Cultural theorists see consumption as a form of symbolic behavior that creates and expresses meaning and identity (Holbrook, 1991; Douglas and Isherwood, 1979). This includes a semiotic approach in which commodities are seen as complex texts and forms of discussion (Baudrillard, 1998). Some cultural theorists, particularly in cultural studies, emphasize the playful, creative, and expressive aspects of consumption (Mackay, 1997). Others are far more critical of the role consumption plays in culture, emphasizing the ways that consumer culture displaces traditional forms of cultural expression, leading consumers into endless spirals of unhappiness and narcissistic spending (Schor, 1992). Some authors argue that consumer society is a new cultural form, produced and manipulated by small cultural and corporate elites, so it is inherently oppressive and dangerous. A broader comparative anthropological approach proposes that all people, in every kind of society, consume because it creates cultural order, expresses ideas, or helps make sense out of novel circumstances, marking cosmological and temporal categories that make cultural meaning out of diverse experience (Weiss, 1996; Seremetakis, 1994; Douglas and Isherwood, 1979). The underlying assumption of all cultural theories is that human beings are expressive, symbolic beings, whose greatest need is to understand each other and the world. Within any particular culture, consumption follows historically established themes and meanings, and new consumption practices must be adapted locally into this order. One cause of expanding consumption is therefore the erosion of local customs and cultural systems, which leaves people feeling unrooted and empty (Ewen, 1988), and therefore vulnerable to all kinds of novel appeals.

To summarize; *cultural theories* depict consumption as an expressive act, laden with meaning. People use goods to communicate to others, to express feelings, and to create a culturally ordered environment. Most theorists argue that in modern societies, mass consumer goods bought in the market have increasingly displaced local, indigenous, creative rituals, objects, and meanings. Terms like ideology, semiotics, custom, and worldview are hallmarks of a cultural approach. From this perspective, the mass media are themselves cultural creations that reflect a worldview, but can also displace local cultural expressions with national or global ones. People may resist by appropriating or challenging mass media as well. Advertising does the opposite, hijacking cultural themes and meanings in order to make particular goods and services desirable.

3. Policy implications of the three models

To give an illustration of the three models in action, consider the example of the sports utility vehicles so beloved in North America, a fleet of vehicles that many critics consider emblematic of profligate waste and unsustainability. Each approach begins with a particular theory of behavior, which provides both a frame for research and understanding of the consumption of SUVs, and the choice of an appropriate set of policy tools.

For an *individual choice* theorist, the best way to explain the popularity of SUVs is to find the attributes of these vehicles that satisfy particular needs, often using survey methods. It would not take very much research to find that drivers overwhelmingly cite safety as their main concern, followed by roominess and comfort, in carrying passengers and cargo. One could also point to the harsh climate in the USA, as well as urban sprawl and long commuting distances as key environmental factors that make an SUV a rational choice. Recent data from the insurance industry would support consumers' contention that large SUVs are indeed safer for their drivers (though not for those in the vehicles they hit).

From this diagnosis of the problem, individual choice theory leads us in two possible directions for policy-making. The first is to change the environment within which consumers make choices; for instance we might in the short term raise taxes on large vehicles or fuel, and in the long run seek changes in transportation regulation

and urban planning that would make public transportation a more viable safe alternative, or cars more efficient. The second direction would involve educating consumers with information that would change their choices (the likelihood of large size actually saving their life is actually very low), or their values (should comfort be more important than the global environment?). Social marketing, such as public-service advertising or journalism, would be prescribed.

For a *social* theorist, the problem of SUVs is larger than any individual; it is an essential product of a society with abundant but unequally distributed wealth and high levels of social competition, in which automobiles have been the favorite status symbol for almost a century. A study might look carefully at the demography of SUV ownership, in order to identify the trendsetters and the laggards in a process of social diffusion driven by competition. Are there particular demographic trends that are leading to a growing market? And at what moments in their life are consumers most likely to purchase an SUV?

A social diagnosis is likely to prescribe a set of solutions specific to social groups. Just as advertisers pitch SUVs differently to different "market segments", so policy will have to focus on issues specific to social subgroups. One could then use status competition in a positive way, using marketing to associate small hybrid cars with members of status groups that are emulated, including the wealthy, media stars, and professional classes (Hansen and Schrader, 1997). Contests for efficiency could promote alternative vehicles, while shaming can be aimed at the wasteful. Beyond this micro-level, however, social theories tend to suggest that truly effective policies will be those that reduce social inequality and therefore social competition. In the long run, broader access to higher education, transfer payments, progressive taxation, and the like should reduce the importance of status symbols. Health, environmental, welfare, and other social policies can all be expected to have an impact on consumption, and could be audited and changed to promote more sustainable practices. At their most extreme, however, some social theorists insist that only revolutionary change in the structure of capitalism can halt the expansion of consumption, a policy recommendation that is not likely to have broad appeal.

Cultural theories would offer yet another diagnosis of the SUV, probably based on interviews with consumers and advertisers, historical research, and a detailed symbolic reading of advertisements and other media. A cultural analysis might find that the North American middle class has long been swayed by romantic myths of independent and self-sufficient nuclear families, and both the control of and closeness to nature. The SUV allows consumers to weave together old stories in new ways; and realize contradictory dreams without compromising any of them. They can go anywhere in the rugged wilderness, without giving up their comfort, as the modern masters of nature. Dad can dream of a hunting trip, mom can keep the family safe on the way to soccer practice, and the kids can watch TV in the back seat. The SUV is a symbol of the American cornucopia of abundance, a just reward for hard work and Christian virtue.

What kinds of policies result from a cultural analysis? It follows from the diagnosis that any real change in consumption practices is going to require a transformation of values and beliefs. At the local and immediate level, a social marketing campaign could link hybrid vehicles or bicycles to existing important cultural themes like frugality, thrift, and health. Public appeals could emphasize the contradiction between broadly accepted environmental values and the proliferation of SUVs, or their high gas consumption could be linked to dependence on foreign energy supplies, building on existing American xenophobia. In the long run, broad cultural change towards values of frugality and sustainability will not result from social marketing, but from education and small group interaction built around cultural activism. This requires sustained effort at changing school curricula in many subjects, and support for grassroots movements like the "simple living groups" and "sustainability circles" that now attract about a half million participants in North America. They use variants of the "12-step" technique to get participants to "reprogram" their cultural values and behavior.

This is by no means an exhaustive analysis of the SUV issue, nor does it do any more than scratch the surface on the links between consumption theories and policy tools. What I intend is simply to show that each theory has something important to offer, and none can be rejected logically or empirically. At the same time each one is flawed and partial, and uses only particular kinds of methods, data, and information, while ignoring others. Adherents of one theoretical tradition tend to belittle or ignore research and recommendations that result from the others; in the process they eliminate policy alternatives and actions without any empirical justification. These blind spots, and contention between experts leaves little firm social science support for policy—you can find an "expert" to support or attack almost any recommendation. The result is that we really do not really know what works. Worse, we don't know why some actions work only in certain settings, and not in others. Given the terrible urgency of global environmental problems, why should we reject any possibility that may be effective in the interest of theoretical purity?

To some extent these problems cut across all the social sciences, which are still divided on issues as basic as the goals of science and the existence of truth (Mazlish, 1998). But major environmental problems cannot wait for a grand unified theory of social science

to emerge. Instead, a pragmatic pluralist approach must draw on whatever tools can work, recognizing that different explanations for consumption may be useful in the right circumstances. If our explanatory models do not have to carry the weight of a philosophical position on human nature, or a moral agenda, the problems of consumer behavior may become much more tractable. Some empirical studies of consumer behavior, especially those done by historians and in marketing, abjure any explicit theory, and instead claim a sort of inductive empiricism. Rather than reject theory, and adopt purely inductive approaches, I would argue it is far better to develop meta-theoretical rules or guidelines that would specify which models are useful in which empirical situations. The result would be a heterodox *multigenic* theory, which accepts that there are multiple determinants of consumption, operating at different conceptual and analytical levels, from the individual, through the household, community, and ultimately to nations and larger groups.

4. Broadening theory

One of the most difficult problems in understanding the causes and consequences of consumption is the issue of scale. Most of the negative consequences of consumption appear at high levels of aggregation, when we are thinking about the emissions or resources of a region or nation.[1,2] From this perspective, consumption levels are a characteristic of a population. At the same time, the prevailing models and theories that attempt to explain consumption operate at the level of the individual consumer, and define various social, cultural, and economic forces that act to create a particular set of preferences, needs, and desires. There is an enormous gap in between, which has received far too little attention in the literature. Individual choices in the marketplace are limited and channeled in many ways by institutions, infrastructure, regulations, and markets. As a simple example, the infrastructure, markets, and settlement patterns of the American suburbs makes it extremely difficult for anyone to choose a mode of transportation other than the personal gasoline-powered automobile (Shove et al., 1998). A whole series of

institutions mediate between individual choices and environmental consequences, and each has its own dynamic and appropriate analytical tools. It is appropriate to focus on households to understand fertility, while a class analysis would be more useful with competitive luxury consumption among the very wealthy (Frank, 1999).

This implies that consumption is the complex product of balances between very diverse force, *multigenic* in the sense of having many causes, and dynamic in that diverse causes are linked in multiple and complex ways. Dynamism requires an understanding of both forces that impel consumption, and those which restrain it. To a large extent these restraints and limits have been invisible in literature on modern consumerism, except in the gross and inadequate form of wages or income, which are treated as the only absolute constraint on consumption by economists.

Restraints on consumption are an everyday experience, though they rarely appear in consumer theory. In my rural neighborhood, certain forms of competition and display, for example Christmas lights, are quite acceptable and are even considered sociable. Other forms of consumption, for example of alcohol in outdoor parties, are unacceptable and would be greeted with social approbation, gossip, subtle acts of non-cooperation and other pressure. All children in American society learn about the importance of conformity and restraint, and the social dangers of standing out. The Mayan village where I have lived in the Central American rainforest worked in exactly the same way to shape consumption with both incentives and disincentives. Anthropologists working in rural communities often discuss the balance between ambition and fear of envy (or witchcraft and other social sanctions) in constraining both consumption and work effort. While community restrictions and other public social controls on incentives and allocation of resources are certainly different in urban industrialized societies, they are hardly absent. Some have shifted from the neighborhood and ethnic group into the household and family, where sociologists find powerful restraints on spending and consumption within the dynamics of gender and kinship in marriage and parental relationships (Zelizer, 1994; Folbre, 1994).

Restraints have tended to be a silent shadow of consumption in modern theory, partially because of the common perception that consumer society is 'out of control'' and unregulated. Yet the majority of people still live in orderly communities, and consume within relatively narrow limits, constrained by subtle pressures and social conventions that appear externally only as the failure or refusal to consider alternatives. Studies of decision-making in the purchase of houses, for example, show that the majority of choices are *exclusions*, as consumers jointly decide what kinds of features are

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[1] This discussion of scale and aggregation is based almost entirely on the work of Josiah Heyman (1999), who has done groundbreaking work on consumption and the environment.

[2] Needs and wants can be treated as consumption frontiers. If needs are an accepted social standard of living, wants are types of consumption that are beyond that frontier, and are seen as individual propensities or options. The area between wants and needs includes conceivable or desirable practices and objects that have not yet been absorbed into daily life. We can then usefully portray the dynamics of consumption change as the emergence of new wants, transformation of wants into needs, and the eventual elimination of needs (following Sanne, 1995).

unacceptable (Park, 1982). A dynamic theory of consumption should therefore focus more attention on limits, and on the institutions, impulses, understandings, and meanings that enforce or sustain them. The most fertile ground for intervention and policy making may well lie in finding ways to elaborate or bolster existing constraints on consumption, rather than in creating new ones or manipulating incentives. Encouraging aversions and distastes may be more effective than changing desires or perceptions of need (Wilk, 1997).

5. An example

Here I would like to sketch an example of how a dynamic and heterodox theory could be constructed, at the level of individual choice and social rules. I have adapted the 'theory of practice' proposed by Bourdieu (1977) to suggest that the transformation of *desires* into *needs* takes place through the interaction between individual choices and social rules. The growth of new 'needs' is a key aspect of the increases in consumption in modern society, as what were once luxuries (for example air conditioning) become necessities (Illich, 1977). But we cannot explain the growth of new needs simply through the analysis of individual psychology, or some entirely social process, taking place in groups. We need to link different levels of analysis, using tools from different social sciences.

The problem Bourdieu (1977) addressed was the idea of *social rules*. In classical sociology, individual behavior is a product of social rules and standards, but where did the rules come from in the first place? How is it possible for the rules to change? According to Bourdieu, rules do not *determine* behavior in a rigid or programmed way, because they exist at a number of levels. They may be either explicit and subject to debate or unconscious; the most deeply unconscious "doxic" habits regulate things like disgust and comfort—they are actually absorbed into the human body as feelings. Other parts of the "doxa" are the taken-for-granted rules of common sense, which we never question. Then there are less deeply submerged norms and rules of conduct that are respected, but are also subject to dispute and manipulation, which are sometimes written into law.

The whole realm of the unconscious, patterned set of rules and feelings that guide behavior is called the "habitus" by Bourdieu. But it is not static. Social rules, predispositions, common sense and even embodied feelings can all change when they are brought out of the habitus, into the daily world of speech, debate, manipulation, and argument. When people start to talk and argue about what is right, and how rules should be interpreted, rules are subject to manipulation, evasion, and multiple interpretations. Eventually they can become re-established as truth and finally sink back

into the accepted daily practice of the habitus, but they can also change in subtle ways through re-interpretation, or they can be challenged, rejected, or replaced. Consumption standards can be seen the same way, since standards of consumption, of needs and comfort, are just like other kinds of social rules. They can be deeply embedded in bodily routine, so that for example we no longer 'feel clean' unless we bathe every day. Or they can become objects of debate and argument; we might argue with a spouse about whether or not we 'really need' a fancy cell phone with a color screen.

Again starting with the practice theory of Bourdieu and related work by Falk (1994), an individual experiences needs as part of the habitus, the taken-for-granted of nature and cosmology. Thus, when a Jamaican "needs" rice and peas at a meal in order to feel full and satisfied, she is drawing on the bodily experience of doxa; needs are felt, not spoken. But when the same Jamaican sings a song about her national pride in rice and peas as the national dish of the country, need has moved from the realm of the habitus into the conscious and contested area of discussion that Bourdieu calls "heterodoxy." Now taste can be discussed and debated; and this happens only when the daily diet of rice and peas is being challenged in new environments and by changing markets that make fast foods a cheap alternative. When any kind of consumption emerges from the habitus into heterodoxy, when it is debated and argued about and has to be justified or explained, it becomes a "want," a contested need, and it can be successfully challenged.

5.1. The habitus

I am proposing an approach to consumption that focuses on the cycle through which needs are questioned or challenged, emerging from the space of the habitus into heterodoxy, where they can be debated, expanded, modified, and reframed as "wants", before becoming established in the habitus as new needs, or rejected and repressed. While generations of social scientists have remarked on the ratchet-like way that wants gradually become emplaced as needs (the rising standard of living), they have given the process little serious empirical study (exceptions include Sanne, 1995 and Shove, 2001). Instead they focus on the way that new wants are generated and cultivated in a marketplace through advertising, spectacle, and mass media, as a consequence of modernity. They miss the key counter-movement that naturalizes wants as needs, takes them out of contention, and embodies them as taste, urge, and impulse, while reducing or eliminating others (a gallon of beer a day was considered a 'basic need' for working men just a century ago).

While the pace and expanse of the cycle of habitus and heterodoxy has certainly increased dramatically

under modern conditions, there is no reason to believe that the underlying process has changed. Instead we can think of the rate of expansion of existing needs, and the generation of new ones as a product of the changing balance between two general processes.

5.2. Naturalization

The first can be called "naturalization", encompassing many forms of social control. For analytical purposes, it comes in two characteristic forms. The first, *submersive* naturalization maintains the status quo by keeping needs submerged (or buried) in the habitus where they are only partially accessible, by continually asserting that the existing order is natural. It is not hard to see how ritual, group work experience, and child socialization, as well as silencing acts and emotions of embarrassment or shame can naturalize particular needs. When you cannot even express your desire, much less act on it, or where there seems to be no name for what you want, you are facing submersive naturalization.

Repressive naturalization is the second kind; it pushes wants and desires into the status of needs, by legitimizing them, linking them to existing needs, or stigmatizing alternatives. Acts of aggression or violence may accompany repressive naturalization, but the more pervasive forms include displays of power, gossip and slander, and repetition. The goal is often to make some practice unthinkable, while making others seem "normal". Fear certainly plays a role in repression, but often pressures are much more subtle and pervasive or are instilled through habit. A Maya man once told me about his first encounter with shoes when he went to school in a nearby town where he was the only Indian. His schoolmates laughed at his bare feet, and gradually he got into the habit of wearing shoes; by the time I met him he thought that going barefoot was unhealthy and disgusting. Repressive naturalization disciplines us not to question our needs, but acts of rebellion and resistance can successfully resist repressive naturalization. In my recent research on children's food habits, I have seen struggles with parents over the question of whether eating meat is 'natural,' and sometimes children win and develop a new definition of a normal diet.

5.3. Cultivation

The opposite process to naturalization is cultivation, which extends, and expands existing needs in new directions, bringing bodily experience into open discourse, display, debate and contention. Some cultivation takes place in every society as an aspect of socialization and aging, as children learn new tastes and needs for each stage of life, social position, and gender role. Some forms of ritual, for example rites of passage, cultivate new needs at the same time as they repress old ones.

Other kinds of cultivation emerge from what Bourdieu calls "praxis", the improvisational and pragmatic action of everyday life faced with constant problem solving and changing technology. Most praxis plays within established cultural rules, poses no challenge to the established order, and passes unmarked. But sometimes people find new ways of doing things—changing the way a tool is used, or trying out a new kind of food, which then challenge common sense. In these cases, changing behavior involves more than choice and decision; it requires a change in the habitus. Accepted ways of doing things have to be discussed, adapted, and rationalized anew.

This is merely a sketch of how a dynamic and multigenic theory of consumption might be constructed. Bourdieu's theory of practice is a starting point for considering the interaction between processes embedded in individual psychology and rationality, in cultural systems of meaning and communication, and social institutions and economic structures. One can see how, starting with this perspective, it would be possible to trace the ways a policy intervention, for example improved appliance labeling, leads to a change in peoples' habits and culture, as well as (or instead of) in their immediate purchasing behavior. We could classify forms of consumption into those deeply embedded in daily bodily practice (showering daily for example) and those that are subject to question and debate, and are more easily changed (air conditioning the whole house). By implication, long-term effective solutions to environmental problems caused by consumption have to take place at the level of perceived needs, and eventually in daily praxis. Strategies for this kind of change have to follow cycles of cultivation and naturalization. Therefore, we urgently need to develop some testable models of the ways social, psychological, and communicative practices can naturalize new practices and understandings.

6. Implications and applications

What does this mean for the practitioner, particularly those engaged with environmental policy, interested in finding ways to reduce energy and material consumption? On one hand my arguments may seem to make the prospect of effective intervention far more complex and difficult than simply taxing carbon or mandating recycling. But so far many clear and simple solutions have proven impossible to implement, and others have had almost no effect on the upward trajectory of North American consumption. Seen in another way, the model of a dynamic of pushes and pulls, of interplay between habitus and praxis, could be an opportunity to find new

kinds of policy tools and means of influencing behavior. One could, for example, think about ways to strengthen existing restraints rather than providing overt disincentives like tax increases, or legal restrictions, which often do not effectively limit consumption. A multigenic model makes available to policy makers a much broader range of tools, that do not just operate by affecting individual choices, but also through changing social groups and boundaries, and cultural systems of meaning and value.

7. A concluding example

Bank (1997) provides an example that can be used to show the importance of a multigenic approach to energy consumption. In poor townships of South African cities, kerosene continues to be the principal fuel used for cooking, despite frequent dangerous fires and the availability of safer gas and electricity.[3] Bank connects the choice to continue to use kerosene, despite its costs and dangers, to a wide range of cultural, social, and economic aspects of the townships where she worked. In local culture, for example, buying, selling and using kerosene are considered women's work, while men are more involved in providing and paying for electricity and gas. Men resist a shift away from kerosene because it increases their obligation to the family budget; many women prefer kerosene because they can obtain it informally through borrowing from friends when cash is short. Kerosene is culturally embedded through the local cuisine, in which the favorite staple dishes are cooked slowly over a very low flame. Economic aspects other than total cost also favor kerosene, since it can be burned in cheaper stoves, and it can be bought and stored in small bottles and cans, fitting into a cash-poor economy with irregular employment opportunities.

Bank's analysis makes a clear distinction between the kinds of *tactical* choices people make in their everyday lives, within the constraints of gender, social organization, and ideology, and their *strategic* efforts to change what I have called the habitus, the taken-for-granted arrangements that structure choice. While the paper stops short of making useful policy recommendations, it does point to changes in marriage practices and household budget arrangements that are providing openings for changes from kerosene to electricity in cooking. From the same analysis, it is not hard to see how technical changes in stoves and appliances, pricing of

fuels, or the provision of day-care facilities could all be incentives to reduce the use of kerosene. In its analytical breadth, the study invites creative thinking about a wide variety of linkages between fuel use and other social activities.

7.1. Linkages

A multigenic model therefore offers the prospect of linking consumer policy, often confined to practical realms of price and utility, to much broader social and political policy issues. Within a specific empirical context, a multigenic analysis could justify connecting energy consumption behavior to gender relations within the family, community governance institutions, health and nutrition, or property development regulations. While many may consider such interventions to be outside the range of environmental policy interventions, governments are already deeply involved in consumer policy-making in all of these areas. They just do not usually consider these sorts of policies to have any relevance to the environment.

Because of the theoretical problems I have identified above, and also because of poor communication among disciplines and approaches, social scientists have tended to ignore or criticize theories or methodologies with which they are unfamiliar or uncomfortable. It is easier to reject other approaches than it is to acknowledge the importance of areas outside one's own expertise, or problems that are not answerable with the kinds of data or methods one is used to working with. But as I have argued, the reality of consumer behavior requires broad approaches that do not assume, a priori, what kinds of variables and what kinds of knowledge or data or analyses are going to be fruitful. Instead of contending paradigms, we have to work to find out how different social and environmental sciences can truly complement each other.

Only multi-disciplinary teams with broad mandates to gather diverse kinds of data, able to work together using a variety of analytical models and theoretical tools, would be capable of carrying out the necessary research. Rather that beginning with a narrow definition of a problem to be solved with a pre-selected policy intervention, they would have to progressively redefine their problem and consider a broad range of policy alternatives. Such a team would have to include quantitative and qualitative researchers, willing to do multi-level research, and spend a great deal of time learning to effectively communicate with each other.

Ultimately, a multigenic theory can provide a basis for broad multi-stranded policy solutions to conserving and lowering consumption of energy. While many countries and international organizations have in practice adopted such mixed strategies, in practice they are often seen as contending methods, rather than

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[3] Bank asserts that electric and gas fuels are cheaper than kerosene, as part of her argument against economic rationality. Yet she does not consider the costs of appliances or transactions costs, so this assertion remains weak. But why does an argument *for* the importance of culture and social factors have to be built on an argument *against* economic rationality? They are not mutually exclusive, except from the standpoint of theoretical fundamentalism.

complementary or even synthetic. While the development and testing of multigenic theories is sure to be complex and difficult, the rewards could therefore be substantial.

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