DRAFT

Household Lifestyles: Ideas for a Research Program[1]

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1. Overview

Households rather than isolated individuals generally take decisions regarding the number of children in a family and the major purchases that are made only occasionally. These and more routine household decisions and the resulting behaviors are among the key determinants of the impact a society has on the physical environment. One objective for a *science of sustainable societies* (SSS) is to recommend alternative behaviors that can substantially reduce the physical impact of household activities on the environment and to identify material and social contexts in which households might come systematically to consider adopting such alternatives. A starting point is to determine if households can be classified according to what I will define as their lifestyles in a way that is consistent with theoretical understanding and can serve as a basis for action. My perspective is that of an economist accustomed to working with data and quantitative models and keenly aware of the qualitative analysis that will be needed to bring the power of models to the analysis of household behavior..

A lifestyle can be defined in many different ways: the challenge is whether a classification principle can be found that groups together households by key structural attributes and behavior patterns and simultaneously by similar prospects for changing these behaviors. Sociologists, economists, statisticians, and market researchers use different household classifications, which are examined below as candidates for the stated purpose. The power of classifying households by lifestyles in ways relevant to environmental impact is not yet widely acknowledged among social scientists. A common classification can incorporate insights and concerns of several disciplines into a conceptual map of household activities in a given society and help build a cumulative body of research out of what are still sparse and isolated pieces.

A SSS aims to identify those household behaviors with greatest impact on the environment and those with greatest potential to reduce that impact. A substantial body of work along these lines has developed in recent years. It includes a popular literature offering sensible advice to the general public about things to do to protect the environment as well as a specialized research literature in which quantitative analyses identify the parts of the average consumption package in a particular country with the greatest environmental

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impact. The consumption package is sometimes said to reflect a lifestyle; I provide more structure to the relation between them below.

Missing from this literature is not only a common classification of households but also a classification of household activities and alternative ways in which each activity is or could be carried out. I propose to describe the lifestyle of a household by how it carries out a selected set of activities and then group households by commonality of lifestyle. Thus the activity is a concept intermediate between the more abstract notion of a lifestyle, at one extreme, and the measurably concrete quantities of purchased goods and services, at the other. There are a small number of activities that virtually all households in all societies carry out, and there are a number of different ways of carrying out each activity, where each way may be associated with a pattern of purchases. The activity as a unit of analysis has several desirable qualities. It is more concretely defined than a lifestyle but still open-ended enough to elicit sorely-needed exploratory and qualitative research. It provides the logical explanation, which cannot be deduced from consumption data, for the uses households make of their purchases. A variety of items may be purchased to support a single activity, and what appears to be a single purchase may serve a mix of purposes. (For an example of the latter, purchased oil is used in part for heating and in part for automobile fuel.) A useful classification will explicitly include activities with both environmental impact and prospects for significant behavioral change, but it need not include all the ways people use their money or time.

It is desirable to define distinct household and activity classifications for different societies, yet each effort can take advantage of the cumulative progress. Lifestyle changes in one household type can influence other household types in the same society and in other societies. This diffusion relies on direct material impact, lifestyle emulation, the stimulation of the imagination through a demonstration effect, and leadership and activism. These channels may be strong enough to comprise the fundamental mechanism for the transmission of behavioral change. A particular household can adopt many changes at its own initiative, but other changes require action from different levels of government or the private sector. Strong commitment on the part of many households, and many types of households, to specific alternatives could induce policy makers or commercial interests to facilitate change or even accelerate it.

The development of a taxonomy for activities and the identification of alternative ways of carrying out each activity, and of a taxonomy for households based on common approaches to activities, comprise an agenda for a SSS that cuts across the traditional social sciences. The selection of activities requires collaboration with natural scientists (perhaps Industrial Ecologists) because of their direct connection to the material world. The development of behavioral alternatives involves an additional ingredient: vision, or imagination, about how things might be done differently. The design of alternative scenarios is likely to come from outside the traditional sciences.

Scenarios need to be analyzed for their plausibility and their material and social impact. Industrial Ecologists can and do address material plausibility. Economists, especially Ecological Economists and Input-Output Economists, are well positioned to collaborate in the analysis of the material impact, using empirically grounded mathematical models of the material stocks and flows associated with production, consumption, and trade and coupling these models with ones of the biosphere and climate system. The latter have matured dramatically in the past decade in terms of conceptual modularity and depth of empirical

content, and an objective of a SSS agenda is to achieve comparable progress in the economic models.[2]   One aspect of deepened empirical content in economic models is the ability to analyze scenarios about changes in lifestyles. Collaboration with NGOs and activists can help promote scenarios that such analysis reveals to be promising.

2. Household Classification Concepts

Many classification schemes have been devised as conceptual maps to aid our understanding of the natural world, say of the great kingdoms of minerals, plants and animals. There are alternative classification principles for each, emphasizing different attributes like structure or function, and no single system can be considered ideal or suit all objectives. Among classifications used by economists, the most developed is the Standard Industrial Classification, which groups production establishments according to their dominant output. Establishments in the same category may vary widely in location, size, choice of technology, and even in product mix. Nonetheless, this classification is widely recognized as the foundation that has supported extensive, cumulative, interdisciplinary study of production and technological change.

The study of households and lifestyles needs a system of classification to establish its domain and help locate the important areas for investigation. The main existing candidates to consider as principles for classification are social class, income categories, and bottom-up clusters, discussed below.

Social Class
Stratification by social class reflects the uneven distribution of life opportunities and material resources and the associated divergence of political interests within a society. It is commonly used to measure social mobility. A classification by social class accords overriding importance to how one earns a livelihood, namely as an employer, employee, or self-employed. The household is a convenient unit of social analysis with such a classification. It is possible to assign a class even to individuals who are temporarily or permanently outside the work force using the device of a household "head," whose employment situation defines not only his or her (generally his) class but also that of all other members of the household. A class taxonomy includes a relatively small number of categories: a tiny aristocracy or upper class, associated with the corporate rich or movie stars; the bourgeoisie or upper middle class, associated with professional and managerial occupations; a petty bourgeoisie or middle class, associated with clerical and sales jobs; a proletariat or working class of skilled and unskilled laborers; and an underclass or lower class with few marketable skills.   The socioeconomic classification used by the UK national statistical office, for example, is comprised of 14 categories that disaggregate these by finer considerations such as the size of the establishment.[3]

Income Categories
In the mid 20th century, national statistical offices became charged with the systematic collection of data on national income and product, eventually expanded in increasing

[2] Some colleagues and I organized a workshop on global economic models with this ambition in Vlodorp, the Netherlands, October 9-11, 2003.
[3] David Rose and David J. Pevalin, 2001. "The National Statistics Socio-economic Classification: Unifying Official and Sociological Approaches to the Conceptualization and Measurement of Social Class," Institute for Social and Economic Research, University of Essex, Working Paper 2001-4.

numbers of countries to include detailed input-output tables and their offshoot, the social accounts. The social accounting matrix (SAM) is a table of numbers that describes the detailed sources of household incomes for different categories of households (from labor, profits, or rents) and equally detailed outlays by these household categories for consumption. The production portion of a SAM (showing the sources of labor income and profits) is classified by Standard Industrial Classifications, but the occupational and especially the household categories are *ad hoc* -- usually a handful of household income categories. Governments compile SAMs for 2 reasons: to locate taxable income, especially income that is not yet being taxed, and to trace and quantify the need for specific social services. SAMs have been used to evaluate the impact of "structural adjustment" (to IMF policies) and domestic social policy measures on the poorest households in developing countries. (SAMs have been used much less in the analysis of developed economies.) They are also used in models of the world economy to examine the impact of various aspects of globalization on different categories of households in different societies.

Other Single-Variable Stratifications
While national statistical offices provide the bulk of the data on production, consumption, trade, investment, and price levels used by economists, they are also responsible for the household censuses and surveys that include far more detail than is absorbed into the SAMs. Thus it is possible to report, for example, household consumption by geographic location, by number of adults or children in the household, or by attributes such as ethnic category, age, or education, of one or more members. Data tabulated in these ways can be useful, but their value is limited by the *ad hoc* choice of categories and the inability to relate one household descriptor to another.

Household Clusters
A new principle for household classification emerged from the American market research community in the last decades of the 20th century: household clusters. On the order of one hundred million United States households were classified into a few dozen categories based on the neighborhoods in which they live. Formal statistical procedures (factor analysis) applied to an enormous volume of public and private data covering detailed purchases of goods and services as well as many other aspects of everyday life identified clusters of common attributes and behaviors. Then the clusters were given descriptive names (such as "Inner City Blues") in the attempt to synthesize their dominant characteristics and behaviors. This information, associated with zip codes (and smaller spatial units), has substantially improved the efficiency of targeting direct-mail marketing. Market research clusters have now been derived for many societies.

It is no coincidence that a classification distinguishing dozens of "lifestyles" largely in terms of distinct consumption behavior should have appeared in late 20th century America. Affluent consumers are able to construct a personal and social identity through discretionary purchases, permitting unprecedented numbers of individuals with similar employment characteristics to indulge in distinctive consumption patterns. Affluence and urbanization encourage individualism and freedom from ties of tradition. New types of jobs associated with computer-based information technologies are hard to characterize by class. With the dramatic growth in dual worker families, and in non-family households, the concept of a male head of household (not to mention the significance for the entire household of his employment) lost much of its former explanatory power. Widespread higher education created substantial inter-generational social mobility, weakening self-identification by class. Indeed, today few would doubt that a household's lifestyle can not

readily be inferred from the employment of one household member or total household income and that discretionary aspects of a household's lifestyle are key determinants of its impact on the environment and its prospects for change. The relevance of these concepts for developing countries is addressed below (in section 6).

Discussion

A small number of class or income categories is not adequate to characterize the population of a contemporary affluent society for purposes of mapping their lifestyle choices. The wide use of the market research clusters has demonstrated that there are empirical grounds for distinguishing a much larger set of categories, mainly on the basis of consumption behavior. But the cluster schemes are not an appropriate classification for a SSS. They assume that neighborhoods are homogeneous in lifestyle, and over time the neighborhood of interest to market researchers has gotten progressively smaller, often as small as a single household, and the intention is to track and market to that household, or its individual members, wherever they are using wireless technologies.[4] This goal is driven by a vision of increasing individualization (and contributes to it) while those concerned about sustainability are committed to a vision of social (as well as ecological) interdependence.

SSS researchers can make use of the market research breakthrough by using the dozens of geodemographic clusters to guide a substantial disaggregation of class or income categories. The main contribution of the clusters may lie not so much in the idea of formally derived classifications but instead in providing an impetus for social theory that distinguishes households on the basis of their lifestyles and not only by income or one person's employment.

Forty household clusters for the US (shown, for example, in Duchin, 1998, Table 3.1) are described by market researchers in terms of 5 main variables: social class (different clusters are referred to as wealthy, upper middle class, lower middle class, working class, blue collar, or bohemian), ethnicity (some cluster attributes are: multi-ethnic, predominantly black, Hispanic barrio), neighborhood density (big city, mid-size town, small town, suburb, outlying suburb, sparsely-populated rural community, remote farm town), housing style (high-rise, row houses, townhouses, condominiums, apartments, bungalows), and point in the life cycle (singles neighborhood, child-rearing community, retirement community).

A good starting point for developing a new classification system would be to define a few dozen categories combining measures of household employment and income with measures of the presence of children, neighborhood housing density, the household's housing style, some indication of ethnicity (including "mixed ethnicity"), and point in the

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[4] David J. Phillips and Michael R. Curry, 2003. "Privacy and the Phenetic Urge: Geodemographics and the Changing Spatiality of Local Practice." In D. Lyon, ed., *Surveillance as Social Sorting: Privacy, Risk, and Automated Discrimination*, (London: Routledge). [Note: "phenetic" is said of a classification based on similarities and differences but without reference to evolutionary relationships.]

household's life cycle. A first test of the resulting classification would be success in assigning all households to some category.

3. Classification Concept for Activities

Among existing classifications of activities, the most elaborate is the United Nations' International Classification of Activities for Time-Use Statistics (ICATUS), with ten categories at the most aggregate level and several hundred at the most detailed. The main focus of this classification, which is still being tested, is on production activities: it records how time is spent in both paid and unpaid work, expressly including time spent on all types of unpaid work by women in developing countries (such as carrying water). Non-production activities are also included, defined as things you do for yourself that no one else can do for you, such as reading, sleeping, or having a religious experience. (Anything you do not do for yourself alone is considered work!) The classification is intended for time-use studies recording how individuals spend the 1440 minutes in a day.

A set of activities intended to distinguish how different kinds of households construct their lifestyles was described by Duchin (1998, Table 3.2) to include the way a household provides its members with:

Food
Care for young and old
Health care
Personal care
Education
Clothing
Recreation and entertainment
Vacations
Household furnishings and maintenance.

While these activities are subsumed within the exhaustive ICATUS categories, the 2 classifications clearly reflect different objectives. Take food and clothing. For ICATUS, shopping for food or clothing and cooking a meal or washing clothes are considered unpaid work, and the objective is to determine how much time is spent at each activity. In the SSS framework I am describing, the interest in food and clothing is to determine several patterns for diet and eating-out practices or for the size of wardrobes and practices for keeping them clean. It is an open-ended inquiry, yet one that is ultimately anchored when relevant in quantifiable purchases of specific goods and services.

4. Recent Research on Household Lifestyles and Sustainability

Applied physical scientists concerned about the environmental implications of the use of energy and materials were among the first to focus not only on technological choices in production but also on alternatives in consumption and differences among lifestyles. The pioneering work in the quantitative, model-based analysis of household energy use is that of Bruce Hannon and his colleagues ([8], [9]) in the United States. Wouter Biesiot and his colleagues in the Netherlands built on a long history of energy studies when they turned their attention to households in particular ([1], [2], [10]). My own interest began in the

early 1990's when I became convinced, on the basis of an analysis of the Brundtland Report using a model and database of the world economy [6], that technological change in the production process would not turn around the major environmental challenges we face. In the early days of the Industrial Ecology community, I examined the use and disposal of plastics by different categories of households and found systematic differences based on affluence and density of living conditions [3]. I assembled my ideas about an approach to studying household consumption in a book-length manuscript that introduced the 2-way classification of the population of a country by household types and by household activities and applied these concepts to an examination of the households of Indonesia, using a model and database that I had assembled for other purposes [4]. Most recently I developed a new model of the world economy with features customized to an investigation of scenarios about both technological changes and lifestyle changes in all parts of the world. In the last few years interest in the environmental impact of consumption has increased dramatically, and several key interdisciplinary journals include important new work ([7] and [11] are excellent examples). Some of this work disaggregates households but without the benefit of an explicit classification principles. Most studies focus on the use of energy or materials, while others inspect the entire consumption package of purchased goods and services. If some consensus emerges from the research that has already been conducted, it is to highlight the importance of 3 areas of household behavior: choices regarding food, housing, and transportation.

A body of work has already begun to explore the implications of changes in household diets. There are 2 main reasons for this choice. One is convenience: diet and changes in diet are relatively straightforwardly mapped to a few schematic possibilities (e.g., meat-based diet, Mediterranean or vegetable-based diet, or rice-based diet). Eating lower on the food chain involves increasing the quantity of input of some types of foods (in a database) and decreasing that of others. Unfortunately, housing and transportation choices are much harder to disentangle and characterize. The other motivation for a focus on diet is the central importance of agriculture in mediating the impact of climate change back into the economy. The study of scenarios involving agriculture, food, and diet is a key area for collaboration among social scientists and applied natural scientists and, in particular, among modelers of the climate system, the biosphere, and the world economy. Several of us at this workshop are engaged in such collaboration.

Probably the greatest payoff for the environment could come from changes in housing and transportation practices in the rich countries, serving as an alternative model to suburban sprawl. The ability to analyze alternatives to current practices, in combination with actually achieving them on a demonstration basis, could be extremely valuable. The combination of the automobile and the low-density suburb is an American creation of the second half of the 20th century, already emulated in other societies. Decisions regarding location, housing style, and mobility are arguably the most central determinants of lifestyles (besides fertility) and also the most important for their impact on the environment. "New Urbanist" architects and the "Smart Growth" movement more generally have identified a commitment to pedestrian-oriented, mixed-use, mixed-income neighborhoods as central to reversing sprawl. Studying the impact of such neighborhoods has until now been outside the scope of those who analyze household use of energy and materials, as it is a complex story and one that depends upon changes in the practices of developers and in zoning laws – and the conviction that people want to live in them. Scenarios about the spread of "livable cities" could be approached with the methods that are described in this paper.

6. Lifestyles in Developed and Developing Countries

People in all situations need to carry out the basic life activities discussed above. It is likely that fewer lifestyle categories will be required to describe the population in developing societies to the extent that affluence and a profusion of consumer choices are the main reason for a proliferation of lifestyles in the developed consumer societies. Nonetheless, the identification of different lifestyles should prove as useful as in the case of developed countries. Since households in developing countries display more variance in fertility than those in developed countries, this variable will be especially important in distinguishing among lifestyles. They will clearly be changing their diets (toward more animal products), their housing, and their access to cars and roads. Because of their numbers, how they do so will in the medium term make even more difference from a global environmental point of view than the direct effects of lifestyle changes in the rich countries.

Mass communications assure that the poor throughout the world are familiar with how the rich live and aspire to similar levels of comfort and luxury. Lifestyle emulation, especially by the elites and emerging middle classes of the developing world, is as important a mechanism as technology transfer in its implications for the environment, but it has barely begun to be studied. A more concrete interpretation of lifestyle, along the lines described in this paper, could provide a stimulus for this area of research.

Lifestyles and consumption are, of course, directly linked to production, technological choices, employment, the use of energy and materials, and environmental degradation. Lifestyle changes in one part of the world have repercussions elsewhere through these linkages, and the interdependencies are strong. Developing countries have come to depend on growth of developed economies to absorb the output of their own growth and development and to fuel it (that is, for exports and foreign direct investment). If a commitment to unending growth is not to be built in to notions of sustainable development – and naturally it can not – then it is indispensable to regard the future options for developed and developing countries as a single system in order to identify plausible, not to say attractive, scenarios for the future.

7. Next Steps

This paper has emphasized the importance of developing two classification systems for the purpose of studying the relation of lifestyles to environmental sustainability. One is for activities, which are further distinguished by different ways of carrying them out, and the other is for households grouped by how they carry out these activities. While abstract considerations can help us devise classifications, the only way to refine and test the usefulness of candidate classification categories is to select samples of households on the basis of their attributes and explore how they carry out specific activities. Recent progress in the compilation of environmental accounts and time-use studies shows that if the feasibility and value of new classifications and data sets are established, the United Nations Statistical Office and individual national statistical offices will be motivated to make the new concepts operational.

The number of children an adult raises and the provision for a household of food, housing, and transportation are key lifestyle-defining activities, and we need to understand much better the options households consider and the interdependencies among these decisions. Interviews of households about a preliminary list of activities will provide new knowledge about commonalities and differences among households and help refine the household and activity classifications. Many new ideas are in the air today regarding sustainability. A few conceptual organizing devices can facilitate collaboration across disciplinary lines and areas of professional practice. The time has come for economists to devote far more attention to consumption, and this shift portends new possibilities for collaboration with other social scientists that are especially promising for sustainable development.

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