Title
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A DISCUSSION PAPER[1]

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Abstract: In this conceptual paper, I discuss the lifestyle approach as a possible sociological contribution to the interdisciplinary discourse on climate change mitigation. The lifestyle approach could integrate sometimes contradicting results from micro-economics, social-psychology, cultural anthropology, as well as from social geography, and relate them to resource consumption. Even if the word "lifestyle" is very popular within environmental discourse, it has rarely been used in a sociological sense. Lifestyles are bundles of meaningful routines (not only consumption) embedded in everyday practices that have a cultural-symbolic as well as a material dimension. To assess the potential of behavioral change, it seems not to be sufficient to study the effects of values and attitudes on environmental behavior as separated from other social activities. Conflicting goals and individual priorities have to be taken into account as well. Lifestyle changes are dependant on individual opportunities to choose between different options. People need financial, cultural, or social resources to realize their values in everyday life. I suggest an integrative lifestyle model, which reflects these levels. In the second part of the paper, I sketch its potential value in the case of car use. The system of automobility affects the chances of many people to create a meaningful life. It allows new lifestyles but it also limits the feasibility of other lifestyles at the same time. Environmental policy could support the creation of new, more sustainable lifestyles by reducing the lock-in effect of automobility and reopening this socio-technological system. In this paper, lifestyles are treated as an interpretative scheme, but I also like to encourage further operationalization efforts.

1. Introduction

Fighting Global Warming has become an economic stimulus package: green technologies are supposed to ensure future prosperity. In contrast, day-to-day practices embedded in existing infrastructures as well as in culture have rarely been seen as a drawback to a sustainable society. Auto manufacturers, regulatory agencies, and environmentally aware consumers work together to improve the efficiency of cars. In contrast, fewer resources have been spent on changing the

[1] This paper serves as an introductory discussion paper for the Workshop "Climate Change Mitigation: Considering Lifestyle Options" which will be held on May 1, at the University California, Berkeley. An earlier German version will be published in Voss, Martin (ed.), 2009, Klimawandel: Sozialwissenschaftliche Perspektiven. Wiesbaden, VS-Verlag. This volume is the result of a discussion about the potential contribution of sociology to environmental conservation.

socio-technical system of automobility that is deeply rooted in today's Western societies causing a vast number of environmental (e.g. land use, waste) and health problems (e.g. crash victims, obesity, asthma) in addition to CO_2 emissions. In fact, hybrid and electric cars are likely to support the continuation of unsustainable lifestyles and urban sprawl. In addition, many so-called green, consumption-oriented lifestyles are not as environmentally friendly as some may believe. Many people drive extra miles to purchase organic food from a farmers market or buy green products in specialized stores outside the neighborhood. Green is fashionable but is it also sustainable? Quantifications of the actual ecological effects of different "green" lifestyles are still rare despite promising methods. Examples for such approaches are measuring ecological footprints (Wiedmann et al. 2006), CO_2 household production (Lutzenhiser and Hackett 1993), or household energy consumption (O'Neill and Chen 2002).

Despite the resistance against regulatory action during the Bush administration, the appeal of climate change as a political issue lies in its seemingly simple cause-effect-relationship: greenhouse gas emissions cause a higher average temperature in earth's climate system with catastrophic consequences. New technologies reducing CO_2 emissions would allow consumers to act without being threatened by the perceived discomfort of substantial lifestyle changes. In policies centered on technology, lifestyle changes are often considered risks to the economic development. Today's "ecological realism" dismissed utopia and seeks a symbiosis of green luxury and the commitment to environmental protection (Rink 2002: 11f.). Why does it seem that so many more people are willing to pay than to change their behavior? Green lifestyles are expressions of individuality, group identity, and fashion. They provide identification with subcultural milieus and offer social distinction (Bourdieu 1984). This lies in the social "nature" of lifestyles; but it bears an important question for environmental sociology: How can policy-makers address the expressive function of lifestyles? The answer might be especially interesting for social movements that do not have access to legal or pecuniary steering instruments but that do have a strong influence on culture. I cannot provide an answer here. Instead, I will sketch some ideas toward a framework integrating different social science approaches.

The remainder of this conceptual paper has the following structure. In the next, *second* section I will discus some problems that lifestyle research could address within interdisciplinary environmental studies. In the *third* section, I will outline the role of lifestyle approaches in inequity research and consumption sociology. My goal is not a more or less conclusive classification of different social strata, market segments, or sustainable or unsustainable lifestyle patters. Instead, I suggest analyzing the stylization of life as an active process. I assume here that the chances for the development of more sustainable lifestyles result from their specific social functions and in the complex mechanisms of lifestyle creation by individuals. The *fourth* section deploys a critique of the lifestyle discourse from an ecological perspective. In the *fifth* section, I will demonstrate the potential of lifestyle analysis with car usage. I will criticize approaches that focus mainly on the replacement of single trips by other means of transportation such as walking, biking, or public transportation. Cars are "lifestyle machines" for many. Thus, a significant reduction of car use requires fundamental lifestyle changes. The lifestyle concept allows an integration of different social science approaches (e.g. geography, economy, and anthropology) as well as an estimation of the resource consumption connected to different ways of life. The focus of the *sixth*, concluding section lies on operationalization problems and policy implications. Both show that the application of lifestyle concepts to environmental problems still requires a lot of research.

2. Lifestyles as boundary concept in environmental research

In today's environmental policy, the consumer society is the dominant frame of reference. A system of norms toward sustainability is supposed to influence buyers' decisions. Government policies focus on production rather than on the limitation of individual consumption. Legal regulations push toward "greener," recyclable, and more energy efficient products. Policies targeting individual consumption provide usually monetary incentives or they tax unsustainable activities. Unfortunately, consumers quickly become accustomed to weak price signals and often return to their former behavior after a short adaption period (Princen et al. 2002). The small effect gasoline prices have on driving habits is just one case in point. Nevertheless, social change is an important strategy for reducing greenhouse gas emissions. Some of the far-reaching hopes for new technologies are facing setbacks already. The environmental effect of hybrid cars has been overrated (Høyer 2008) and the EU abandoned its goal to reach 10% biofuels share by 2020[2] that could cause food shortages and deforestation in other countries (Charles et al. 2007). What could be done so that cars would not only burn less or "better" gasoline (or use electricity), but so that people would actually drive less?

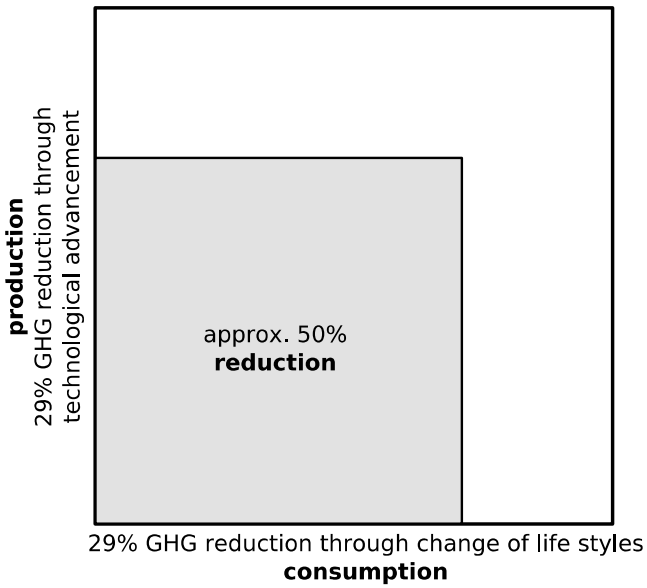

Figure 1: Hypothetical effect of a combined strategy of lifestyle changes and technology advancement to reduce greenhouse gas emission (GHG)

Figure 1 shows with hypothetical numbers the high potential of environmental policies that would encourage technological innovation as well as the actual reduction of consumption behavior (e.g. by lifestyle changes). I do not consider improvements in efficiency, i.e. less consumption without behavioral change, as a strategy on its own. I would place most of the efficiency gain on the technology axis. This is an important difference to the popular three-legged stool analogy for transportation (car) carbon emissions (e.g. Erwing et al. 2007: 12; Sperling and Gordon 2009).

[2] The Guardian, Saturday, April 19, 2008, www.guardian.co.uk, last retrieved March 22, 2009.

The first leg stands for alternative fuels, the second is higher efficiency, and the third is vehicle miles travelled (VMT). This model has a leaning toward technology and it does not question the centrality of the auto mobility system. Additionally, the third leg—less driving—does usually not get the same amount of attention as the other two. Current estimations of the potentials of less VMT are not very optimistic. In a review of planning literature, Ewing et al. (2008) conclude that changes in urban planning priorities could reduce only 7-10% of transport carbon emissions until 2050. These scenarios consider only moderate lifestyle changes. The simple model presented here suggests a parity of technological and social change strategies; however, one cannot blame different disciplinary approaches for their efforts to reduce CO_2 emissions. The difficulties lie rather in conceptual problems of environmental sociology that prevent sociologists from participating in the debate on the same advanced level.

Of course, lifestyles and technologies are inseparably interconnected. The distinction outlined above is only analytic. However, it is important to discuss where environmental policies could intervene to make a difference in greenhouse gas emissions. As I will sketch a little later, this separation is also part of the problem. Education and social marketing toward sustainability and technological improvements are rarely integrated. Furthermore, the connection between these two dimensions is pretty much a black box to most researchers and politicians. I suggest here that we begin to study these connections in detail. Lifestyles are an interesting vantage point for such an open-ended endeavor. Educational and marketing efforts can only be fruitful if people have the possibilities and resources to realize new norms and attitudes toward sustainability within their everyday life, and the adaption of new technologies is only one way to do so. If lifestyle changes were more readily embraced, then existing technologies—e.g. railroads and public transportation—could be used in the development of a more sustainable society. Of course, the lifestyle concept has its limits. It can only in part explain why many politicians prefer the support of technology development to a better use of existing options that would be quickly available. One reason is that consumers often create lifestyles around new technology. Many consumers are willing to spend more money to be at the frontier of technology development. Another reason is that private venture capital is more readily available than public funding for big infrastructure projects in today's capitalist society.

Empirical studies using the rational choice framework insulated a number of important determinants of environmental behavior (e.g. Diekmann and Preisendörfer 1992; 2001). In addition, psychologists studied the boundaries of rationality in environmentally relevant decisions. There are a number of complex reasons explaining why people often do not act rationally or according to their opinions and value preferences (Gärling u.a. 2002). Compartmentalization of different practices, incomplete information (Bartiaux 2007), or habitualized behavioral patterns, to list a few of these reasons (Klöckner and Matthies 2004). Furthermore, behavioral change has been shown to be more likely if it does not conflict with the self-identity of partaking individuals (Hobson 2006). The lifestyle approach could contribute new insights to this. It focuses on the cultural context of individual decisions as well as on the constraints of behavioral change that result from social stratification as well as from infrastructure. The lifestyle approach not only focuses on the satisfaction of material needs, but it also addresses the expressive and identity-building function of consumption (or the refusal to consume). What does it mean to people to move to a specific neighborhood? What do they express by engaging in certain leisure activities? What do certain branded products connote? Many studies question under which circumstances sustainability could become a central part of the individual way of life. In contrast, only a few studied the positive ecological effects of lifestyles not centered on the environment itself. Last but not least, the life-

style approach is grounded within cultural means as well as in the material resources for problem coping within a given society.

The appeal of the lifestyle approach lies in its multi-dimensionality that makes it a useful boundary concept (Star and Griesemer 1988) despite conceptual difficulties (Lange 2005). Boundary concepts are starting points that allow scholars from different disciplinary cultures to communicate with each other. They are usually adapted from the everyday usage of a word rather than from theories of any of the participating disciplines. Scholars need to negotiate and adjust the particular meaning of such a concept to meet the needs of common interdisciplinary work. The formulation of the lifestyle concept is still at the beginning. Because it provides an anchor, or common ground, within everyday communication, lifestyles are also a valuable concept for the public environmental discourse. People talk about lifestyles all the time: They want to change or sustain lifestyles and they criticize the lifestyles of others. Lifestyles are meaningful bundles of activities, and these activities gain their significance in relation to each other. Because lifestyles are rooted in networks of personal relationships as well as in the wider socio-cultural context, it is therefore difficult to change single habits. With the lifestyle approach, it can be taken into account that the environment is not so much affected by opinions and attitudes but by actual practices (Bartiaux 2008: 1171; Princen et al. 2002: 14-15). Lifestyles connect meaning, practice, and resource consumption which each other. This way it seems to be possible to study the interconnections between the symbolic and the material level of society.

The centrality of the cultural dimension requires studying lifestyles *within* nation states, regions, or ethnic groups. Nevertheless, unsustainable lifestyles have global effects (Giddens 1991: 2). The lifestyle of a certain group affects often the chances of another's to create their own meaningful way of life. There is no space for the stylization of life if people are fighting for survival because of rising sea levels, declining harvests, or regional conflicts. The adaption of Western lifestyles by the majority of the earth's population is impossible anyways: it would require no fewer than five planets Earth (Duchin 1996). Even more, unsustainable elements of Western lifestyles are very attractive to the middle classes of developing countries such as China and India. Without doubt, the lifestyle approach touches on problems of environmental justice.

3. Lifestyles in Sociology

The lifestyle approach provides a tool with which to study the interconnections between global warming, individual action, and social change for different reasons: *First*, lifestyles are meaningful formations of practices that are dependant on environmental conditions. The way people live has a strong influence on environmental conditions itself. Lifestyles connect the individual way of life and society on a material-energetic as well as on a symbolic level (Reusswig 1994: 42). *Second*, the symbolic repertoire or medium with which people express their individuality is part of the culture people live in. Nevertheless, the fact that people choose or create their own way of life from the available cultural and natural resources is central. Continuous experimentation with lifestyles is a productive force of cultural variation and social innovation, even if nature, culture, and social infrastructure are limiting factors. The quest for sustainable lifestyles needs to take into account the resulting tension between individual creativity and structural constraints. *Third*, the embeddedness of every day activities in lifestyles—formed as individual responses to specific societal conditions—explains why individuals make purely rational decisions only under specific circumstances. In low-cost situations, when no other activities and goals are at stake, many studies explain environmental-friendly behavior with attitudes towards the environment reasonably well (e.g. recycling, driving a hybrid-car). If sustainable behavior required a fundamental change

of certain lifestyles, the discrepancy between opinions and attitudes toward environmental protection and actual action widens because of immanent priority conflicts (Diekmann and Preisendörfer 1992; Ungar 1994). Once adapted, individually reinterpreted, and formed, lifestyles are relatively stable patterns of action and behavior (Reusswig 1994: 127; Lange 2005: 4).

The complex relationship between the socio-economic situation of an individual and different forms of social-cultural expression has always been a subject of study in sociology (Holt 1997: 326). With the decline of traditional structures of authority and binding religious beliefs that once provided meaning to people's lives, the individual pursuit of a meaningful way of life has been subject to individual decisions. Max Weber introduced lifestyles as a second dimension of social stratification in addition to the economically determined classes. With the stylization of life, people express their identity with a certain group, e.g. a profession (Weber 1972: 538). Accordingly, lifestyle changes occur often along with a change of vocation or when passing from one stage of life to another (ibid. 308). Weber described how individual stylization of life depends on the actual possibilities and resources that allow individuals to choose among alternative options. Such *life chances* result from the position of an individual within society. Bourdieu (1984) showed that cultural preferences and consumption patterns vary between social classes. He highlighted the distinctive function of lifestyle choices and their stabilization by consumption preferences. The members of a social group have often similar music, reading, movie, or even home decoration preferences. Taste consists of these combined demonstrations of preference. Taste proved to be independent from short-term changes in income or educational advancement. Consumption is a relatively autonomous societal field with its own logic and dynamics. It is not independent from other fields, but the influence of the economic field is limiting and not determining. The stability of lifestyles during a lifetime and sometimes even over generations explains the endurance of different cultural preferences despite the fast changing economic and educational conditions in the 1970s.

Lifestyles became a prominent concept of social structure analysis in the 1980s. In contrast to Bourdieu, German sociologists stated that class affiliation could not explain the plurality of social situations and cultural expression within the post-industrial society anymore (Schulze 1997). The expansion of higher education and the increase of real wages generated new life opportunities and hence, as effect of individual choice the diversification of lifestyles (Beck 1986: 121-122). Thus, these authors observed inequities primarily in consumer behavior, value orientation, and cultural preferences. The economic situation of an individual did not seem explain social differences; instead, inequity was seen as result of the active expression of identity (expressive inequity, Lüdtke 1994). Of course, the vertical income stratification did not disappear. However, since all income groups earned more than ever before (elevator effect), the members of lower income groups gained new possibilities and income disparities did not seem to matter as much anymore. The horizontal differentiation of heterogeneous subcultures seemed to be more significant. The lower correlation between socio-economical variables and consumer behavior was seen as an indicator for a general trend toward postmodernization (Beck 1986: 124pp.; Holt 1997: 327).

The hopes for social equity that the lifestyle concept once generated are mostly gone (Otte 2005). In Western societies, income inequity grew during the 1990s and the 2000s. Furthermore, the classification of a society in ten to twelve lifestyle groups (Spellerberg and Berger-Schmidt 1998) or milieus (Schulze 1997) conflicted with the hypothesis of further individualization predicting a continuous cultural fragmentation (Rössel 2005). A closer look reveals that many lifestyle or milieu classifications still describe differentiations *within* classes even if the boundaries between them have become blurry due to a higher social mobility. Ironically, Weber found that societies

tend to describe themselves in terms of lifestyles during economic prosperity and in terms of classes in times of crises. The lifestyle approach I suggest here does not provide a typology of social stratification or cultural segments; it rather suggests a functional lifestyle theory. The stylization of life can be understood as an individual decision-making process that assigns meaning to sometimes tedious efforts to reach certain goals in life or to surrender such goals in favor of others (sense tinkering, Hitzler 1994). Giddens (1991: 80f.) defines lifestyles as a set of practices that provide orientation among the large number of possible decisions in every-day-life. Such practices and the habilitation of behavior not only allow a time efficient satisfaction of elementary needs, but they also provide identity to individuals in a material form. Since others can observe these practices, they signal distinction and provide a sense of belonging.

Alongside the cultural dimension and the individual meaning of lifestyles, it is necessary to highlight the importance of different life opportunities or as Weber would say life chances resulting from the position of a person within a given society and affected by the action of others. In social research, the lifestyle approach cannot replace other social categories such as class, educational level, age, or race. Due to the unequal distribution of life opportunities among the members of these overlapping groups, lifestyle and one person's affiliation with social categories correlate with each other. Within the environmental justice discussion, it is important to account for the actual, e.g. economic chances of an individual to pursue a more sustainable lifestyle. In particular, the availability of material wealth, cultural capital (Bourdieu 1984), and social capital (Bourdieu 1984; Putnam 2000) determines the life opportunities of an individual. Whether the integration of natural capital (Wackernagel u.a. 1999) in ecological lifestyle analyses would be possible remains an open question. However, such an approach could be fruitful if the hypothesis of the partial substability of different sorts of capital could be applied to resource consumption.

Until recently, lifestyle research focused mainly on leisure activities and consumption patterns (Degenhardt 2007:36). Consumption objects are not only useful; they also carry cultural meaning (Bourdieu 1984; Barthes 1990). A large spectrum of consumption options is a precondition for the pluralization of individual lifestyles. However, only a few leisure activities or consumption objects symbolize immediate meanings to everyone. Rarely do consumption objects present social categories such as class, gender, or profession. People's consumption decisions subtly balance individuality and the identification with a certain group or subculture. Objects only obtain meaning through use, and these meanings change within group activities. In today's media society, television as well as new media produce virtual identity groups using pop-culture and advertising. Nevertheless, the social meaning of a single product generally varies among different groups (for a review see Holt 1997). While a little compact car can represent the "freedom of automobility" within a low-income family, a wealthy middle-class household could interpret the usage of the same car as a contribution to environmental conservation.

Marketing experts have identified the members of the wealthy middle class with an ecological value orientation as a valuable target group. They celebrate so-called LOHAS (Lifestyles of Health and Sustainability) as a vanguard for a sustainable economy (Howard 2007). The members of this group have disposable income and are willing to pay more for allegedly healthy products, alternative medical treatment, organic food, and natural cosmetics. Thus, they constitute a new market segment. However, since they consume more than poorer parts of the population, it can be questioned whether such lifestyles are actually sustainable. The question remains: should one evaluate behavior changes according to relative effects such as reducing emissions by 20%, or by actual sustainability – using only a certain amount of resources? Today's short-term polices prefer the first approach and implement reduction goals independent of actual consumption lev-

els. The problem has a political dimension too. Guthman (2003) demonstrated that, in the case of food choices, the distinctive function and the resulting middle-class bias of so-called ethical consumption ends up excluding most minority groups for both financial and cultural reasons. If ethical consumption generates new specialized markets it just takes the political pressure off the general markets. The growth of the farmer's market movement and the extreme expansion of fast food chains seem to be connected in a society where class matters more than it did two decades ago.

Environmental sociology cannot limit lifestyle analysis to the identification of consumption patterns. The prevalence of consumption-based lifestyles rather raises the question, whether the function of identification and group affiliation could be partially substituted by less- or non-consumptive activities. The Deep Ecology movement promoted such an approach based on self-realization and spirituality as a substitute for consumption (Naess 1990). Inglehart (1997) proved that the meaning of the consumption of material goods decreases with a postmodern (or post-materialist) value orientation. The subjective importance of self-realization and non-consumptive leisure activities increases at the same time. The value of environmental conservation to people with a postmodern value-orientation is not necessary good news. The lower priority of consumption does not necessary mean that people buy less. In many cases, the devotion to a way of life centered on social engagement, education, cultural events, and environmental awareness, results from the satisfaction, if not over-satisfaction, of material needs. People who have almost everything are not able to draw as much satisfaction from buying even more.

4. A critique of some ecological lifestyle approaches

The knowledge that more sustainable development would require far-reaching changes of (Western) lifestyles has always been an integral part of the ecological discourse (World Commission on Environment and Development 1987; Giddens 1991: 221; Brand u.a. 2003: 7). However, the term "lifestyle" often lacks theoretical conceptualizations. The call for lifestyle changes has often been merely a plea. It only rarely took the complex structure of individual lifestyles into account. Many people do not change their lifestyle even if they know about the potentially catastrophic consequences of global warming. Assumptions about self-interest or even dullness have been common ad-hoc explanations for this phenomenon. From a sociological point of view, targeted lifestyle policies experience many difficulties. Environmental guidance principles often conflict with established behavior patterns and central goals of life (Lange 2005: 8pp). Day-to-day practices and existing lifestyles are deeply interwoven. For this reason, all-too naïve requests for radical behavioral change often simply die away. The technological approach has an advantage here. More efficient or cleaner technologies would allow the realization of norms toward sustainability within already stabilized lifestyles (see figure 2a).

German sociologists applied the lifestyle concept in several ways to environmental sociology. Some authors used milieu classifications based on social strata and value orientation as independent variables for the explanation of environmental behavior. They studied the distribution of attitudes toward environmental protection and resource conservation as well as the likelihood of action among different socio-cultural defined milieus. Other approaches used attitudes and opinions toward the environment to develop alternative classifications of more or less sustainable lifestyles. Examples are environmental mentalities (Brand u.a. 2003), environment-oriented lifestyles (Preisendörfer 1999), or ecological consumption patterns (Empacher 2003). These classifications somewhat overlap with socio-cultural milieus; however the correlation seems not very strong.

Many concluded from the fact that a sustainable society needs a fundamental change of individual lifestyles that environmental protection and resource conservation need to be highly prioritized goals for everyone. From this perspective, so-called eco-pioneers who develop new lifestyles could become role models for everyone else (Degenhardt 2007). Social marketing strategies or lifestyle policies are similar approaches to promote more sustainable lifestyles. The identification of different consumption patterns would allow customizing such strategies for different target groups and addressees (Empacher 2003). My term for the concept that environmental education and ecological consciousness generate sustainable lifestyles is the ecological awareness model (see figure 2b). The expectations of actual behavior changes as an effect of education or social marketing campaigns have been too high. Greenhouse gas emissions grew substantially throughout the 1990s and 2000s despite the fact that environmental awareness entered the mainstream of Western societies in at the same time (Hobson 2003).

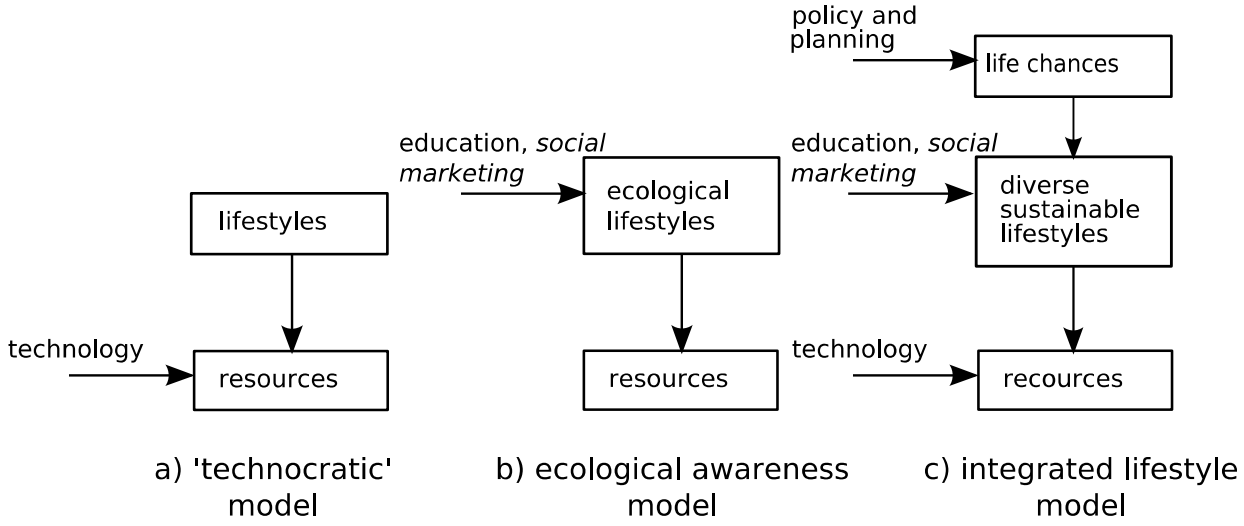

Figure 2: Different lifestyle models and possibilities of (political) influence

One can easily identify different reasons. Social change caused by education will have a delayed effect. It takes time for an environmentally-oriented and well-educated generation to take leadership within society. Additionally, the young generation has to struggle with the conflicting goals and value systems of the grown-ups. In an extreme case, these conflicts could render educational efforts untrustworthy. Another problem is the insulated perspective of today's environmental education and marketing efforts. Sustainable action is still widely treated as an additional activity not interfering with other life goals such as pursuing a career, investing money, traveling around the world, and buying a house. Even if these goals do not necessarily contradict with a sustainable lifestyle, they usually do conflict if financial resources are scarce. Instead of just adding environmental education to a curriculum or portfolio of socially beneficial activities, all domains of education (and life) need to be considered and taught according sustainable principles. The ecological awareness model proved to be very useful to explain the adaption of new more efficient or green technologies, but it rarely caused substantial lifestyle changes. Hobson (2003) argues that the exposure to sophisticated scientific knowledge rarely changes behavior. The difficulty lies in the interpretation process. Theoretical knowledge about climate change does not have a lot of

meaning within people's everyday life. Environmental knowledge seems more effective if it is linked to people's practices and common sense.

It appears to be very difficult to create new sustainable lifestyles through policy, advertisement, or marketing campaigns. As long as environmental protection and resource conservation are not widely adapted by mainstream society, sustainable lifestyles can provide meaning, identity, and distinction to individuals. That explains the attraction of social and environmental movements. Unfortunately, this principle works less effectively for the whole population. A generalization of one ecological lifestyle would conflict with the diversity that is inherent to the lifestyle concept. It would be good for the environment if everyone would act ecologically responsible. In this case, the ecological dimension would not provide a resource for the expression of identity and distinction anymore (Lange 2005: 10). This generalization of green lifestyles is unlikely, however. Even in a hypothetical eco-dictatorship, where government would restrict the possibilities to create individual lifestyles, the appearance of a counter-culture would be very likely.

Despite the pessimism according a generalized ecology oriented lifestyle, many elements of such lifestyles could be adapted by people with other priorities for their lives (for health life styles, s. Cockerham et al. 1993). It is a challenge for lifestyle research to admit the important difference between individual assigned meaning or sense and the actual environmental effects of lifestyle choices. The efforts to change peoples' attitudes toward resource conservation and the establishment of new norms needs to be accompanied by policies that make lifestyle changes more feasible and, most importantly, more attractive. The lifestyle discourse should not only focus on unsustainable life practices that need to be abandoned for environmental reasons; it also should highlight the life chances that alternative activities provide. The ancillary or co-benefits of environmentally-friendly lifestyle choices are starting to catch the attention of scholars (e.g. Younger et al. 2008). Lifestyle policies could and should focus more on life opportunities and new possibilities that would allow people to design their individual life on more sustainable grounds. In contrast to the technical approach, it also implies a change of life goals or a different structure of the every day life. The difference to the ecological awareness model is that such goals do not necessarily need to refer to the environment or sustainability. A few people will walk more because they like to conserve resources, many more people could walk because they enjoy their neighborhood, meet people on the street, or get exercise. The ecological effect would be still the same.

Along with Giddens, who described lifestyles as bundles of practices structured by individual meaning, I like to rephrase the problem of sustainable lifestyles. What alternative forms of individual expression could contribute to greenhouse gas reductions? How could people achieve central life goals that are not necessary connected to ecology in a more sustainable manner? Sociologists need to study the complex relationship between the social meaning and resource consumption more in detail. This way, lifestyle research could overcome its narrow focus on ecological lifestyles. That environmental conservation has a high priority in the value set of a person does not mean automatically that she or he lives a sustainable lifestyle. I suggest an integrated lifestyle model (see figure 2c). In addition to environmental consciousness and the economic structure of different incentives, three additional levels should be considered: *first*, the actual resource consumption, *second* and most important, the individual opportunities to realize attitudes and values within given social contexts and the available resources, and *third,* the social function of certain lifestyle choices. The latter is important because the surface value of an activity alone does not necessary explain why many people refuse to use alternatives. Even if a bus connection would be faster, cheaper, and less stressful than driving, many people would still choose to drive.

5. The system of automobility as an illustrative example

In this section, I am only able to illustrate this perspective in short. Because of the amount of existing literature and a very sophisticated state-of-the-art knowledge, I choose the car use as an example. Transportation contributes 13.1% of the worldwide greenhouse gas emissions (IPCC 2007: 36). Driving generates the biggest share within this sector (Urry 2004). This number does not contain other consequences of the car system that also contribute to climate change such as land use. The plea for lifestyle changes has been often translated in the necessity of driving less. The car itself does not constitute a certain way of life nor is driving a lifestyle. Cars are rather a part of a complex socio-technological system (Urry 2004, Geels 2005) that penetrates space and time. Thereby, it has generated new life opportunities. It opened up society for a vast number of new lifestyle choices. It also reduced other opportunities even before the consequences of climate change affected the safety or the food supply of people around the world. Streets and freeways cut through public spaces or damaged them by noise and pollution. On the streets as well as in city planning, the advance of the car has marginalized pedestrians and bicyclists for decades (Sheller and Urry 2003). The negative environmental, social, and health effects are widely recognized. Nevertheless, the system of automobility proved to be enormously stable. One reason is its embeddedness in the practices of modern society (lock-in effect). People evaluate alternative modes of transportation by comparisons with the car (Urry 2008) and rarely by alternative lifestyle options. In a British survey, 89% of the respondents who drove regularly answered that it would be very difficult for them to adjust their lifestyle to become car-free (Ryley 2006).

The car turned out to be an iron cage in the double meaning of the term; it has taken society hostage. This development is a result of policies that were heavily influenced if not designed by car manufactures and their allies. These interest groups not only relied on their expansive efforts to advertise a new lifestyle but also actively changed life opportunities by buying and dismantling whole transit systems all over the US (Doyle 2000). Despite the fact that the triumph of the automobility system was not entirely consumer's choice and despite changing policies, the effects of the infrastructures once in place on people's lifestyles are tremendous.

Transportation researchers generally examine car-use in pre-existing social-spatial settings. Many authors have questioned how attitudes toward the environment, financial incentives and discentives (Ryley 2008), or a certain environment-friendly political climate in a certain country (Borek and Bohon 2008), affect the decision to occasionally not drive. The question of the International Social Survey Programme (ISSP): "How often do you cut back on driving a car for environmental reasons?" is typical for this approach. It captures only behavioral change of people who actually drive. Car-free lifestyles are completely ignored. The ISSP question also masks the fact that other reasons not to drive other than concerns about the environment could have environmental effects too. The authors see the fact that education seems to explain the occasional use of car alternatives best as an indicator for the effectiveness of environmental education (Borek and Bohon 2008). They name constraints within existing infrastructures as a cause for the low explanatory power of the model, not as the core problem.

The boundary between the socio-economic and infra-structural determined life opportunities and the room for individual lifestyle choices are not clearly distinguishable. Additionally, the freedom to overcome certain social constraints is not equally distributed among different social strata (Friedrich und Blasius 2000: 34ff.). The possibility to escape the lock-in effects of the automobility system depends on the availability of financial, social, and cultural capital. The positive effect of the educational level on decisions occasionally not to drive might be truly an income effect.

Some studies showed that people with a higher income are indeed more likely to cut back on driving (Engel and Potschke 1998). The potential controversy whether education or income explain the effect is difficult to settle since income and education correlate highly in most societies. Nevertheless, the income interpretation seems plausible as well. Wealthier people generally consume more and consequently have higher potentials to reduce consumption without a substantial lifestyle change. Despite the higher likelihood of environmentally friendly decisions of middle-class people with a good education, income is still the best predictor for the *actual* carbon dioxide emissions of a household (Lutzenhiser and Hacker 1993: 60). Wealthier people pollute more despite their attitudes and value. The high discrepancy between environmental awareness (dimension of meaning) and sustainable lifestyles (dimension of resource use) is a challenge for lifestyle research.

Social geographers and urban planners studied the relationships between job location, place of residence, and individual mobility behavior (Scheiner and Kaspar 2003). The goal of approaches like smart growth, transit villages, or new urbanism is to facilitate sustainable lifestyles within the means of city planning (Cervero 2002). Some authors have criticized transportation planning approaches that assume that rationally deciding individuals need to get from A to B and that it would be possible to replace these trips by public transportation (Poudenx 2005). In contrast, mobility research showed for Europe that cars in general did not replace public transportation; instead, they generated new trips that seemed not practicable and were not undertaken before cars (Urry 2004: 28). An extension of public transportation systems that would allow the same lifestyles seems economically almost impossible (Poudenx 2005). Without doubt, the car produces new life opportunities; it opens up choices widely distributed in space. A well-paid downtown job and a big inexpensive house became compatible. The car allows maintaining social contacts with friends scattered throughout a big area and over long distances. Shopping malls extended the consumption offers and reduced prices at the same time. The necessity to commute itself has to be seen a result of lifestyle choices. The middle-class family's minivan used to shuttle children around from a college prep school to horseback riding and then to the piano teacher, serves as the accumulation of cultural capital. It has a distinctive function according to Bourdieu.

Putnam (2000: 204f.) pointed out the consequences of car-centered lifestyles for American communities. His work did not even focus on the environmental negative effects of driving. His starting point has been the dramatic decline of social engagement and communal activities during the last three decades. He identified television and suburbanization as main causes. People who live in the sprawling suburbs spent a lot of their time traveling along the sides of an imaginary triangle that connects the living space, the work place, and leisure activities. Originally, suburbs evolved as "lifestyle communities." The people living there are usually very similar in respect of age, income, race, and education. They originally choose their neighbors because of the similar social characteristics. The inevitable effect is an increase in social segregation throughout society. Ironically, people living in suburbia have less time to get to know their neighbors because they are driving on the highways that often destroyed neighborhoods in the center of the cities. The number of personal contacts within the suburban neighborhoods is significantly lower than in mixed downtown areas. People choose their friends within the full range of their cars. Again, cars produce seemingly more social homogeneity. Another effect seems to be more consumption of all kinds of products. The consumption orientation provides identification with medially constructed communities as created by television as well as the internet as a surrogate of local community activities (Maniates 2002: 45).

Even if the car proved to be a driver of lifestyles pluralization (and sometimes of their insulation), the system character of automobility limited the chances for the creation of car-free lifestyles. The built environment has a strong effect on the mode of transportation people choose. Automobility formed cities and landscape during the last 70 years, but not in the same manner everywhere. Especially in the US, the individual behavior of people varies widely between New York, Los Angeles, or Atlanta. There is a difference between cities with traditional city blocks and culde-sac neighborhoods. The former allows people to walk the shortest way between two points while the latter prevents people from passing through. In many cities, freeways insulate neighborhoods from each other with only rare chances to rich the other side safely by foot. Without surprise, the existence of sidewalks, social diversity, mixed land-use, and the proximity between residential and commercial areas are strong predictors that explain decreased car-use in certain parts of US cities (Cervero 2002: 271f.). Mixed neighborhoods integrating heterogeneous forms of businesses provide usually alternatives to car use. If important services, grocery shops, cultural venues, and transit hubs are close by, people can walk or bicycle. A socially diverse residential structure provides living space for service workers as well as for well-paid professionals. It could prevent both groups from commuting. In the meanwhile, the walkability of a neighborhood has a significant effect on property values (Cervero 2002). Using Google data, a website (www.walkscore.com) provides walkability ratings for every street address in the US (and less reliable for other countries as well) based on the availability of different kinds of businesses, restaurants, movie theaters, shops, services, and parks within 0.6 miles. Higher property prices in walkable neighborhoods are an indicator that many people prefer lifestyles with less driving (if not necessarily without driving). Unfortunately, this development of localized lifestyles around owned homes comes often with gentrification tendencies (Bridge and Dowling 2001). Sometimes, the workers who provide the services that make the area livable cannot afford to live in such neighborhoods by themselves. Many of them drive to their workspaces. On the other hand, public transportation systems often connect "walkability islands" that exist even within sprawling cities.

The spatial distribution of life opportunities shows that alternative transportation modes cannot substitute the central role of cars within many lifestyle designs. The system of automobility structures the every-day-life of many people. The substitution of car trips by public transportation within a lifestyle originally formed by the automobile can be only a crutch. Indeed, common complaints about the necessity of several inconvenient transfers can indicate a flaw within the design of public transportation systems. However, they can also be a sign for the inadequacy of the spatial dimension of a lifestyle (Chapman 2006). Most people would not move to a neighborhood that they could not conveniently reach by car. They move close to the highways that connect them to their workplaces. Fewer people seem to bother about the structure of public transportation systems. A fundamental change of transportation systems seems almost impossible without lifestyle changes that would abandon certain possibilities and gain others in exchange. The assessment of the potentials of such lifestyle changes needs also to take the social meaning and the expressive function of car use into account.

In today's society, the car often reveals as much about a person as her or his clothing. It might be too much to say that people dress more casually now than they did in the 1950s because of the expressive function of cars or because of the intimacy people often feel inside their private vehicles, but it might be true. It is difficult to foresee what new expressive functions could replace unsustainable life practices. Will car-free lifestyles create a revival of fashion? Could electronic gadgets—e.g. laptop computers and expensive mobile phones—be new means of status distinction? One example for the successful replacement of the material aspects of auto culture are bicy-

cles, even if they still fill only a niche within transportation. Bicyclists do not represent a uniform subculture anymore that present a certain environmentally friendly lifestyle or specific political views (Horton 2006). With the growing popularity of bicycling, a differentiation between bicycle cultures and bicycle fashions took place. For many bicyclists, distinction is very important. There are mountain bikers, recreational riders, commuters, and a fixed-speed scene among others. The number of different types of bicycles increased during the last two decades. Some, for example beach cruisers, are even fashion objects and in this respect similar to convertible cars. The bicycle can—at least in bicycle friendly cities—provide the flexibility and the freedom once promised by automobility. Bicycle-friendly planning seems especially successful if bicycles are understood to be, like cars, parts of a complex socio-technological system that provides specific opportunities for an individual's life. In some places, advocacy groups interpret and celebrate bicycling as a lifestyle option and generate community this way (Hanson and Young 2008; Pucher and Buehler 2008).

In comparison, authorities govern public transportation systems focusing on the trip from A to B, speed, and efficiency; this is a technocratic approach. In many cases, they plan routes along highway corridors and invest money in the direct competition with cars instead opening up spatial alternatives. Public transportation planning has neglected the lifestyle dimension for a long time. Ugly and inconvenient stations, vending machines that replace service personnel, a high control density carried out by armed security guards, permanent surveillance, and a set of rules that prohibit almost everything, cannot compete with the car system that is highly connoted with freedom. While many people enjoy coffee or food during their drive, this is not allowed on most buses and trains. However, public transportation has advantages as well such as reading or napping. If trains or buses are not overcrowded, people can relax without worrying about dangerous traffic situations, etc. The lifestyle advantages of the car may be overrated, but it is important to realize that people compare not only measurable facts as speed and costs. The individual meaning of transportation choices and their integration in every-day-practices are highly significant for environmental planning. This is true, even if people use individual heuristics to assess the feasibility of travel choices that might not stand the scrutiny of an engineer's perspective. Sometimes pleasant stations with coffee shops or news and food stands can increase the ridership of a public transportation system dramatically.

Long before cars became ubiquitous, manufacturers advertised driving as a way to create new lifestyles. Ironically, "nature" played a central role in these efforts. The car leveraged urban sprawl that had already started because of the proliferation of municipal railway systems. The car seemed to provide a life closer to the countryside away from the dirty cities of the industrial age. Henry Ford stated, "… we shall solve the city problems by leaving the city" (see Gunster 2004). In leisure time, the car opened up the wilderness—originally only accessible for adventurers—for almost everyone who could afford vacations. The love of nature does not go hand-in-hand with environmental conservation. Fondness of the natural environment might be a necessary requirement for a sustainable society, but it is by no mean sufficient. In today's society, the solution of many environment problems lies precisely in the cities where most people live. In addition to new ways of urban planning—e.g. compact cities (Jenks u.a. 1996)—a fundamental socio-cultural change is required (Wolch 2007: 374).

7. Conclusion

Environmental sociologists have often lamented the fact that the mainstream sociology neglects the natural preconditions of society (Catton and Dunlap 1979; Goldman and Schurman 2000; Lever-Tracy 2008). Is an overarching theory about the nature-society relationship necessary? The thirty-year quest for such a theory has not been fruitful. Sometimes, environmental sociology seems to even be stuck with this problem. Its contribution to the mitigation of actual environmental problems is still small when compared to natural sciences or engineering. Only few sociologists work within the different working groups of the IPCC although social sciences are well represented by economists and psychologists. In particular, natural science is successful because most of the time they do not bother what nature was. Instead, they focus on selective relations between measurements. The main challenge for environmental sociology is to develop similar reductionist strategies to allow the construction of theories that might be complex enough to observe and explain certain interactions between nature and society, i.e. between certain lifestyles and carbon dioxide emissions.

This conceptual paper considered lifestyles as a middle-range boundary concept. Most works that address environmental behavior have questioned the distribution of attitudes, values, and opinions among different social groups or looked for determinants of behavioral changes toward more sustainable practices. Few approaches tried to quantify the actual environmental effects of people's actions. A sophisticated lifestyle concept could possibly bridge these perspectives. How are the symbolic-cultural dimensions of the society and resource consumption connected with each other? Without doubt, closing this gap is still a big challenge for sociology. Nevertheless, the coupling of these dimensions is—if anything—loose. A rather general theory might be too vague and could possibly not provide effective guidance for action. One reason is that humans continuously reproduce and change the connection between social meaning and resource use during a complex process of life stylization. Thus, the relationship between the symbolic representative level of a society and its actual resource consumption is culturally and historically variable. It is matter of individual decisions as well as of politics.

The view that more sustainable lifestyles require a strong environmental consciousness throughout the population stands on the grounds of the assumption of a rather tight connection between attitudes, behavior, and environmental effects. Without a doubt, environmental education and social marketing do matter. Could "nature" as a central value within the society solve the environmental crises? There are reasonable doubts. In the consumer society, it would be the first time that a highly valued good would not provoke the wish to consume. It seems likely that people would wish for a life close to nature or travel to distant destinations even more. The use of energy-efficient compact fluorescent lights or recycling efforts would be a weak compensation for resulting environmental effects.

The operationalization of lifestyle approaches is difficult and still requires a high number of explorative studies. Could the inclusion of cultural variables improve the existing models of environmental behavior? Many studies show that socio-cultural variables indeed influence climate change perception and the preference for certain policy options (e.g. Leiserowitz 2006). But do they also influence behavior? The web of intervening variables is quite complex. What are the life goals that conflict with a sustainable way of life? What are the opportunities that individuals could realize cultural values in everyday life? In this paper, I tried to highlight the fact that most people who consume less than others do not so because of environmental reasons. In many cases, they are just not as wealthy. Some are more rooted in their community than others. Because of the correlation between income and resource consumption, it might be difficult to detect a the effect

of lifestyle in resource consumption data. To complete such a model, alternative lifestyle practices also must be taken into account. What do people do instead if they decide not to drive? And what possible environmental effect could such a substitution possibly have? Because of this complexity, the question remains whether the lifestyle approach could be formulated within a single integrative model or whether it just provides an interpretative frame for a multitude of sometimes contradicting findings of different disciplines applying various methods. But it seems to be inevitable to interpret lifestyle data by means of field research such as in-depth interviews and ethnographic observation of people's behavior, decisions, and choices.

Nonetheless, the lifestyle concept provides interesting vantage points for policy-makers. Climate change is not just a technical problem but a cultural one as well. Furthermore, non-sustainable technologies are deeply embedded in every-day practices and the material infrastructures of socio-technological systems reproduce or constrain life chances. It would be too optimistic to hope for a quick change of the automobility system. For this reason, the development of technologically-improved cars with lower emissions is important as well. However, environmental policies should examine existing infrastructures for alternative practices, travel modes, and spatial work-life-relations. This way the lock-in effects of the automobility system could be reduced and new lifestyle variations could appear. Policy-makers as well as ordinary people could evaluate these new lifestyle options in terms of the life quality they provide and according to their environmental effects. The support for non-consumptive forms of social expression could save additional resources even if they do not focus on the environment. Propositions such as the revival of public space, communal engagement, or even ecological citizenship are not new. Nevertheless, their realization has proven to be difficult and a central question for lifestyle research. However, the problems sketched in this paper cannot be solved by lifestyle research alone.

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