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Translations of Climate Change: Perspectives from a Florida Suburb

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Cover Page Footnote

All names of people are pseudonyms to protect the identities of the participants.

Introduction

Evidence suggests climate change is rapidly sketching a troubling future for our planet (IPCC 2013). The socio-environmental landscapes of this century will look and feel very different from the previous two centuries. With many of the world's most populated cities located in coastal regions, these economically important areas are especially vulnerable to a changing climate. If global sea levels rise by 3 or 4 feet (1 to 1.2 meters) over the next century, as predicted by models, major disruptions are expected (Karl et al. 2009; Hansen 2013). Developing countries are at heightened risk due to social and economic conditions, yet even developed countries, like the United States, have vulnerabilities. A recent study ranking the world's top 20 most flood-threatened port cities, using the ratio of economic average annual losses to gross domestic product (GDP), identified three within the United States: New Orleans (#2), Miami (#13), and Tampa–St. Petersburg (#15), (Hallegatte et al. 2013).

While the United States remains key in creating global policies for the regulation of climate change, U.S. public opinion on climate change remains divided, between those who accept and those who reject anthropogenic climate science (Antonio and Brulle 2011; Dunlap and McCright 2008; Fisher et al. 2013). The causes, issues, and potential solutions, though explored, have left a skeptical American public largely unswayed. Cities in the United States, particularly those situated in vulnerable coastal areas, thus become useful sites to study possible disjunctures between the public's knowledge of consumption and that of a changing climate (Bulkeley 2013). In light of the mismatch between knowledge and mitigating action, such insights become valuable to help craft strategies to reach a skeptical populace (Grothmann and Patt 2005; O'Brien 2010).

Perceptions of Climate Change

The climate data from international agencies is consistent. The Intergovernmental Panel on Climate Change's (IPCC) Summary for Policymakers states, "Human influence on the climate system is clear. This is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system" (IPCC 2013). Other scientific bodies, such as the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP), have also released comprehensive reports likewise implicating the overwhelming influence of human societies (WMO 2013; IPCC 2007). Yet, while climate data steadily indicates human influence, public opinion of climate change remains overshadowed by doubt (McCright and Dunlap 2011; Jacques et al. 2008). The general public, especially in the U.S., are skeptical of climate scientists, the scientific bodies

themselves, and the projections made by the scientific community in relation to climate change. This public doubt manifests in a dearth of carbon regulatory policies and adaptation strategies at the federal and state levels.

Natural scientists use geophysical studies of the climate to make predictions about the implication of continued fossil fuels use. They place less focus, however, on overcoming subjective interpretations of science and the social and cultural structures that influence environmental attitudes, beliefs, and values of publics. Human geographers use philosophical and methodological tools of investigation (O'Brien 2010) and offer an ability to fill the gaps between environmental knowledges produced by the scientific community and subjective meanings people create in relation to their everyday experience (Castree 2014). However, while geographers have been integral to the development of climate science (Stern et al. 1991), Karen O'Brien (2013, 7-8) argues, "human geographers have failed to shift the focus of the scientific discourse away from 'the environment' as the problem and towards an integrated understanding of change based on critical research on space, place, politics, power, culture, identities, emotions, [and] connections."

The growing body of literature concerning public perceptions of climate change, across many disciplines, considers the divergence between scientific knowledge and public opinion (Wolf and Moser 2011). In this context, many social scientists have taken up the task of understanding this dissimilarity through a holistic view of public perceptions (Bohr 2014; Hulme 2009; Jasanoff 2010; Pahl et al. 2014; Spence et al. 2012). As Shwom et al. (2010) found, people often prioritize decision-making factors into a hierarchical framework. Personal economic and political factors hold the highest significance, as considerations of cost and relationships to governing bodies are experienced daily. Moral valuations of the environment are often categorized as a low priority, especially global climate change, since the impacts can be spatially and temporary distant and the causation indeterminate.

Studies examining local perceptions of climate change suggest that scientists and policymakers ought to focus on connecting local experiential knowledge of weather patterns to climatic shifts to garner support for regulatory change (Donner and McDaniels 2013; Krosnick et al. 2006; Ruddell et al. 2012). These conclusions are, in part, derived from data revealing that conceptual constructions of global temperature fluctuations are embedded in political or other ideological frameworks. Therefore, they propose that support for policies to mitigate carbon emission can be achieved by connecting local perceptions of weather to global climate change, potentially bypassing ideological, partisan constructions. Ruddell et al. (2012) analyzed public perceptions of high temperatures across the Phoenix area and compared this data to actual temperature measurements with the city. They concluded that, "effective communication strategies to the public about the

risks of climate change should draw upon people's experience and local knowledge of their environment" (601).

Other studies, examining the way scientists communicate risks and how they are interpreted (or misinterpreted) by the public, argue that scientific communication of climate change thus far has not created public awareness in alignment with climate science or the implications of science (Bostrom et al. 1994; Leiserowitz 2006; Lowe et al. 2006; Zia and Todd, 2010). Bostrom et al. (1994), for instance, examined mental models and found that publics could not distinguish between global warming and stratospheric ozone depletion. The misinterpretation of science, in their view, can lead to behavioral changes by publics or policy changes in government which either do not address the problem or lead to ineffective strategies.

Psychologist Anthony Leiserowitz's (2006) survey of 700 Americans found that any concern or anxiety associated with the impacts of climate change was limited to people and nature in remote regions of the planet. Risk perception was muted at the local level. These findings are problematic for effectively communicating risk associated with climate change. Psychologically temporal and spatial distancing by the general public can serve to legitimize policy inaction at the national level.

Climate scientists have constructed somewhat confusing spatial and temporal frames in order for policymakers and publics to understand their responsibility and risk. Regrettably, by constructing these frames of reference based on varying degrees of uncertainty, these abstract predictions create distant temporal frames and spatial orientations which are themselves uncertain and, most problematically, outside the range of personal concern. The 2013 IPCC Summary for Policymakers utilizes such abstract and distant future projections:

"Increase of global mean surface temperatures for 2081–2100 relative to 1986–2005 is projected to likely be in the ranges derived from the concentration-driven CMIP5 model simulations, that is, 0.3°C to 1.7°C (RCP2.6), 1.1°C to 2.6°C (RCP4.5), 1.4°C to 3.1°C (RCP6.0), 2.6°C to 4.8°C (RCP8.5)" (IPCC 2013)."

Other qualitative studies attempting to unravel normative constructions of environmental issues—perceptions, knowledges, attitudes, ethics and values—have relied on close-ended surveys for data collection (see Axsen and Kurani 2012). Surveys can ascertain environmental attitudes and behaviors, voting patterns, and possible economic constraints, but cannot inform on how these attitudes are socially constructed. As stated, since climate change is a material phenomenon, which, for the most part, must be experienced and interpreted conceptually, this brands climate change a socially constructed entity. Identifying

those factors that play the most influential role in the social construction of climate change in the minds of the public could lead to policy decisions that would garner broader support.

Study Site and Methods

The present study focuses on Tampa Palms, a suburban community in Tampa, Florida, (Tampa - Saint Petersburg - Clearwater Metropolitan Statistical Area). Identified as one of the world's top 20 most flood threatened regions (Hallegatte et al. 2013), it is a coastal region characterized by steady population growth (2.47% per year) coupled with high energy demands. Tampa Palms is dependent on electricity produced by Tampa Electric Company (TECO) at the Big Bend Power Station. The power station is coal-fired and directly adjacent to the body of water known as Tampa Bay, connected to the Gulf of Mexico (see Figure 1).

According to the 2010 U.S. Census, Tampa Palms has 13,675 residents occupying 5,829 households. Most residents are married couples (40%) between the ages of 18-34 (37%), Caucasian (70%), with a median household income of \$73,822 USD. Research suggests that affluent groups, like those in the community of focus, are more highly educated, more environmentally conscious, exhibit higher levels of consumption in general, and produce the largest (per capita) carbon footprint (Gibson et al. 2011; EIA 2013). The study area thus enables a focus on the perspectives of affluent residents in a coastal suburb specifically identified as highly vulnerable to a changing climate, and whose energy comes from burning coal, the largest driver of anthropogenic climate change.

Participants

The participants for this study were residents of the Tampa Palms neighborhood. In terms of households, two respondents each were drawn from 15 households, and one respondent each from 16 households. In terms of gender, there were 28 women and 18 men in the sample. The youngest respondent was 25 years of age and the oldest was 80 years of age. Seven respondents were above 60 years of age and 14 were below 30 years of age, so that 21 respondents (54% of the sample) were between 30 to 60 years of age. Thirty-two respondents (70% of sample) identified as White, 11 (24%) identified as Black, 2 (4%) identified as Asian, and one (2%) as Hawaiian and Pacific Islander. Three respondents (7%) identified as Hispanic or Latino/a. All respondents had some college experience and 6 (13%) had doctoral degrees. Eighteen respondents (39% of sample) belonged to households with an annual net income above \$100,000 USD, 7 (15%) belonged to households with income below \$50,000 USD per year, and the remaining 21

(46%) had incomes between this range. Twenty-two respondents (48% of sample) identified as Democrat, 13 (28%) as Republican, 8 as independent, 2 as having no affiliation, and one as Libertarian.

Interview Process and Data Analysis

Over a four-month period, semi-structured interviews were conducted with each of the forty-six residents. All interviews were conducted within their personal residences to enable examination of individual “micro-geographies”—meanings of place and connections to the natural world (Elwood and Martin 2000). Participants were guided through the interview using the same set of questions, beginning with demographic information and data on electricity usage. This format was designed to understand perceptions in relation to climate change, electricity production and consumption, and broader environmental concerns. Thus, interviews gathered information pertaining to personal knowledge and representations of socio-ecological relationships within a suburban context.

Interviews were transcribed and manually coded in accordance with themes present in the interview guide. Interview transcripts were then loaded into qualitative data analysis software, which enabled additional content and discourse analysis of the data.

Results

Suburban Residents’ Knowledge of Climate Change

Questions related to climate change focused on the individual’s knowledge of causes and consequences. Residents were asked about sources of information, media or personal experiences, and whom they thought should be responsible for addressing the problem of climate change. Residents whom acknowledged climate change is occurring, cited evidence of weather fluctuations and the retreat of polar icecaps. Those who stated they felt climate change was not occurring also cited weather conditions to support their view, but in their case, such fluctuations were seen as part of natural climate cycles.

The extent of the resident’s knowledge about environmental processes and global environmental policies also seemed to play a role in responses. One resident mapped his own personal experiences of weather events onto the larger issue of climate change, citing fewer hurricanes since 2007 for his disbelief. While another compared climate change to the ozone hole crisis, seemingly without knowledge of how the control of CFCs exemplifies international coordination on environmental regulation.

Uncertainty in scientific knowledge was a major theme cited by residents, and as a result, climate change could not be clearly defined. This range of ideas included residents whom cited difficulty finding reliable sources, incompleteness of information available, and combinations of all possible positions.

There's a lot of controversy [about climate change]. I mean who do you believe? It is really hard to know the truth from the non-truth. (Derek)

Residents designated a wide range of media as their primary sources of information regarding the climate change problem, from network TV and cable channels to newspapers and the radio. While a clear connection did not emerge in the sample between political affiliation and main sources of information, most residents mentioned that the debate surrounding climate change is highly polarized.

Given the focus of this study on suburban contexts of knowledge production, it is interesting to note that one resident alluded to another aspect of life that affects our ability to gain knowledge: lack of time.

When I come home, I'm busy, so I listen. I have TVs on in every room. I'm not a big newspaper person. I just don't have time. I'm at work from 7:30 in the morning to 5:30 at night. (Kendra)

The issue therefore is not just political understanding, but possibly a paucity of forums in their local community within which such political understanding can be constructed and transformed.

Similar to previous studies (Donner and McDaniels 2013; Krosnick et al. 2006; Ruddell et al. 2012), this line of inquiry sought to frame local perceptions of weather. But, in this case, with the intent to ascertain the ways in which weather events were cited to support or reject the occurrence of climate change. Residents attempted to associate their experiential knowledge of weather with climate change. For example, Patricia remarked,

[Climate change] is not a question; there have been changes. More 100-degree-days than usual. I remember hot days when I was a girl, but it used to be cold in November [and it no longer is].

In contrast, Greta's rejection of the climate science matched with her knowledge of Florida's weather patterns in her lifetime.

Global warming? No, I don't think so. I remember being a kid and we had Christmas dinner out on the porch and we were wearing shorts, but then in 1976 it snowed in Tampa.

While weather patterns over the span of an individual's lifetime are not a reliable source of knowledge about climate change, such examples were frequently mentioned by residents, suggesting another limitation associated with popular discussions of climate change. Memories of weather or climatic trends in the past were vague and only captured certain weather patterns, which generally coincided with memorable events in their lives.

Residents mentioned their anxiety for future generations, due to their belief that climate change will happen many years from now (e.g. 50-100 years). Even among those residents whom acknowledge anthropogenic climate change, they generally felt the impacts were spatially and temporally outside of their local suburban neighborhood and lifespan. Melting of polar ice caps, sea level rise, and hurricanes seemed to be things that would happen elsewhere in the world, or if these changes indeed occurred locally, they would occur slowly over long periods of time. Individuals and governments would have time to adapt, relocate, or rebuild in the face of a changing environment. The Malthusian narrative of overpopulation and resource limitations was also part of responses. This type of argument may allow people to reduce their tensions about climate change by diffusing blame across all the people in the world, placing blame with over population. To hold population growth responsible for climate change also becomes a way in which patterns of consumption fade from view.

Residents were asked who should be held responsible for addressing climate change. On the whole, they seemed to hold a general distrust of corporations, felt environmental regulations at the federal level were important, had very little faith in other people, and held a sense of limited personal agency. One resident alluded to the role of corporations and the social inequalities that characterize experiences of climate change. Others cast doubt on the ability of corporations to protect the environment, noting their tendency to 'green wash.' Some residents expressed disappointment with the current polarization in both public opinion and political pronouncements. For them, as long as the climate debate remained politically divided, there would be no action at the federal level to limit carbon emissions.

Worth noting is that residents, irrespective of political leanings, were supportive environmental regulations. There was almost universal agreement that the government, especially the Environmental Protection Agency (EPA), should remain a watchdog of corporations and limit the ability of "dirty industries" to pollute, at least in the United States. Regulations to protect water, air, and food were deemed necessary for a clean and healthy country.

Residents articulated a range of solutions for climate change. Though it seems knowledge of the issue itself may be limited, potentially due to lack of information and identification of climate change with specific political leanings, the potential for conversations surrounding environmental alternatives does still exist.

Knowledge of Consumption

To examine whether residents linked the occurrence of climate change to their own suburban lifestyle, a number of interview questions focused on electrical supply. Since electricity supplied to the case study neighborhood is produced through the burning of coal, electricity production and consumption provides a useful way with which to understand how climate change can be connected to everyday contexts. As argued above, climate change is rendered spatially and temporally distant. The following examines how even intimate forms of environmental behavior, such as electricity consumption, can remain outside the realm of everyday consciousness.

To begin, residents were each asked where and how the electricity they utilized was generated. None could provide the correct answer. It would be fair to conclude therefore that while electricity consumption was an integral part of their lifestyles, this consumption was also disconnected from the material realities of resource extraction, transportation, production, and waste generation. Responses seemed to verify a fetishized consumption of natural resources, electricity being further fetishized because of its invisibility (power lines running underground and behind walls). Two representative responses regarding the invisible nature of electricity were as follows:

It's part of the infrastructure. You don't even notice it. It's like the Internet. I don't understand that either. It's buried too. (Elaine)

The nice thing about this subdivision is that the [power] lines are not noticeable; it's all underground. It's like it's magic, or pretty close to it. (Paul)

Each participant was questioned about electric supply to the neighborhood, and whether it is generated through the burning of coal. None were certain if this was the case. One resident thought the electric company (TECO) had converted to natural gas, another was only certain it wasn't coal, and others couldn't be sure of the source at all. One way to interpret their (incorrect) notion that TECO does not use coal is to view it as a means to placate personal anxieties related to electricity consumption and connections to environmental pollution. On the other hand, it

could also indicate the extent to which knowledge about electric supply is withheld from consumers.

Unawareness therefore becomes an aspect of living in a suburban home. In the context of the interviews, this lack of knowledge prevented more detailed discussion about how nature is transformed for suburban consumption, conversations about limits to consumption of natural resources, and potential negative consequences resulting from the use of fossil fuels.

Based upon responses to questions about electricity generation, it outwardly appeared that residents had not spent much time reflecting on the production of electricity. Moreover, consumption was largely viewed as important only in the context of cost. The power bill was also the context through which they became familiar with the name of the company that supplied them with electricity. Many residents alluded that they would not be able to identify the Tampa Electric Company (TECO) as their supplier if it were not for the bill.

When relating stories about times when electricity was interrupted by thunderstorms, hurricanes, or tropical storms, residents expressed some awareness of their power consumption and their dependency upon it. Recounting times when they experienced disconnection from the grid, concerns about electricity consumption began to move to issues of safety, comfort, normalcy, and even luck. Residents discussed hardships associated with loss of power.

The hardest thing is if you have perishable food in the house...you cannot open the fridge or the freezer because it lets the cold out. Then you have to throw everything away. Even the toilets don't work if you flush them too many times. (Ingrid)

I remember when a hurricane came through and knocked out power. I went down to get ice...and the lines were a block long. People were buying ice at the front of the line and then tripling the price and selling it to people at the end of the line. It took some nerve to do that. It was an interesting experience. (Alfred)

Residents were also asked to consider the impacts on their lives if future climatic events disrupted power for extended periods of time. But power disruptions seemed to be conceptualized as rare occurrences, which could be dealt with as the events transpired, not as something that would last very long and certainly not as an enduring problem. Others related stories of friends that had experienced the impacts and aftermath of Hurricane Katrina as something they would not want to experience personally, but something they would deal with if and when it occurred.

Some residents were immigrants to the United States or had experienced living abroad. Their view of electrical loss was framed as more commonplace, but still rare and unwelcome in the U.S. Thus, loss of electricity was one context in which the hardships associated with disruptions due to climatic events could be gauged. Such loss was also viewed as an aberration, or an event with which the residents would be able to cope. The extent to which the regularity of electric supply is taken for granted thus becomes yet another way in which the environmental bases of suburban lifestyles remains hidden from view.

Knowledge of Conservation and Alternative Energy Sources

Residents were asked whether they had adopted any electricity conservation practices or considered alternative forms of energy generation, particularly solar energy. They spoke of ways in which they attempted to reduce electricity consumption in their homes by turning off lights and air conditioning when it was not being used. The aim of such conservation however was to reduce electricity bills, not necessarily to reduce environmental impacts.

After informed that TECO was burning coal for power, residents were then asked whether they would prefer that TECO continue to use coal or move from coal to other energy sources. Overwhelmingly, responses indicated that burning coal was not ideal and that the burning of natural gas was preferred. Though they were not specifically asked whether they considered natural gas to be problematic in terms of the ecological costs of fracking, their responses and references to clean burning fuel suggested that the concerted media campaign, that has presented natural gas as such, influenced their opinions.

Solar energy was discussed during the interviews, though only two residents had actual experience with solar energy. Patricia had solar water heaters. She claimed they worked poorly and were removed. Alice, another resident, wanted to purchase solar panels when she bought her home, but was limited by restrictions in the building code. She said the hurricane safety standards prohibited installation.

Residents said they felt obligated to purchase power from TECO and were unable to change, or even question, the way in which the power was produced. Environmental problems were understood as too large, complex, or widely distributed for individual efforts at the local level to be meaningful. The acts of energy consumption are disconnected from the source of that consumption (e.g., coal-fired power plants), therefore the residents' knowledge of climate change was also uncoupled from personal consumption in general. This works to perpetuate the status quo.

Overall, the source of electricity is hidden in many different ways allowing habitualized practices to continue without being coupled to the negative

environmental consequences of these practices. It can be suggested that without daily contact with sources of their consumption, knowledge of impact will be isolated from their conceptual universe. As electricity generation has become deeply fetishized by consumers (i.e., power bills paid automatically), the sources, the processes, the pollution, and social relations that created the electricity remain hidden.

Contradictions, Contributions, and Culpability

The suburban neighborhood of focus in this study, Tampa Palms, appears to be a naturally idyllic setting, with large oak trees along broad and meandering streets. Yet residents noted their lifestyles as rife with contradictions. Some noted their dependence on automobiles, thus underlining the contradiction between their desire for a clean neighborhood and their everyday acts of pollution. As the interviews continued, a sense of culpability for this pollution emerged. Overall, residents sought to control their environmental impacts on a daily basis, and though such activities are possibly marginal in the larger scheme of things, these also point to the presence of an incipient environmentalism.

Discussion

Investigations, such as this study, into public understandings of climate change, rest on the premise that policy decisions to combat climate change are more likely to be implemented when public opinion begins to align with climate science (Leiserowitz, 2006; Poortinga et al., 2011; Ruddell et al. 2012). By drawing on the perspectives of suburban residents, this study situates knowledges of climate change within the suburban contexts of consumption that are often implicated in the production of global climate change.

In an attempt to understand local perceptions of climate change, this study spans the distance between the objective knowledge of climate change produced by scientists and the subjective meanings of climate change held by consumers. In the process, it examines how the polarized debate on climate change at the national level is reproduced as polarized perspectives on climate change at the local level. Secondly, through the interview process, this study explores how consumption patterns, spatial organization, and the economics of suburban life contextualize (dis)connections to the natural world. Lastly, this study focuses on a coastal region in Florida. Positioned on the Gulf of Mexico, the Tampa Bay area is particularly susceptible to economic and ecological disruptions of climate change.

Interview respondents were divided in terms of their understanding of climate change, but exhibited similar positions and feelings in relation to broader

environmental issues, corporations, and even governmental regulatory policies. It is within these areas of broader agreement that can be utilized to align scientific and public perceptions of climate change. There are six main findings, in terms of suburban experiences of and attitudes towards climate change.

(1) People's recollection of weather in general, and extreme climatic events specifically, such as hurricanes, is scant and highly unreliable. In addition to the unreliability of local climate knowledge, there are two significant reasons why approaches based on perceptions of local weather patterns are flawed. First, climatic changes will materialize unevenly across the globe and these changes will not be experienced or conceptualized uniformly. These atmospheric changes could potentially benefit some regions (e.g., increased rainfall or longer growing seasons) while adversely affecting others (e.g., flooding, crop damage, and soil erosion). Second, as the findings in this study demonstrate, local weather patterns are frequently interpreted by people in ways that correspond to their preconceived notions about climate change. Policy formations cannot be based on local changes, and local experiences of those changes, if we aim to develop support necessary to mitigate carbon emissions produced at multiple locations across the country and the globe.

(2) Negative impacts associated with climate change, such as melting polar ice caps or weather events, were conceptualized as spatially and temporally distance phenomena. Residents, whether they agreed with anthropogenic climate change or not, described these potential negative events as sporadic episodes that would have little or no direct effects on their lives. As a result, dire predictions by climate scientists had little to no impact at the local level.

(3) Spatial barriers act to hide the true qualities and quantities of suburban consumption, as evidenced by knowledge of electricity production, and likewise, suburban links to climate change. The interviews revealed that residents lacked knowledge about the source of the electricity they consumed. At the household scale, material traces of energy consumption are hidden. Most electrical transmission lines are buried underground and the cables within homes are placed behind walls. In effect, the concealment of power generation by distance and structures dissolves consumers' knowledge and therefore decreases their concerns about the negative environmental impacts of their consumption.

(4) Electricity is associated with comfort and has become an integral part of modern life. Many residents indicated that the temperature of their home was set in accordance with personal comfort and preference. Some indicated that only when the cost of electricity seemed too high, or out of the normal monthly range, would they become concerned about their personal usage.

(5) Residents indicated that regulatory policies were vital to maintaining a clean, healthy, and aesthetically pleasing environment. However, environmental regulations were connected to economic costs. It was assumed by residents that

any new environmental regulations targeting polluting industries would result in higher taxes or energy bills for consumers.

(6) Residents felt their power to make substantial changes regarding the environment was limited. On one hand, they expressed a broad desire to change their personal consumption habits in order to lessen their impacts on the natural world (e.g., recycling, composting, programmable thermostats). On the other hand, they indicated that they had very little agency to make changes to their sources of electricity (i.e., via alternative technologies), and expressed an overall distrust of corporations, which they considered the main source of environmental pollution.

Conclusion

Per capita income growth coupled with increased consumption of fossil fuels create intense ecological contradictions between the city and nature. The design of technological networks, the spatial arrangements of suburbia, and relations of commodification hide these contradictions, reducing social and cultural tensions associated with production and consumption. Homes powered by electricity are sites of fossil fuel consumption, and also comfortable spaces where displaced natural resources come into contact with societies in new and often clandestine forms (Kaika 2004; Shove 2003). Moreover, homes insulate people from direct confrontations with the material ramifications of their everyday patterns of consumption. People, especially those enjoying affluence in countries like the U.S., feel that they are physically insulated from the potential impacts of climate change, therefore, they have mentally insulated themselves from the negative consequences of their routine consumption of fossil fuels.

As this study seeks to demonstrate, suburban residents can be disconnected, confused, and even in denial about the consequences of their actions in relation to climate change. For many people, alternatives to their current suburban lifestyles were difficult to imagine. Change of behavioral norms was associated with exorbitant economic outlays on unfamiliar technologies as well as the potential loss of American identity and cultural values. The most intransigent barrier to overcome, in order to deal with the climate problem effectively, is in the realm of popular environmental consciousness. In suburbia, political and economic forces rule through ideological formations as shaped by institutional discourses, everyday practices, spatial arrangements, and ignorance. Desires, wants, and needs of individuals seem to be shaped, in large part, by the desires, wants and needs of an economic system based on profit. Therefore, to mitigate carbon emissions in substantial ways, socially constructed barriers to systemic change need to be continually analyzed, revealed, and challenged.

Climate change represents an immensely complex socioecological challenge that requires a multidisciplinary approach, combining an understanding of the natural sciences with an understanding of the social and political pathways through which scientific knowledge must travel before translated into popular consciousness. The results presented in this study underscore the complexity of everyday understandings of climate change, where knowledge gleaned from wider institutional discourses is not merely repeated, but also contextualized by the subjective experiences of suburban life. Any prescriptions aimed at reducing carbon emissions that does not acknowledge local interpretations of climate science and the embeddedness of everyday life will be meaningless to the average consumer.

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