



Sustainable Consumption Research and Action Initiative

## **Abstracts**

***The Future of Consumerism and Well-Being in a World of Ecological Constraints***

**Clark University  
Worcester, MA, USA  
June 12-14, 2013**

***May 28, 2013 Draft***

## PRE-CONFERENCE WORKSHOPS

Two pre-conference workshops are being planned for the morning of Wednesday, June 12.

**Pre-Conference Workshop A**  
**Doing Something Now? Tactics for Attacking Consumerism**  
**Organizer: Richard Wilk, *Indiana University***  
**Time: 9–10:30am**  
**Location: TBD**

As scholars and practitioners, we are all aware of the urgency of the economic and environmental problems posed by consumer culture and consumerism. Many of us have addressed public audiences and engaged with government agencies and foundations that may be instrumental in changing the long-term course of consumerism. We have made some small progress in bringing the issue to public attention.

Yet, many billions are spent every month by an advertising industry whose one goal is to get people to consume more, aided and abetted by all the instruments of an entertainment and sports culture that continues to portray high levels of consumption as the ultimate goal and ideal of human existence. In the face of this torrent, reasoned scholarship and helpful suggestions on how to recycle or reduce energy use are like whispers in a storm.

Are there more direct, subversive, or attention-getting tactics that might have a more direct effect? We can certainly point to a few examples like Adbusters and Reverend Billy (and the Church of Stop Shopping). This workshop will encourage radical and creative thinking about how to slow down or even derail the runaway train that threatens to destroy the planet.

**Pre-Conference Workshop B**  
**Systems Thinking: Framework and Methods for Working Smarter Not Harder**  
**Organizer: Vanessa Timmer, *One Earth***  
**Time: 11am–12:30pm**  
**Location: TBD**

Shifting consumerism is a complex task that calls for a different approach to finding solutions. Systems thinking is a framework, language, and set of tools for understanding challenges and finding opportunities for improving a system. By exploring whole systems, interconnections, and dynamics in addition to parts and elements, we identify enduring solutions for advancing sustainable consumption and production and well-being and we adapt with the system itself.

This workshop is part of a multi-year North American collaborative initiative to accelerate and amplify change in consumption and production through applying a systems approach. We are an open, welcoming, and evolving network led by the Sustainability Funders, the Center for Sustainable Production at the University of Massachusetts–Lowell, The Story of Stuff Project, and One Earth.

Behavior of all systems follows certain common principles and interdependencies that go far beyond our normal ways of thinking and talking about cause and effect. Often unexpected dynamics emerge, suggesting innovative solutions grounded in analyses of root causes and deeper understanding of reality. Join this dynamic interactive workshop to build a shared understanding of the consumption and production system, make the system visible, and identify high-impact ideas and strategic solutions that make a difference. We will collectively create a map of the whole system and apply systems tools to messy and stuck sustainable consumption problems and research questions.

## **Recycling Community or Reinforcing Disparity? Green Consumption and Citizenship among the New Middle Classes of India**

*Manisha Anantharaman*

Economic liberalization and globalization have enabled millions in the developing world to adopt consumer lifestyles similar to those common in the resource-intensive global North. This transformation is most visible in cities like Bangalore India- a once sleepy town of public sector employees and retirees that has transformed to a bustling megapolis in the past two decades. Bangalore has emerged as an important technology and out-sourcing center and is now home to around 200,000 Information Technology and other service sector workers who constitute the most visible face of India's transnational 'consuming' class- it's New Middle Classes (NMC). Symbols of NMC consumerism are visible in Bengaluru's swanky malls, air-conditioned supermarkets, chic coffee shops and gated complexes. The city has expanded, changing old neighborhoods and creating new ones. It is in this context of westernizing consumption and changing urban landscapes that an apparent interest in eco-friendly lifestyles is emerging among India's New Middle Classes, as demonstrated by the presence of communities of city bicyclists and neighborhood waste management programs in Bengaluru. My research uses social practice theories to study these individuals and communities and looks at the agency, structures, objects, norms and discourses that constitute such lifestyle practices. Preliminary research suggests that these practices are driven by multiple discourses related to environmentalism, distinction, physicality, efficiency and austerity, and have both local and transnational connections. These discourses are circulated and perpetuated by online and offline communities through shared symbols, objects and practices. I also look at the politics of instituting policies to support these practices (e.g. getting the Bangalore city municipality to build bicycle lanes or organize door-to-door collection of recyclables), to examine whether they are inclusive, or if they reproduce existing class inequalities in access to urban governance. Through this I seek to assess what these emerging lifestyle practices represent for the politics of class and environmentalism in urban India.

# **Do Lower Greenhouse Gas Emissions Imply a Lower Quality of Life? A Study of Swedish Households**

*David Andersson, Jonas Nässén, John Holmberg, & Jörgen Larsson*

In the contemporary discussion on society's transformation towards long-term climate targets, it is often implicitly assumed that behavioral changes, unlike technological changes, would require sacrifices of individual freedom and hence cause negative effects on human well-being. In this study we question the foundations for this assumption by analyzing the co-variation between individual households' greenhouse gas (GHG) emissions and a set of subjective "quality of life" (QoL) indicators. The aim of the study is to establish a comprehensive picture of the general relationship between QoL and total GHG emissions, as well as to analyze relationships between QoL and emissions from sub-domains including housing, transportation, food, and remaining consumption.

Both direct and indirect greenhouse gas emissions are measured in detail. Data on household's energy requirements and private transportation is collected directly from power companies and the Swedish road registry. Indirect emissions from food, aviation and remaining consumption are estimated using a survey questionnaire to 2500 Swedish households with a net response rate of 40 percent. Subjective well-being is measured using single item questions on affective and cognitive well-being. Other tested QoL indicators include self-experienced health, time pressure and a short form (three items) version of the Purpose-In-Life (PIL) test.

In a second step of the analysis, multivariate regressions are run with QoL indicators and GHG emissions as the dependent variables. The same set of explanatory variables are evaluated for both regressions in order to identify underlying factors that may benefit high QoL and low GHG emissions. The analyzed explanatory variables include socio-economic conditions (income, household size, education, age), value orientation and urban form parameters (e.g. type of residential area, urban density, availability of public transport)) as well as certain potentially important behaviors such as commuting. We also control for a set of factors that have been shown to be important for subjective QoL indicators in previous research.

## **Building Sustainable Lifestyle Scenarios towards 2020**

*Midori Aoyagi, Tomohiro Tasaki, Yuko Kanamori, & Aya Yoshida*

For changing consumption patterns for sustainable society, it is essential to share the goal and process for building “the sustainable society” among people in the society. To do so, we are trying to build Japanese sustainable lifestyle scenarios towards 2030. The scope of our 2030 scenario is Japanese lifestyles; how we live our lives in 2030, so we focus not only on environment but also social and economical aspects of our lives: how we will earn, whom we will live together, how will be the gaps in terms of income, education and social status in our society? We think those aspects are closely connected to our everyday consumption. Using “Future Dynamics” method, we 1) build our hypothesis for 2030 Japanese lifestyles, and we have eight future lifestyle “issues”. This eight issues include “active seniors”, “withdrawals and NEET (young people Not in Education, Employment or Training)”, etc. We tried to include various patterns of families in these issues. Then 2) we have “experts workshop” for Future Dynamics. We invite experts from fields such as labor economics, sociology of families, international relations, child bearing, social entrepreneur, marketing, urban planning, social policy and environment. 3) Using results from the expert workshop, we will complete writing our Japanese sustainable lifestyle scenarios towards 2030 by the end of 2012. In this scenario approach, we intentionally avoided to focus only on what we call “pro-environmental behavior”, or low-carbon society, as our lifestyle is not only about the environment or low-carbon, but everyday enjoyment or risks, and values of what we live our lives.

## **White Weddings as Feminist Practice? The Dominance of the Ritual in Post-Second Wave America**

*Patricia Arend*

The white wedding, the most popular form of marriage ritual in America, includes a standard package of goods and services that are often lavish and ritual practices that pre-date modern gender relations. This paper examines three historical changes in feminist discourse and women's movement that help explain the embracing of the "white wedding" by many contemporary, self-identified feminist women. My analysis is based on free association narrative interviews with single and engaged, feminist and non-feminist women of all sexual orientations that are part of a larger study of the popularity of the white wedding in the United States. First, I address the waning of marriage as a subject of feminist critique largely due to the success of the LGBT marriage equality movement. Second, I address the co-optation of feminism by advertising as the "new consumer feminism" that embraces self-improvement and beauty. Finally, I consider liberal feminism in its "third wave" and its focus on individual experience and "choice" which, taken to its logical extreme treats feminism as an identity and even lifestyle and not, to quote bell hooks, as "a movement to end sexist oppression" (1984). I argue that these three historical changes in feminism since the second wave of the women's movement provide the context for the popularity of the white wedding, where no substantial counter-hegemonic forces exist to challenge its dominance.

## **The Crises in Employment and Consumer Demand: Reconciliation with Environmental and Financial Sustainability**

*Nicholas Ashford*

The crises we encounter today could be described as the ‘perfect storm’. Now, in the still-unfolding aftermath of the global financial crisis that began in 2008, it is imperative to understand its related structural causes and effects. This understanding will help develop solutions to address the perfect storm of several crises: financial, investment and production, wealth concentration, employment, consumption, and environment. These concerns are likely to dominate future national political debates, requiring responses that increase the earning capacity of individuals through changes in the nature of work and employment, and in the ownership of productive capital. The promises and perils of a shorter workweek will be discussed. Making the economy greener, while certainly necessary for long-term economic and societal survival, does not necessarily mean more and better paying jobs on a large enough scale to make serious progress to reducing unemployment and underemployment. This session will consist of several short presentations followed by a spirited roundtable discussion.

## **Buyers of the Nation: Women and the Rise of Consumer Citizenship in the Global North**

*Donica Belisle*

When Canadian women were struggling for the vote during the early 20th century, they positioned themselves as “Buyers of the Nation.” Women were entitled to full citizenship, they argued, because they were the nation’s consumers: they purchased their household’s goods, they made ethical shopping choices, and they made it possible, through their own consumptive labour, for their families to enjoy the fruits of burgeoning industrial capitalism.

This paper considers the rise of the Northern consumer citizenry in light of Canadian women’s citizenship arguments around consumption. It suggests that the emergence of Northern consumer capitalism was a completely gendered development, predicated on the assumption that men were citizen producers and women were citizen consumers, and based on the idea that women’s secondary status was somehow related to their non-productive roles within the developing industrial and capitalist economy.

By laying claim to the title of consumer citizens, Canadian women were responding to gender inequalities and attempting to demonstrate women’s moral, civic, and political worth. More than this, they were trying to emphasize the emerging centrality of consumption to Canada’s democratic and capitalist political economy. In fact, and according to many Canadian feminists between 1890 and 1940, access to affordable, quality, and convenient goods and services was a fundamental citizenship right.

Examining the detailed arguments that Canadian female activists made around consumption before World War II, this paper offers new insights into the rise of global consumer capitalism. Through its explorations, it argues that not until a full understanding of the gendered relationship between citizenship and consumption in the North is reached will it become possible to work toward alternative and sustainable consumer practices.

## **Exit from High Street: An Exploratory Study of Sustainable Fashion Pioneers**

*Sarah C. Bly, Wencke Gwozdz, & Lucia Reisch*

Sustainable fashion has remained low on the vernacular of policymakers, industry and consumers alike. This is not however, due to lack of impact with environmental degradation, human rights abuses and a host of other social ills accompanying a large and powerful industry. Moreover, while the environmental impact of fashion is reportedly smaller than other consumption fields such as transport, food and housing, fashion can serve as a key field where consumption styles are anchored and life styles displayed. Hence, we assume that fashion has a substantial impact on values and life styles in a more indirect way. Adding to the complexity is the paradoxical pairing of words - sustainable and fashion - which together seem to create an oxymoron. The transience implied by fashion coupled with the enduring nature of sustainability confound making sustainable fashion a perceptible reality. This research explores a previously under researched group of consumers - “sustainable fashion pioneers” - as this consumer group presents a promising opportunity to learn about consumers who are able to mediate the tensions sustainable fashion presents. Exploratory in-depth interviews supported by online monitoring illuminate the motivations, abilities, and external facilitators and barriers that play a role in their reported behavior. Using the MOAB (motivation, opportunities, abilities, behavior) framework key results suggested that respondents did not report to exclusively purchasing garments labeled as sustainable fashion, but instead adopted other behavioral practices such as purchasing higher quality items that would be worn longer or exiting the market altogether and purchasing only second-hand or handmade clothing. The notion of fashion was rejected as dictated, superficial, and the anti-thesis to sustainability; instead the respondents reported to adopting practices that helped them achieve personal style. Fashion, it was argued, created insecurity whereas style helped achieve a unique sense of self. This research suggests that by replacing the ideology of fashion with the ideology of style, a balance between the personal need to express one’s self and the societal need for reduced consumption can achieve consonance. These findings are further developed in ongoing research that includes a large-scale survey as well as in-store experiments that will further contribute to an understanding of how sustainable fashion and well-being relate.

## **The Development of Alternative Institutional and Organisational Forms to Encourage Industrial Sustainability**

*Nancy Bocken, Samuel Short, Padmakshi Rana, & Steve Evans*

The fundamentals of our global economy and institutional forms of companies (continuous growth, profit maximisation, promoting consumption) are not in line with the characteristics of a socially, environmentally and economically sustainable economy. To move beyond a consumerist society of continuous growth novel business forms are required. The term “industrial sustainability” refers to the role companies can have in a sustainable economy. This paper investigates organisational forms to achieve industrial sustainability. Through literature analysis and case studies, a list of possible sustainable business formats has been identified. These formats include: not for profit organisations, family owned businesses, cooperatives, social enterprises and B-corporations. In this paper we compare a range of possible “sustainable institutional forms” to more traditional corporate formats (plc, ltd) to investigate whether these might better engender sustainability. The following research questions are investigated: Which institutional business formats appear most suited to deliver sustainable consumption and production? Hence, should certain institutional business formats be promoted? What are the challenges to move to new business formats? The following methodologies are used to investigate the ways in which institutional forms can encourage sustainability: case studies of companies with unusual business formats and mindsets which promote sustainability, and literature analysis on sustainability and novel institutional formats. First, the criteria for a sustainable industrial system are developed from the literature. The characteristics of various business formats are highlighted in this paper, and then assessed against criteria for their ability to deliver sustainability. In addition, this paper discusses whether certain organisational forms should be promoted and identifies the challenges and barriers, and potential enablers of the widespread move to new institutional forms. Some of the challenges include: access to sufficient capital, getting sustainable businesses to scale, and how to attract and retain employees with the right mindset. Some of the ways to overcome these challenges are presented, such as government financing and radically rethinking approaches to education and employment (e.g. societal views around wealth, status and progress). Finally, future research areas on novel institutional business forms for sustainability are suggested.

## **Mobilising Resources for Community Action on Sustainability**

*Sarah Bradbury*

A “grassroots sustainability association” (GSA) is a named group of volunteers that share concern for sustainability problems and that aim to encourage and enable themselves and others in the community to contribute to achieving local and global sustainability. These include not only geographic communities e.g. neighbourhoods but also communities of work, education or leisure. Many of these associations create projects that allow users to consume resources more sustainably, such as garden-share schemes, energy libraries, food co-operatives, farmer’s markets, and organic vegetable growing classes. They may also arrange and participate in protests and lobbying in order to encourage change in government policy. In this paper I aim to understand what resources GSAs need and how those resources can be mobilised to produce an active GSA. The objective is to suggest ways in which GSAs can increase their capacity to enable more sustainable consumption patterns among members of their communities.

The literature in this area to date suggests that human resources, provided by GSA members who are predominantly volunteers, are vital to the work of these associations. While the literature on community-led sustainable consumption initiatives has increased in recent years there is little understanding of exactly which human resources are needed (e.g. skills, knowledge, personality traits, etc) and indeed which non-human resources would complement these. In this paper I report on findings based on three case studies of grassroots sustainability associations in the UK (Green Action in Leeds, West Yorkshire; Congleton Sustainability Group in East Cheshire; and Awel Aman Tawe in South Wales). Drawing on qualitative interviews with volunteers and staff, I examine how these active GSAs have made use of their resources. In doing so, I assess the mechanisms that have resulted in these resources being mobilised in order to produce an active GSA. I conclude by making recommendations about the types of resources needed by these GSAs, and how these might be managed in order for GSAs to become and remain active in their communities.

## **Sustainable consumption in tourism: a critical analysis**

*Adriana Budeanu*

Recognized as a key source of growth and competitiveness and stimulated by the human desire for escapism and cultural enhancement, tourism has developed a large infrastructure that moves around over 8% of world's population every year (author's own estimations), supporting what is probably the largest migration in the history of humankind and a major element of social life. The concern when discussing sustainability in tourism is finding ways of reducing negative impacts. Consequently, a significant amount of research is focusing on the identification and monitoring of impacts from the provision of tourism services: accommodation, transportation and leisure activities. In parallel, the provision of tourism is largely addressed through market based incentives such as taxes, voluntary initiatives and technology developments designed to reduce the negative effects of pollution. However, the progress is still slow. One reason is the noticeable low engagement of tourists in the adoption of sustainable holiday practices. Research indicates that while 70-80% of tourists state their high concerns for eco-social components of holidays, only about 10% convert this concern to purchasing decisions and, in reality, the majority are reluctant to change their own behaviour in support of sustainability goals. Tourism is still lacking a coherent discussion of consumption in the context of sustainable tourism. At the same time, the emergence of postmodernist values are changing the landscape of the tourist experience, drawing attention to immaterial values, a belief in science, technology and social organizations as a means of progress. In this context, environmentalism is an integral part of the postmodern social experience of space and time, and gives scope for re-examining the sustainability of tourist consumption.

Aiming to bridge the knowledge gap regarding sustainable tourism consumption, this paper will critically examine how consumption is conceptualized in social sciences, and examine its fit with the conditional contexts of sustainable tourism. Examples from theory and practice are used to illustrate the main arguments. A particular attention is given to the role of environmental awareness, claimed to have been a strong predictor of environmental demands in tourism. The concluding discussion proposes a more focused definition of sustainable consumption in tourism that may provide the structure for creating a new discourse on sustainable holidays.

## **The Consumer/Citizen Relationship across Time and Space: Millennial Perspectives on Responsible Citizenship in Different Issue Domains**

*Graham Bullock*

Much has been written about the tensions between the duties of the citizen and the desires of the consumer. These tensions stem from our dual public and private identities and the value we place on both negative and positive liberties. They also originate in the overlapping and complex nature of markets and politics - often conceived of as two separate spheres, in reality the two constantly influence each other with the decisions we make in them about our values. These tensions are not unique to the modern era but have existed for centuries. Nevertheless, the ways in which we perceive and respond to them may shift over time, as new tradeoffs become salient and new solutions to managing the public/private divide become popular. Likewise, these tradeoffs may differ across different domains in society. Some solutions to these tradeoffs may be unique to particular domains, while others may be transferable and applicable across many domains. This paper will explore these two possibilities for variation in the relationship between consumers and citizens. How do conceptions of responsible consumption and citizenship differ across generations and across issues? The paper will address this question by analyzing work done by students in an undergraduate seminar on Citizens, Consumers, and the Environment. In the course, students wrote research papers exploring the responsibilities of consumers and citizens in seven different contexts, including food, energy, transportation, energy, the climate, water, and households. Students used at least one philosophical concept related to citizenship and applied it in their analysis. The students' analyses allows for an exploration of the variation in citizen and consumer roles across these domains, while their application of philosophical concepts enables an analysis of our understanding of citizen/consumer roles across generations, and especially in the Millennial generation. I will supplement their work with my own interpretation of this variation, and discuss its implications for our understanding of the future of sustainable consumption. In particular, the paper will explore the nature of consumerism and post-consumerism from these different perspectives, and will highlight the role of institutions in framing citizen roles, present alternative visions of these roles, and examine the ethical dimensions of "sustainable consumption." It will also provide a case study of teaching about consumerism in the academy.

## **Communication, Competence, and Distinction: Theorizing Mechanisms to Alter Path Dependencies in Urban Building (Co)operations**

*Catherine Carter*

When we look at building systems as sub-systems of larger urban ecologies, we can make small-scale inquiries at the building level knowing that they operate within larger city systems. At this meso scale, this paper asks how sustainable consumption principles can inform new thinking in the design and operation process of buildings. To what extent should building users be considered as agents in design and operation of building systems that are subsystems of sustainable urban ecologies?

To investigate this question, this paper looks at the case of the path dependent and co-evolved building technologies of sealed windows and contemporary HVAC systems. Can communication between building designers and users heighten user competence in building window operation? And can this kind of consumption process be an alternative that provides opportunities for social identity and distinction? In thinking about these technologies and practices, I operationalize lessons learned in sustainable consumption through design solutions and explore the possibility that designers can offer building “consumers”, or users, new choices that can encourage new paths to mitigate environmental harms. The paper presents an urban-ecological participatory process that uses building technologies as a tool for inhabitants to demonstrate competence and social distinction.

By engaging building users in a pedagogical process that embraces the dynamics between an indoor and outside environment, we can develop healthier paths toward social distinction, a more versatile built world, and expand our view on what “collaborative consumption” can look like.

## **Future Wash: Exploring New Norms, Procedures, and Technologies for Sustainable Washing Practices Through a Backcasting Approach**

*Ruth Doyle*

Across western households a general upwards trajectory has been observed in consumption of water for daily household chores, such as cleaning, cooking, and personal washing. In Ireland and the UK, personal washing is the most consumptive end-use comprising about 38% of daily household consumption (or 55 liters). There is an urgent need to shift to more sustainable practices of washing given associated environmental pressures from water abstraction and treatment, along with related financial costs and increasing energy requirements for hot water in the home. To address limitations of current disjointed interventions based on individualized and rational conceptions of consumption behavior, the research discussed in this paper merged social practice theory with a backcasting procedure. This attempted to bridge gaps identified around the operationalization of social practice theory for the development of practical interventions for sustainable household consumption. This paper reports on 'promising practices' for more sustainable forms of personal washing that were designed with water stakeholders and citizen-consumers through an iterative, participatory visioning process. Each of these depicts a complementary integration of new socio-cultural norms, expectations, technologies and systems of governance in the future. The promising practices reveal potential opportunities for more ecologically sensitive practices of washing through tools and procedures that stimulate enhanced connection with natural environmental rhythms. Further evaluated are the contested viewpoints that emerged within citizen-consumer workshops around the relative distribution of competency between people and technology in performing the future washing practices. Ultimately, it is argued that practice-oriented, participatory backcasting processes provide a valuable means for encouraging explicit debate on the values, motivations and scripts embodied in material and immaterial dimensions of consumption practices, which collectively give practices their current form. How and whether these can be collaboratively and deliberately manipulated towards more sustainable outcomes remains a moot point.

## **Role of Gender in the Promotion of Sustainable Food Consumption**

*Skaidrite Dzene*

Food consumption becomes an increasingly important topic considering global and local environmental problems as well as health issues and well being of nations in general. Also in Latvia people are becoming more aware of importance of food and its direct and indirect impact on their everyday life. Therefore it is crucial to evaluate sustainable aspects of food consumption and look for the barriers and drivers in order to form more sustainable consumption patterns which are based on information, knowledge and consciousness. The impact of gender on sustainable food consumption in various studies is controversial. The aim of this study is to evaluate the role of gender in promotion of sustainable food consumption in Latvia. The study is based on the following criteria of sustainable food consumption: ? locally and seasonally produced food, thus reducing the consumption of energy and food miles, while storing the products and delivering to consumers; ? ecologically produced food, which includes animal welfare, biological diversity, food and the environment free from pollution of agricultural chemicals; ? reduced meat consumption, thus reducing CO2 emissions and negative impact on the environment; ? fair trade products, which includes social fairness and care about the environment; ? Reduced food waste. Methodology: The empirical research is based on the online survey conducted in March 2012 with a sample of 530 respondents. Descriptive statistics, correlation analysis, regression analysis and chi-squared test were used to analyze the results of the questionnaire. Results: Among demographic categories the results of the study indicate statistically significant differences in consumers' attitudes and stated purchasing behaviour of sustainable food. The attitudes towards sustainable food consumption among selected respondents were highly positive and noted as important. Healthily balanced diet was rated the highest, while the waste and animal welfare issues were rated as least important. Conclusion: There is a perspective of growth of sustainable food market if the awareness of consumers regarding sustainable consumption issues is increased. As clearer and more understandable information is delivered to consumers, especially women, as faster the shift to more sustainable consumption patterns is expected to take place.

## **The Economic Gains and Environmental Losses of US Consumption: A World-systems and Input-Output Approach**

*Kuishuang Feng, Klaus Hubacek, Christina Prell, Martha Geores, & Laixiang Sun*

Although research has shown that world-system position can predict a country's level of pollution, there has been little research looking at how countries in the core can trigger both pollution and wealth in other zones. In this paper, we track the entire global production supply chain to estimate each country's share of GDP and share of local pollution (in this case SO<sub>2</sub>) triggered by the production of U.S. consumption items. Our findings show that the US gains a higher share of global GDP than their global share of pollution whereas other countries, like China and India, have much higher shares of pollution than shares of wealth. We discuss these findings in relation to differences in economic structures, levels of technology and fuel mix.

## **Practices, Technologies and Institutions: Co-evolution in a Fossil Fuel Based Economy**

*Timothy J. Foxon & Lucie Middlemiss*

This paper will apply the coevolutionary framework developed by one of the authors (Foxon, 2011) to explore how unsustainable social practices and consumerist lifestyles in Western industrialised countries have coevolved with technological and institutional changes relating to increasing use of fossil fuel energy sources, particularly in the post-war boom of the 1950s and 1960s. This will contribute to emerging ideas on ecological macroeconomics (Victor, 2008; Jackson, 2009) by exploring the development of unsustainable, high carbon lifestyles in social, economic and historical context.

The paper draws on earlier research which documented how the growth of primary energy inputs from coal and oil represents a step-change in global socioeconomic energetic metabolism from humanity's earlier reliance on organic energy inputs (Haberl, 2006) and argued that the useful work delivered from conversion of these inputs into energy services has been a key driver of economic growth (Ayres and Warr, 2009). This paper explores how this enabled the growth of energy-intensive practices based on the availability of energy services, such as space and water heating, electrical power and (auto-)mobility. These practices provided social benefits in the form of increased health, life expectancy, mobility and limited redistribution of wealth. However, energy-intensive practices associated with consumerist lifestyles have well known detrimental consequences on the environment and can exacerbate social inequality.

The paper argues that a coevolutionary process has led to multiple related 'lock-ins' of fossil fuel based technological systems and supporting institutions and norms (Unruh, 2000), of unsustainable practices (Shove, 2003; Ropke, 2009), and of a global economic system that militates against redistribution of wealth. However, until recent work on ecological macroeconomics, most academic and policy thinking has sought to address decarbonisation, consumption and macroeconomics separately. The paper argues that an understanding of the historical processes that led to the current situation, and the interrelated 'lock-ins' we identify, can help to inform action and policy on sustainable consumption.

## **The Organization of Uncertainty: A New Theoretical Approach to Food Waste**

*Zsuzsa Gille*

This paper applies the Michael Power's concept of the organization of uncertainty to render conceptually legible the practices that contribute to food waste. Creatively utilizing secondary empirical data on the Global North and South from the scholarship on food regimes, development, and food aid, I will demonstrate that the unequal organization of uncertainty is a key structural determinant of food waste production in both. The relationship between risk and waste stretches across not only geographical but also scalar boundaries, revealing that solutions to the "food waste problem" limited to technological innovation and a few sites or even countries will prove insufficient and will likely exacerbate existing inequalities.

## **Title: Should it Stay or Should it Go? Social Practices of Material Divestment**

*Andrew K. Glover*

Shove (2012) conceptualizes the ‘elements’ of practice as competences, meanings and materials. Here, I propose a supplementary framework of characteristics for understanding how these elements ‘hang together’ in the architecture of a practice. They are: scale, intensity, trajectory, and form. These describe the existing elements of a practice, formalizing what are likely to be existing approaches to analyzing social practices relevant to sustainable consumption. The framework advocated here will be used in the context of a specific set of social practices around domestic material divestment. This refers to the divestment of household material objects from the domestic sphere. This may involve the generation of what is typically referred to as ‘waste’, but this is not necessarily so. Objects can be sold, traded, donated or passed on, although these re-use practices are unevenly distributed across geographical, temporal and cultural spaces. This paper will also examine how certain systems of provision for divestment can ‘configure’ practices in more or less sustainable ways - as can the actual objects themselves. This can lead to certain expectations for subsequent participation of divestment, as well as inter-related practices in the course of everyday life. It will describe some of the skills and competencies required in order to carry out the practice of divestment, along with the associated understandings about what can be gotten rid of, to where, when, and in what way. Social practices theory informs an understanding of divestment by drawing attention to the habituations and routines are used to carry it out, which may be more useful than approaches centered on the concept of ‘choice’. This allows researchers to entertain new possibilities for conceptualizing how change comes about, and how such insights might be translated into designing policy initiatives for change toward more sustainable ways of life.

## **Italy's Solidarity Purchase Groups (GAS) and Districts of Solidarity Economy (DES)**

*Cristina Grasseni, Francesca Forno and Silvana Signori*

This paper focuses on social and solidarity economies in Italy, presenting quantitative and qualitative data about solidarity purchase groups and districts of solidarity economy in Lombardy, a region in northern Italy roughly comparable with Massachusetts in terms of size, population and gross domestic product.

The methodologies employed (survey, participant observation, and in-depth interviews) have contributed to mapping solidarity purchase groups in Italy, and to assess their strategies and limits in developing novel economic circuits.

CORES is an interdisciplinary research group, co-founded by a sociologist (Forno), a social anthropologist (Grasseni), and a business economist (Signori). Its aim is to investigate the sociocultural and economic factors underlying a variety of solidarity-driven consumption networks and their efforts to establish novel and sustainable economic circuits.

## **Supermarkets, Financialization, and Alternative Food Movements in the U.S.**

*Rebecca Gresh*

Recent literature on sustainable consumption highlights the ongoing tension between consumerist lifestyles in the North and ecological degradation in the South. In the US, the field of food represents one such shift where the turn to sustainability is evident in the rise of alternative food practices by both social movements and corporate retail chains. This paper focuses on two key economic developments: 1) the financialization of the economy and how it exacerbates uncertainty for food producers and consumers while shielding investors from market risks; and 2) the mobilization of the supermarket form for solving the problem of food deserts. I will demonstrate that common in these seemingly different economic models is a set of “practices of abstraction” aimed at making food quality and quantity legible. I will demonstrate that contrary to our expectation that alternative food movements and organizations fight the consequences of abstraction with a Polanyian project of “re-embedding”--that is a certain “localization,” “particularization,” and “materialization”--in order to be effective and to build trans-local alliances they still need to frame local food issues, whether waste, scarcity, or quality, through practices of selective abstraction. This in return results in “hailing” citizens and consumers in particular ways, as embodiments of particular desirable and non-desirable qualities. The empirical evidence relies on archival research and fieldwork data from Southern California.

## **Carrots and Sticks: Sustainable Consumption in the Lower Ninth Ward after Hurricane Katrina**

*Daina C. Harvey*

For urban planners, architects, and community and environmental groups Hurricane Katrina seemingly presented a tabula rasa for the urban-environmental ills of New Orleans. While eighty percent of the city flooded and the number of blighted structures (which were present throughout the city before the storm) rose to over 50,000, the aftermath presented different challenges and opportunities for different neighborhoods. When residents of the Lower Ninth Ward realized, in the words of one community member, that “the cavalry was not coming,” they welcomed numerous non-profits into their neighborhood. Many of the non-profits came with sustainability strategies, which ranged from simply reusing building materials, to weatherizing homes, to building LEED certified dwellings, to creating self sufficient community gardens. These efforts have encouraged Holy Cross, for instance, one of the two neighborhoods in the Lower Ninth Ward, committing itself to achieving carbon neutrality by 2020 and climate neutrality by 2030. When current plans are finished the Lower Ninth Ward will have more LEED certified homes on a per capita basis than any other neighborhood. The community is regularly advertised as the most sustainable in the US. The reception and the result of the sustainability efforts, however, have been quite mixed. Much of the efforts at achieving sustainability from non-profits have come at a price and some residents believe that they and others have acquiesced to a sustainable lifestyle when they had little choice. One resident explained the years since Katrina as “being taken hostage by environmentalists.” Others, however, welcome it as a new narrative for the community. Based on thirteen months of fieldwork, including participant observation and formal interviews, I describe three different efforts at achieving a sustainable community, the response of residents, and what we might learn from marginalized communities about commitments to sustainable consumption. Findings problematize imposing definitions of sustainable consumption versus allowing for local definitions of sustainable consumption; the development of large scale sustainability efforts over small scale (both in size and in scope); technological solutions over sustainable consumption along historical continuity; and, perhaps most importantly, attempts to overcome traditional notions of consumerism and selecting both appropriate times and places for introducing ideas for sustainable consumption.

## **Smart Meters and Public Acceptance: Comparative Analysis and Design Implications**

*David J. Hess*

Smart meters have been at the center of sustainable consumption policies and practices for household-level electricity consumption, but public opposition to smart meters for electricity has now emerged in North America, Europe, and Australia. Based on a comparative analysis of the public opposition campaigns and the reasons for opposition, the research suggests that health concerns have to date been more salient in the states and provinces in the U.S. and Canada, where there has been widespread and mandatory implementation, whereas cost and privacy concerns have been more salient in Europe and Australia. In the U.S. and Canada, public concerns have increasingly been addressed by providing opt-out rules, either with or without an accompanying fee. The study compares two strategies of industry response: one strategy rejects public opposition as based on the argument that public opposition is based on a misunderstanding of the technology, faulty understanding of health research, and poor communication from the utilities; the other strategy views public opposition as an opportunity to engage in design innovation and experimentation with system design.

## **Social Practice Theory and Civic Engagement**

*Emily Huddart Kennedy*

Social practice theory has been incorporated fairly recently into sustainable consumption studies. In the broader field of sustainable consumption, interdisciplinary studies incorporating political sociology and environmental politics have widened the scope of inquiry to explore environmentally-relevant civic engagement in addition to environmentally significant consumption. Although sustainable consumption can be argued to constitute political action, isolated consumer acts have a limited capacity to create social contexts that foster environmentally friendly practices. On the other hand, there are few people with the passion and capacity to lead social movements or sustain their engagement in social movements. However, this implicit sustainable consumer / activist construction suggests mutually exclusive categories, rather than a spectrum of individual involvement. This results in a failure to recognize and theorize civic practices that would not be classified as activist but that aim for sustainability nonetheless (e.g., a government employee pushing for a sustainable consumption policy; an organic food producer seeking ways to provide goods to low-income households). In view of this widening of scope, the present article aims to explore, conceptually, how social practice theory might be applied to further current understanding of the practices that exist between private consumer (individual) and public citizen (collective) responses to environmental challenges. Topics explored will include the role of the material - such as the physical spaces that facilitate or prevent civic engagement; technology like social media that may foster or inhibit civic engagement; and the people who serve as carriers of these practices, including the values and moral philosophies these individuals might draw upon.

## **Accounting for Consumption: Exploring Proposals for More Equitable Emissions Accounting**

*Cindy Isenhour*

Whether referred to as ecological modernization, bright green environmentalism, or the rationalization of lifestyles, technological improvement has long been presented as a “win-win” strategy resulting in both economic growth and improved environmental health. Yet significant and mounting research suggests that these strategies have not delivered on their promises. Efficiency gains are being rapidly outstripped by sustained net growth in consumption. This paper explores a series of reports published by the Swedish Environmental Protection Agency and their subsequent impact on other nations. The report authors advocate a zero-sum approach to understanding green house gas emissions - recognizing that while Sweden has reduced domestic emissions since 1990 -- simultaneous growth in the consumption of imported goods and services has resulted in net increases elsewhere. The Swedish “consumption approach” to global GHG emissions accounting helps to elucidate the zero-sum reality of outsourcing emissions to nations where the need for economic development results in environmental injustice. While it is certainly more just to attribute all environmental costs to the consumers who benefit from the products associated with emissions, this perspective was contentious in Sweden where many saw it as anti-market. Its logical conclusion implied moving past economic and environmental de-coupling, toward de-growth. While these reports have had a substantial impact on several other nations who are now exploring the possibility of using consumption-based emissions accounting, I argue that the approach they advocate is unlikely to gain much traction within UN climate talks.

## Social Practices in Energy Related Transitions: The LED as a Transformer?

*Charlotte L. Jensen*

As a result of an emerging realization of shortage on resources, the European Commission launched an Eco-design directive for energy-using products in 2005. Since September 2009, a part of this directive has been leveled at domestic lighting, and with an increasing focus on energy efficiency, only the most energy efficient Light Emitting Diodes are to outlive the regulation through the next couple of years. However, various studies (eg. Jensen, 2012, Wall and Crosbie 2009, Bladh and Krantz 2008, Bille and Sørensen 2007, Gram-Hanssen 2005, Wilhite et al 1996, Garnert 1994) show that *lighting our home* is more than merely being an energy-consuming act of life. This paper sets out to understand some of the (predominantly Nordic) practices that have been connected to ‘lighting the home’, where the incandescent light bulb to a large extent has been defining what lighting is all about in more than 100 years. Throughout the paper, the shifts from gaslight to incandescent light as well as the introduction of the fluorescent lamp and the recent development of halogen light bulbs will be analyzed through a social practice theoretical framework. The social practice theoretical framework applied in this paper will mainly be based on Kirsten Gram-Hanssen’s four elements of practice (Gram-Hanssen 2011) which is predominantly inspired by the works of Pantzar and Shove (2010), Warde (2005) and Reckwitz (2002). The historic shifts will be compared to what currently seems to be happening with lighting through the introduction of light emitting diodes. This is done in order to understand the emergence and reproduction of certain energy intensive practices, and to show how these are interconnected to path dependency as well as emerging changes within the more systemic levels of the energy sector and the lighting industry. Further, by additionally focusing on the current developments with light emitting diodes in particular, I aim to illuminate how emphasizing light emitting diodes as a *dynamic* light sources and/or as *built-in* solutions may have consequences for the reproduction of what seems to be a practice of *homeliness* connected to domestic lighting (Jensen, 2012). The desired outcome of the paper is to give insights to how practices that involves consumption of an energy using product such as light may be complexly intertwined with several systemic levels, or regimes, such as the energy sector, the building sector and the lighting and electronics industry. This implies that focusing on a single systemic level (in this case for instance the energy sector) as often proposed in the actively discussed Multi-Level Perspective (eg Geels and Shot 2007, Geels 2010) may not always be beneficial when analyzing societal transitions for sustainability.

## **Theorizing the Holistic Voluntary Simplification Lifestyle: A Behavioral Approach**

*John Jermier & Barbara Lafferty*

The excesses of the industrialized world's consumption patterns have reached critical mass causing a cascade of environmental and social problems. Many critics argue that to avoid catastrophic consequences, the traditional lifestyle--centered on material possessions and high consumption--must be re-evaluated and revamped. They often advance some form of voluntary simplicity as a constructive alternative lifestyle (and social movement) based on frugality, eco-friendly practices, and spiritual growth and development. The research literature on the concept of voluntary simplification is sizable. Speaking scientifically, however, it has some limitations. Basic questions need to be raised concerning conceptual and operational definitions, theoretical and other nomological specifications, and empirical evidence to support prescriptions for transforming lives and institutions. In this paper, we provide a critical appraisal of the voluntary simplification literature, advocate a behavioral approach to the construct focused on the core idea of holistic voluntary simplification, and specify a model helpful in understanding the process through which this lifestyle unfolds. Our model presents a multidimensional view of holistic voluntary simplification and is focused on concrete behaviors rather than beliefs, values, and attitudes. We also discuss the limitations of changing lifestyles as an approach to solving major environmental and social problems in light of institutional constraints and political economic pressures driving capital accumulation and economic growth.

## **Using Information to Empower Ethical Consumers: Comparing Four Social Responsibility Ranking Systems for Consumers in the US, UK, and Australia**

*Ellis Jones*

Which company is more socially responsible: Coca Cola or Pepsi? Apple or Microsoft? GE or LG? Reliable data is not readily available, and the practice of “greenwashing” conceals legacies of unethical conduct. How can consumers expect to navigate the muddy waters of corporate social responsibility?

A handful of research projects have begun to address this question by attempting to synthesize social responsibility data on companies and products, but how can this information be most effectively communicated to ethical consumers? This paper compares four major ranking systems across three countries (Ethical Consumer (UK), Good Guide (US), Better World Shopper\* (US), and Ethical Consumer Guide (AU)) in order to better understand the variety of approaches these research projects utilize to allow consumers to more successfully “vote with their dollars”.

Drawing on data acquired from print materials, websites, books, software applications, and online audio/video archives, this paper examines four different approaches to measuring corporate social responsibility for consumers. More specifically, it explores the trade-offs inherent in the strategic choices made along five particular lines of reasoning:

1. **Unit of Analysis (Company or Product):** While most systems focus exclusively on the corporate social responsibility of whole companies, one includes data on the responsibility of individual products.
2. **System Transparency:** Access to the inner workings of each ranking system ranges from wide-open to carefully guarded.
3. **Value Inclusion:** While there seems to be general agreement on what needs to be measured when gauging social responsibility, each system includes a few unique characteristics of its own.
4. **Data Sources:** Ranking systems rely on media analysis, public 3rd party data, or privately-funded research as their main source of information.
5. **Consumer Availability:** While every project offers consumers access to some data online, a number of them also offer web and phone apps, printed or printable guidebooks, etc. in order to reach a broader audience.

The author offers a discussion of the strengths and weaknesses of each methodology while suggesting options for further advancement of this line of research as a whole. More broadly, this paper underscores how, in order to be effective, ethical consumerism requires robust ranking systems to accurately analyze and successfully translate social responsibility data into practical economic choices.

## **The Multiple Use of Geothermal Water in Iceland and its Impact on Well-ness**

*Örn D. Jónsson*

The paper focuses on the wide-ranging impact the utilization geothermal water has on the every day life of Icelanders. Iceland being one of the first countries to be hit by the current crisis and the sheer magnitude of the downfall got a worldwide attention in the wake of the downfall in 2008. As it turns out the Icelandic society has shown to be more resilient than anticipated and been able to retain the key institutional elements of the Nordic welfare state model. A significant part is due to the relative abundance of natural resources. It is maintained that the manifold utilization of renewable energy, namely geothermal water will play as a substantial part here.

Space heating, 99% of space heating in Iceland is from renewable sources, of which 10% is from electricity, the remaining from geothermal. The price of heating a home with geothermal water is 8 times less than using oil and the cost will not increase in the foreseeable future, the inside temperature of houses is more or less a question of preferences rather an economic one.

Greenhouses. Growing vegetables and flowers all year round has become competitive, or less expensive than imported products in most cases. Increasing skills, technological improvements and rapidly changing consumption preferences towards a lighter fare has increased the significance of greenhouse growing substantially in recent years.

Swimming pools. There are over 2 million visits to the exothermically heated outdoor swimming pools in Reykjavík (250 thousand inhabitants). The hot tubs situated beside the pools have become the most frequented gathering places in the country. The tubs are visited daily by young and old and social status is insignificant. Outdoor bathing has become one of major tourist attraction, the Blue Lagoon being the best known. The outdoor pools are a community driven public spaces, inexpensive for the general public.

The goal of geothermal heating utility has developed in sync with time, from being a cumbersome necessity, to being economically and technologically feasible solutions to the problem of ill-predictable price hikes of imported energy. In the last instance it develops as the source of epicurean pleasures,

## **Creative Consumption**

*Andrea Kim & Paul Shrivastava*

Consumption rates continue to rise in developed nations, posing a significant challenge to attaining global sustainability. This paper focuses on addressing the global consumption challenge by exploring an approach in which consumption is a part of production. We do so by proposing an aesthetic framework of “creative consumption”.

Solutions to addressing current unsustainable rates of consumption have been taken largely from a production orientation (e.g. ecological design of products). We investigate a reintegration of consumption and production as an important element of creative consumption. To highlight the consequences posed by a production focus, we analyze historical critiques of consumption. We draw from Karl Marx, who argued that a consequence of the commodification of objects is the removal of social relations in production of goods. As a result, human relationships have become objectified; no longer based on social relations but rather on the exchange of commodities. Today, the pursuit of commodities removed from the social aspects of production, has led to a focus on material consumption to fulfill higher level needs. However, chasing more goods to attain higher sense of well-being has proven to be futile, as psychological and social needs remain largely unfulfilled in western societies. Creative consumption however, will re-institute consuming meaningfully, which is directed back to individual values and concerns.

To understand what consuming creatively means, we draw from movements, such as, voluntary simplicity, slow food, and localized organic food to investigate attributes of creative consumption. These include being, socially shared and engaging, slow in pace, moderate in size, personally meaningful, psychologically satisfying, and emotionally gratifying. We also examine emerging business models, such as collaborative consumption, Web 2.0 and social medias, to assess how a re-joining of production and consumption may be attained. In the framework, we outline how attributes of creative consumption may be integrated at each step of a firm’s value chain. More specifically, we demonstrate that creating conditions, which will enable individuals to consume creatively, will produce what Marx referred to as the ‘exchange value’ of goods. We discuss the implications on business models (e.g. redesigning ownership and governance over means of production and consumption) and how this may lead to sustainable prosperity and support business models.

## **Time Use, Well-being & Greenhouse Gas Emissions**

*Jörgen Larsson, David Andersson, & John Holmberg*

Previous research show that time use patterns are linked to subjective well-being, e.g. that time for socializing is positively correlated with well-being. Time use patterns have also been shown to affect greenhouse gas emissions, for example through high emissions from extensive commuting. A few previous studies, e.g. by Tim Kasser and by Tim Jackson, have studied the links between well-being and ecological impact. They have found lifestyles that are combining high well-being with low ecological impact - a double dividend. If these findings relate to specific time use patterns it opens up for new types of sustainable consumption policies.

Previous studies have often been based on ideologically oriented respondents (e.g. voluntary simplifiers) using a few questions to proxy the respondents ecological impact. In this study we analyze whether these results hold in a larger population sample where greenhouse gas emissions are measured in detail. We also explore the respondents' life-style by focusing on their time use.

In this study a new dataset, which has been designed to facilitate analyses of time use, well-being and households greenhouse gas emissions, will be used. Over 1000 respondents in Western Sweden have answered our postal survey (response rate 40 %). The time use data covers aspects as time for paid work, commuting, TV-watching, socializing, etc. This is analyzed in relation to established measures of subjective well-being (both life satisfaction and affective dimensions) but also in relation to so called temporal well-being. Our newly developed temporal well-being index covers frequency and intensity of time pressure experiences, as well as satisfaction with how one's time is actually divided between different spheres of life. The households' greenhouse gas emissions are measured comprehensively using a combination of register-based data (kilometres driven and fuel efficiency of cars, delivered electricity and fuels for heating) and self-reported estimates (food habits, air travel, and other consumption).

The variables described above, and other factors related to e.g. values and living conditions, will be analyzed with different methods in order to understand the nature and the strength of their relations. The study is carried out by an interdisciplinary research group combining sociology and environmental science.

## **New Insights on Sufficiency from the Analysis of Domestic Consumption Practices**

*Melanie Lukas*

A transition to sustainability will not work without rebuilding the society and its socio-technical regimes, such as e.g. industry or user preferences in daily life [1,2]. If user preferences are focused as arena of change, sufficiency strategies are often excluded from the debate due to their assumed unattractiveness [3,4]. However, strategies of sufficiency could help address the current dilemma by rethinking and reframing existing life style concepts, cultural norms and social practices. Aim and methodology: The analysis is trying to demonstrate that present private consumption patterns are often affected by sufficient-moderate strategies. Additionally potentials and barriers for a sufficient life style should be investigated. Therefore, a qualitative analysis is employed. Based on a “Grounded Theory”-approach combined with a quantitative survey, 43 problem-centred interviews were carried out in Germany [5]. As theoretical background the transition framework is applied. First Findings: Nearly all interviewees share a set of common ideas about sufficient behavior. A sufficient lifestyle is attractive in some cases, e.g. in domains such as nutrition, where it goes along with moral, monetary or health purposes. In the same manner, it becomes clear that private households are special places to provide knowledge on sufficiency perspectives and could act as educational transmitter for implementing ideas of environmental or social awareness into social life or actors apply strategies of sufficient lifestyles (e.g. by sharing equipment). Prospective: The understanding of sufficiency as modest consumption is essential. Now, a differentiation of several levels of sufficient acting in private households is necessary to rebuild the model of a target-oriented sufficient behavior. Finally a user-orientated approach has to be characterized not least with the help of the transition approach.

[1] Shove, E; Walker, G (2007): Governing transitions in the sustainability of everyday life. *Research Policy* (39) 4: 471-476.

[2] Spaargaren G, Oosterveer P, Loeber A (2012): Sustainability Transitions in Food Consumption, Retail and Production. In: Spaargaren G, Oosterveer P, Loeber A: *Food Practices in Transition* 1-31

[3] Princen, T (2003): Principles for Sustainability: From Cooperation and Efficiency to Sufficiency. *Global Environmental Politics*: 3:1.

[4] Stengel, O (2011): *Suffizienz. Dissertation. Oeko.*

[5] Strauss, A; Corbin, J (1996): *Grounded Theory. Belt*

## **Recovering Earth or Fire: New Political Contestations over Waste Conversion in 21st Century United States**

*Samantha MacBride*

Social movements concerned with environmental justice and pursuing zero waste have struggled for decades in the developed and developing world to resist solid waste incinerators. Articulating a coherent “no” to industry-state projects for converting waste to energy, such groups have highlighted health risks from emissions, and community harms from facility siting, as unacceptable and inequitable. Those organizing at the community and transnational scale have also argued that waste-to-energy robs discarded materials from other, more sustainable forms of transformation - including reuse, composting, and recycling. In parallel, they note that state investment in large scale, private conversion infrastructure precludes the economic success of more participatory forms of working with waste, at the level of social enterprise and informal labor. Focusing on the United States, this paper revisits social movement opposition to waste-to-energy in the light of a (re)emergence of interest and investment in several conversion technologies that are distinct from traditional incineration - namely pyrolysis, gasification, chemical recycling, and anaerobic digestion. At present, federal and regional policies surrounding renewable fuels and energy, and carbon emission reduction, combined with a shift in local political economies of waste, are setting the stage for a renaissance in conversion as a waste management method. Increasingly, venture capital and multinational waste corporations are partnering to offer cash-strapped localities alternatives to landfilling in a new guise. How are social movements grappling with these developments? In particular, how are they using notions of risk, control over materials, and public finance to guide policy towards other alternatives? This presentation will take up these questions.

## **Grid Dependence, Finance and the Social Implications of Renewable Energy Policy in Massachusetts**

*Stephen M. McCauley*

Efforts to promote smart grid technologies and renewable energy production represent the most significant re-visioning of electrical power systems in the United States in the last century. Developments in these niche technologies provide an opportunity to consider the emerging social institutions that are shaping the contours of a post-petroleum economy. A generation removed from analyses of the 1970s which suggested that renewable energy technologies would enable more pluralistic, democratic energy systems, recent developments raise the question of whether new energy technologies and associated regulations allow for community-based control and other alternative institutional arrangements consistent with the notion of ecological limits and the imperatives of a no-growth society. In the state of Massachusetts, progressive policies aim to encourage small scale solar photovoltaic generation and promote a sustainable green energy economy in the state and its recognized Green Communities. Using an institutional political economy perspective and interviews with key stakeholders in the private sector, state government and community-based organizations, the paper interrogates the social and institutional implications of two Massachusetts energy policy mechanisms: the Solar Renewable Energy Credits (SRECs) market and virtual net metering. Findings suggest a complex institutional terrain characterized by the financialization of energy technology deployment, state commitments to both economic growth and local green economies, and ongoing challenges for community-based renewable energy production.

## **Transdisciplinary Consumerism**

*Sue L. McGregor*

This paper brings a transdisciplinary approach to the study of consumerism. The whole of humanity and the earth are dependent upon us changing the nature of 21st century consumption so that it embraces a humanity and planetary imperative. This change requires a paradigm shift, away from the consumerism ideology, understood to be a set of beliefs and values intended to make people believe that human worth, happiness and identity are best ensured in terms of our consumption and possessions. Instead of sustainable consumption, a sustainable life path would better enable us to overthrow the consumerism ideology. This paper strives to enrich related discussions by introducing the idea of transdisciplinarity. There are two well recognized approaches to transdisciplinarity. One stems from a 2000 meeting in Zurich, and presumes transdisciplinarity pertains to joint problem-solving of problems pertaining to the science-technology-society triad (no need for a new methodology). The other approach, used in this paper, is lead by Basarab Nicolescu, and emerged at a 1994 meeting in Portugal. The latter views transdisciplinarity as a new methodology for creating new knowledge. It is informed by quantum physics, chaos theory and living systems theory. It has its own set of axioms for what counts as knowledge (epistemology), logic, reality (ontology) and values (axiology). Knowledge is complex and emergent. There are multiple levels of reality and their interface is mediated by the Hidden Third. It espouses the Logic of the Included Middle, and values play an integral part in the creation of transdisciplinary knowledge. The basic tenet of Nicolescuian transdisciplinarity is that the problems of the world are too complex to be dealt with using mono, multi or interdisciplinary approaches. Transdisciplinarity is an integrated combination of (a) disciplinary work, (b) scholarship between and among disciplines (interdisciplinarity), and (c) knowledge generation beyond academic disciplines and across sectors external to the university, at the interface between the academy and civil society. Transdisciplinarity offers a powerful paradigmatic perspective from which to study and resolve complex, emergent human problems created by the consumerism ideology.

## **Sustainable Development and Individualisation: Tensions and Implications**

*Lucie Middlemiss*

This paper explores the tensions between the goal of sustainable development (SD) and the social trend of individualisation, and the implications of these tensions for future policy and practice. It begins by surveying the literature on both of these issues in detail. It then points out two key points of tension between these literatures. First, that if individualisation is indeed occurring, the goal of participation for SD seems unrealistic. Second, that empirical work suggests a more complex picture, in particular there is a resurgence in community action for SD and therefore that individualisation is unlikely to be a universal phenomenon. It finishes by drawing out the implications of these tensions for SD policy and practice. Writers on SD emphasise the importance of participation as a means to improving people's quality of life, without compromising the natural systems on which human and other life depends. The study and practice of sustainable consumption has contributed to this emphasis, as it has become clear that as part of a strategy to create a sustainable world, ordinary people will have to be persuaded to change their behaviour. Individualisation is a phenomenon identified by social theorists, who claim that in western life, social forms such as class, the family and community have less relevance to people's identities, and that individuals increasingly see themselves as separate from society. In a post-modern world, people's sense of identity relates more to their own life experiences (in particular to consumption) than to how they situate themselves in relation to other people or communities. These factors are likely to have resulted in policy and practice promoting individualisation. There are two important tensions here. First, while widespread participation is seen as essential to the creation of a sustainable society, it seems that individualisation may militate against this. Changes in self-identity and social relations mean that people do not feel a strong connection to social forms such as the family or community. Calling on such social forms to work towards SD seems rather unrealistic. Second, empirical work suggests that this analysis is over simplistic. The resurgence in interests in community within the SD movement, makes it unlikely that individualisation is a universal phenomenon. In addition the 'signs' of individualisation are not straightforward, with consumption having a complex function in people's lives.

## **Alternative Economies Unbound**

*Diana Mincyte and Karin Dobernig*

Our paper focuses on the definition of “alternative economies.” We will show how hegemonic understandings of this concept in Western Europe and in North America, have tended to rely on a particular interpretation of risks as uncertainties that have to do with environmental and food safety and quality. In contrast, other alternative economic practices in which the key uncertainty to avoid is economic risks of falling into poverty tend to be ignored and even shunted off to criminality. The empirical part of our paper will focus on urban farming in New York City to examine different motivations and economic and moral orientations that define these movements. In exploring the diversity of these movements, I will seek to map 1) their diverging relationships with the ideas of community and moral responsibility, 2) their different engagements with mainstream markets, and 3) their widely different economic interests. This paper critiques and expands the debate about alternative movements as vehicles for building post-consumerist societies by showing how these debates have been limited to the few “middle of the road” examples.

## **Sumptuary Codes as One Method to Achieve Sustainable Architectural Production**

*Steven A. Moore*

Sumptuary codes are explicit or implicit laws constructed to limit consumption by all, or some members of society. They are generally thought to be archaic, but such codes are still very much with us, even if unrecognized. Although the history of sumptuary coding is commonly related to couture and food, it has also played a large role in the regulation of architectural production. Although architecture is conventionally understood to be a fine or applied art designed by singular individuals, that popular understanding is best reframed by analysis of data related to climate change. According to the U.S. Department of Energy, the construction and operation of buildings accounted for 38% of CO<sub>2</sub> emissions and 38.77% of US annual energy consumption in 2006 and is rising. This amount is twice that contributed by the transportation sector, which the public generally identifies as the primary cause of climate change. The production of architecture in the United States is, then, the single greatest contributor to climate change. In the paper I categorize sumptuary codes into five distinct types, three of which are directly related to architectural production. Of these three, the most common form of sumptuary code rewards over-consumers by bestowing upon them a certain kind of social distinction. Such distinction is, however, ironic because consumptive practices are detrimental to the very community that rewards them. In contrast, I document a few contemporary cases in which social distinction is awarded on the basis of relative under- rather than over-consumption. I hypothesize that this emergent form of sumptuary coding, combined with the two less-dominant sumptuary traditions--protecting local economies and the conservation of community resources--may provide a more democratic and sustainable form of social regulation. The paper concludes by relating sumptuary codes to a broader proposal for socio-technical code-making for sustainable cities.

## **The Place of Sustainable Consumption in the Structures of Taste of Italians**

*Emanuela Mora & Elisa Bellotti*

The paper aims to extend the analysis of a survey carried out in the summer 2005 on the diffusion of sustainable consumption in Italy. Based on a statistically representative sample of the Italian population (1500 cases, aged from 25 to 74 years old, living in main towns of Italian provinces), the survey explored how sustainable consumption and practices are integrated with other forms of consumption and practices, specifically the cultural ones. The analysis was conducted with different types of multivariate statistical tools. The main result was the outline of a modal type of consumer in the field of sustainable consumption; she is a young/adult woman (25 to 54 years old), with medium high and high education degree and some interest in political and social issues. One hypothesis we wish to explore is a change in the values of goods: goods in the field of sustainable consumption do not seem to have a pre-codified positional value (as signs of status - Baudrillard 1978), but they are charged with meanings by people who purchase and use them in different, aware and creative ways (Willis 1990). They carry a biography where the value is not mainly aesthetic, but is embedded in ethical choices that underline the value of use. In order to address this hypothesis, we compare results of cluster analysis of purchasing choices with results from a different methodological approach. Network analysis is used here to partition the network of purchasing choices, showing the position of sustainable consumption within the whole field of consumptions. Network analysis can implement the observation of the space of consumptions identifying centrality and roles of specific types of purchasing choices. Therefore we aim to investigate what kind of consumptions can mediate between different choices, where the stake is not to create symbolic boundaries based on positional values, but to bridge across different choices and identify patterns of possible diffusion of ethical behaviours and tastes. In summary, we will show how sustainable consumption choices can be used as a strategic effort to change the stake of the field of consumption, while still maintaining an élitarian role of distinction in cultural tastes.

## **Urban Homesteading: Performing Sustainable Lifestyles and Livelihoods through Self-provisioning**

*Oona Morrow*

Mounting concerns over the social and environmental risks posed by industrial food, climate change, and the global economy have given rise to a number of localized resilience strategies, especially among urban households in the global North. One such resilience strategy is Urban Homesteading, a sustainable lifestyle movement which revalues domestic self-provisioning skills like food preservation, gardening, and chicken and beekeeping. Through self-provisioning urban households refashion themselves as producers rather than consumers, and develop alternative performances of economy, sustainability, collectivity, gendered identity, and domesticity. Within this context self-provisioning presents a viable and potentially democratizing alternative to both capitalist consumption and sustainable lifestyles which privilege consumer choice. Drawing on ethnographic research with Urban Homesteaders in the Boston area, the research aims to enhance our understanding of sustainable lifestyles and urban agriculture, especially as they intersect with issues of livelihood and leisure. The paper explores the social and economic relations that develop around these self-provisioning practices as useful entry points for developing a broader notion of urban and household sustainability that includes everyday-vernacular approaches to sustainability, social sustainability, and hedonistic sustainability.

## **Explaining the Variation in Households: Greenhouse Gas Emissions: Values, Norms or Structural Preconditions?**

*Jonas Nässén, David Andersson, Jörgen Larsson, & John Holmberg*

Previous research has shown that the amount of greenhouse gas (GHG) emissions coupled to private consumption vary considerably between households. Understanding this variance is an inherently interdisciplinary issue and different fields of research have provided different insights. Researchers from engineering and architectural disciplines have emphasized the role of infrastructural and spatial parameters such as urban density which may lock people into for example automobile dependency. A considerable body of psychological research focus on the role of attitudes, norms, and perceived control in explaining self-reported Environmentally Responsible Behaviours (ERBs) such as recycling habits, measures for energy conservation or purchase of eco-labelled products. Consumption research based on household budget surveys, however, indicate that low consumption and GHG emissions in one domain may rebound through increasing emissions in other domains, calling for more complete measurements of households' emissions than proxies like ERB. These studies also stress the important role of income, and the difficulty to break the strong relationship between total expenditures and GHG emissions. In this interdisciplinary study (the authors have different backgrounds in economics, sociology and environmental engineering), we test the explanatory value of different models in the framework of the same empirical material. We analyze the role and importance of different types of factors using path analysis. The analysis is based on a survey sent to 2500 households in a region of Sweden with a response rate of 40%. The households' GHG emissions are measured comprehensively using a combination of register-based data (kilometres driven and fuel efficiency of cars, delivered electricity and fuels for heating) and self-reported estimates (food habits, air travel and other consumption). Regressions are run both for total GHG emissions and for sub-domains with emphasis on private transport which accounts for a large share of GHG emissions in Sweden. The measured explanatory factors include:

- Socio-demographic factors: sex, age, educational level, occupational level, household size, household income.
- Psychological factors: values (MVS scale), environmental attitudes, social norms, perceived time pressure.
- Spatial and infrastructural factors: commuting distance, type of dwelling and residential area, urban density, availability of public transport.

## **Case Study of the First Pilot Community Supported Agriculture Group in Warsaw, Poland**

*Julia Olszewska*

The idea of Community Supported Agriculture (CSA) has been spreading around the globe since the inception of the first teikei in Japan in the 1960'. Teikei, which in Japanese means 'farmer's face', represents the idea of connecting consumers with local food producer to secure farmers with stable incomes and the consumers with safe, seasonal and fresh food. This alternative form of organising food systems has been establishing its position in the in the North America since the 1980' and later have been gradually launched in different European countries since the turn of the centuries. It addresses problems of dominant food systems which proved to be resource wasteful and reinforce social inequalities. This paper sets sets to give a general overview of community supported agriculture initiatives in Poland. The article will categorise and quantify dispersed initiatives happening across the country: consumers co-operatives, consumer groups which enter long-term contracts with the producers or new channels of direct sale. In such context, I wish to present a case study of a pilot group set in the capital of Poland, Warsaw, which has just ended their first contract. The paper will discuss their experience, reflections and recommendations for the future. Such examination shall open up discussion whether a model of CSA is a viable alternative for the creating a more sustainable food system in Polish reality.

## **Profiling the Market Segment of Renewable Energy (RE), Low Carbon Model Town (LCMT) and Electric Vehicle (EV) in Harnessing Malaysian Economic Transformation Model**

*Ismi Rajiani & Edna Buyong*

Malaysia National Green Technology Policy as one of Economic Transformation Model strategies emphasizes improvement in the area of energy, building, water & waste management and transportation. However switching to Renewable Energy (energy) and Low Carbon Model Town (building) are behavior related to sustainable energy consumption that typically recurs infrequently in an individual's live. The same is true for purchasing Electric Vehicle (transportation), which might recur even less frequently. Consequently, the need to win new customers in these markets is high. Being able to pinpoint groups with a high potential to become new customers is therefore extremely valuable to ensure the smoothness of Economic Transformation Model.

Knowing the potential customer is more difficult if there is constant flux. Therefore, we focused on development to discover trends that enable predictions of the future. We focus on personal values to characterize consumers because it has been shown that they impact purchase decisions (Doran, 2009). The data was collected via questionnaires. Personal values are assessed and value groups defined by running cluster analyses. Three stable groups are expected to be found: 1. LOHAS (those pursuing a Lifestyle of Health and Sustainability), 2. Traditionalists and 3. Career-oriented. In line with Mohr (2010), who outlined the 5 (five) diffusion of innovations: Technology Enthusiast, Visionaries, Pragmatist, Conservatives and Skeptics, the respondents who are purchasing RE, LCMT or EV are grouped according to the point in time at which they have purchased/ switched. For each time period the percentage of LOHAS, Traditionalists and Career-Oriented among those who switched/ purchased during that period is examined. This study argues that both values and age are relevant in predicting the point in time of purchase and career-oriented among users of sustainable energy solutions has continuously grows indicating that consumers beyond the eco-niche become increasingly interested in such solutions. Additionally, the age of users at the point of time of purchase are suspected to become crucial phase in determining readiness to switch/purchase.

## **Towards a Sustainable Business Form: A Business Modelling Process and Tools**

*Padmakshi Rana, Samuel Short, Nancy Bocken, & Steve Evans*

The transition towards a sustainable economy - 'pursuing individual and societal well being', will require a significant shift in the way businesses are conceived and operated to generate sustainable value (environmental, social and economic). Eco-efficiency approaches have gained widespread use across industry. However, it is increasingly apparent that such innovations are failing to address the pressing problems of over-consumption. In fact, many innovations seem to lead to negative rebound effects that can encourage more consumption. This transition in particular requires business model innovation to embed sustainability in the proposition, delivery and creation and capture of value. It has been observed through a review of literature and industrial practice that the innovation in business models for sustainability and their business modelling activities is generally ad-hoc, incremental, and seems to depend on radical visionary leadership. If sustainability is to be realised and taken to scale the business model innovation process has to become more clearly defined. Existing business models and modelling activities predominantly generate economic value and focus on customers and shareholders' interests. Infinite growth and the inherent throughput of energy and resources demands is core to most current business models. Business models therefore need to adapt to the requirements for sustainability. To integrate sustainability into the core of the business a comprehensive consideration of the broader range of stakeholders across the production and consumption system is necessary to rethink the value proposition of the firm for society. Moreover, design and development of tools that explicitly include a multi-stakeholder view of value is seen as being integral towards business model innovation for sustainability. The paper proposes a sustainable modelling process and a portfolio of tools that aim to deliver sustainable value. The process consists of five steps and each step will be accompanied by a selection of tools that will assist firms in understanding and delivering sustainability. Firms can select and use the tools as per the nature and requirement of their business and its operations. The objective of the paper is to assist industry in the analysis of future oriented and novel forms of business that will support sustainable production and consumption in a technological society with limits to resources.

## **Moving Toward the New Economy? Assessing the Institutionalization of the New Economics**

*Jeanine C. Rodgers*

It is increasingly acknowledged that to reach global and regional sustainability goals, economic growth and consumption levels in wealthy developed nations will need to stabilize or even reverse. Organizations and projects of a wide variety have emerged and expanded to take on this challenge, and shape the so-called “new economy.” This paper seeks to gain a clearer picture of the impacts of ongoing efforts to develop a shared new economy knowledge framework within broader narratives pertaining to sustainability and to assess their degree of institutionalization. I focus on the influence of four United States-based organizations with missions centered on developing and promoting a new economy as a solution to intertwined systems-level crises. Data were collected through interviews with prominent figures within these four “new economy organizations.” Analysis showed that a novel paradigm, rooted in long-gestating economic ideas, is currently emerging but remains underdeveloped. To date, this nascent paradigm has not had any noticeable influence on mainstream sustainability discourses or dominant economic thinking, and remains politically marginal. At this stage, new-economy advocates risk losing critical momentum and increased interest generated by recent events such as the 2008 financial crisis, the Occupy movement, the new debate in the United States about income inequality. Recommendations that spring from this work entail a scaling-up of efforts to more fully develop a comprehensive theoretical framework for the new economics; to formulate a clear political agenda; to take deliberate strategic steps to further institutionalize the field; and to ready the message for audiences beyond allies and the already-interested. Published academic research which defines the new economy paradigm is also lacking, and necessary for garnering support from key target audiences. Current efforts are hindered by a branding and messaging problem, exemplified in part by use of the nebulous title - new economy. More suitable nomenclature should be decided upon and fully-embraced by the community. A greater sense of urgency is required for the nascent paradigm to garner popular relevancy and increased capacity.

## **The Emergence of an Ecological Habitus**

*Juliet Schor*

Bourdieu's concept of habitus describes a set of tastes and dispositions that operate according to a class homology--e.g. a working-class preference for utility, or a bourgeois orientation toward luxury. In the U.S. context and broadly consistent with Bourdieu's research, Holt (1998) found that American high cultural capital (HCC) consumers were characterized by their cosmopolitanism, idealism, connoisseurship, and affinity for the exotic and authentic. In this article, we revisit the characteristics of HCC taste using 'conscious consumers' as illustrative of a changing upper-class habitus which incorporates environmental sustainability principles. Using both quantitative survey data of self-described conscious consumers as well as four qualitative case studies, we argue that conscious consumers are heavily HCC and that their tastes have indeed shifted since the mid-90's. We show that on a number of dimensions--cosmopolitanism, idealism, and relation to manual labor--a new articulation privileges the local, material and manual, yet is still largely emblematic of the underlying logic of class homology. We conclude by arguing that these shifts are a direct consequence of sustainability discourses within HCC circles.

## **Lifestyle Leapfrogging - Opportunities and Challenges for Sustainable Consumption by Emerging Urban Consumers in Developing Countries - Examples from China and India**

*Patrick Schroeder, Jinbo Wan, & Manisha Anantharaman*

The concept of “leapfrogging” proposes that developing countries can achieve sustainable development trajectories without replicating the polluting development pathways of industrialised countries. While realising leapfrogging seems easy in theory, in practice it is associated with many difficulties. To by-pass the outdated development model of industrialised countries, technological leapfrogging strategies alone will likely not be sufficient. This paper proposes that to achieve leapfrogging development in developing countries, leading to reduction of environmental impacts, technological approaches need to be complemented by behavioural changes and social innovation of consumption systems to enable “lifestyle leapfrogging” - realising sustainable lifestyles of new urban consumers from the outset. Taking the case of Chinese and Indian emerging urban consumers as examples, the paper identifies drivers for current consumption trends, relevant policy instruments and civil society initiatives to identify opportunities and barriers for social transitions towards sustainable lifestyles in China and India, potentially bypassing the unsustainable consumption patterns and lifestyles of consumers in industrialized countries. The paper will be structured as follows. Following the introduction, the concept of leapfrogging is introduced by means of a brief overview of existing literature. In section three the concept of “lifestyle leapfrogging” is introduced, together with an overview of instruments and mechanisms which would be required to facilitate leapfrogging of unsustainable lifestyles. Section four presents an overview of recent Chinese and Indian consumption trends and data. Section five provides an analysis of some examples of China’s and India’s policy measures and other initiatives aimed at promoting sustainable lifestyles. Finally, the last section addresses the issues of political ideology, cultural values and spiritual traditions in the two countries and how these affect lifestyles and consumption patterns.

## Designing for an Emergent Post-car Culture

*Kakee Scott*

Proposing sustainable mobility systems in the United States can be a daunting challenge in the face of a seemingly entrenched ‘car culture’— automobile-dependent and geographically dispersed infrastructures, economies, lifestyles and social relations. However, recent statistics in the news give evidence that the car may be losing its hold, in the US as well as internationally. The impact of economic decline on household incomes and higher gas prices may have generated frugality in the purchase and use of cars, but this is not the only mechanism of change. Urbanization and a revitalization of urban culture has corresponded with increased affluence and younger residents in urban areas, while suburbs are increasingly populated with older, poorer, and marginalized communities for whom car travel is difficult. Social media and a friendliness toward collective transport seem to have an influence on the reduced focus on cars and driving among younger generations of Americans (Sivek, 2011; Thompson and Weissman, 2012).

These demographic and cultural shifts suggest opportunities for introducing new transport practices, networks and businesses. Offsetting car use with conventional public transit systems is financially unfeasible in most American regions, where residential communities and commercial centers are scattered over such large areas that buses and trains are impractical. Meanwhile, a collective fleet of 136 million US automobiles operate with 20% passenger capacity when driving, and parked 96% of the time (US DOT). Creative, diverse alternatives are needed to respond to these unique, changing conditions and clever approaches to facilitate easy transitions for such alternatives to take hold.

This paper will not attempt to provide new evidence and understanding on these emerging trends, but will discuss how they might be leveraged through strategic design approaches, using an award-winning student design project as an example. Within a design studio course, the students employed strategic approaches not merely to respond to emerging evidence, but to develop concepts to engage and augment these trends and foster new developments. The students applied a combination of contextual inquiry, visioning, scenario development, narrative prototyping and branding to create a long-term transition framework merging considerations for structural change and concurrent shifts in everyday life. Their concept, WeSwarm, is proposed as a technology platform to enable networks of users in developing informal transit hubs through a gaming and navigation system, while bridging bottom-up efforts with policy developments.

Sivak, Michael, *Recent Changes in the Age Composition of U.S. Drivers: Implications for the Extent, Safety, and Environmental Consequences of Personal Transportation*. University of Michigan Transportation Research Institute. 2011.

Thompson, Derek and Jordan Weissmann, ‘The Cheapest Generation: Why Millennials aren’t buying cars or houses, and what that means for the economy’ *The Atlantic*. September 2012.

U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Transportation Statistics Annual Report 2010*.

## **Growing Green Money? Mapping Grassroots Currencies for Sustainable Development**

*Gill E. Seyfang & Noel Longhurst*

Grassroots currencies are parallel sustainable monetary systems, developed by civil society groups and non-governmental organisations (NGOs) as an innovative response to a range of social, economic and environmental problems. Frequently informed by ‘new economics’ perspectives on development, value, economic scale and growth, and by the desire to challenge consumerist lifestyles, they have multiple sustainable development objectives: localising economic development, building social capital and substituting for material consumption, valuing work which is marginalised in conventional labour markets, and challenging the growth-based monetary system. This international movement is pioneering novel community-based economic practices, whilst attempting to create new systems of financial services provision, yet it remains significantly under-researched. This paper presents new empirical evidence from the first international study of the scope and character of grassroots currencies. It identifies the diversity, scale, geography and development trajectory of these initiatives, discusses the implications of these findings for efforts to achieve sustainable development, and identifies the challenges to be overcome, to help harness the sustainability potential of these grassroots innovations.

## **Community Energy in the UK: Examining Grassroots Innovations for Sustainable Energy Transitions**

*Gill E. Seyfang & Adrian Smith*

System-changing innovations for sustainability transitions are proposed to emerge in radical innovative niches. ‘Strategic Niche Management’ theory predicts that niche-level actors and networks will aggregate learning from local projects, distilling and disseminating best practice. This should lower the bar for new projects to form and establish, thereby encouraging the innovation to diffuse through replication. Within this literature, grassroots innovations emerging from civil society are an under-researched site of sociotechnical innovation for sustainable energy transitions.

We consider the emerging community energy sector in the UK, in order to empirically test this model. Community energy is a diverse grassroots-led sector including both demand- and supply-side initiatives for sustainable energy such as community-owned renewable energy generation, village hall refurbishments, behaviour change initiatives and energy efficiency projects.

Our analysis draws on in-depth qualitative case study research with twelve local projects, and a study of how intermediary organisations aim to support local projects and encourage replication. This rich data allows us to examine the extent and nature of interactions between project and niche in order to evaluate the utility of niche theories in the civil society context. In particular, we investigate which types of knowledge, support and resources were needed by our case study projects to become established and thrive, and compare and contrast this with those offered by the emerging community energy niche. Our findings indicate that while networking and intermediary organisations can effectively collate and spread some types of learning and information necessary for replication, this is not sufficient: tacit knowledge, trust and confidence are essential to these projects’ success, but are more difficult to abstract and translate to new settings.

We draw out the implications of our findings for niche theory, for community energy and other grassroots practitioners aiming to build robust influential niches, and for policymakers eager to harness civil society’s innovative potential for sustainability.

## A Visualisation of Care in Ethical Consumption

*Deirdre Shaw, Robert McMaster, & Terry Newholm*

Drawing on the understanding that visual and verbal language occupies the central place in the construction of our individual and collective realities, we argue that greater attention must be given to peoples' expression of 'care' in relation to consumption. We suggest that to 'care that' does not necessarily lead to 'caring for', but that a closer examination of the intensity and articulation of care can lead to a greater understanding of consumer narratives and, thus, behaviour. We examine this in the context of consumers who consider the role of ethical concerns in their consumption and lifestyle choices.

Ethical consumption as a practice involves the purchasing and consuming of products that explicitly reflect a consumer's ethical concerns and views. It, therefore, involves various stages of decision-making based on processes of evaluation by the individual. It also implies that these stages are moulded by the individual's beliefs and values, which themselves emerge from complex processes associated with the individual's social embeddedness. Some notable contributors to the ethical consumption literature have, however, identified what has become popularly termed as an "attitude-behaviour gap" (e.g., Carrington *et al.*, 2010). In effect, there is a disconnect between individuals' intentions, based on their values and beliefs, and their consumption practices. We wish to contribute to a broadening and deepening of this analysis by emphasising the notion of care in the context of ethical consumption. In our view the ethical consumption literature under-appreciates the importance of care and, therefore, under-elaborates conceptions of care in its analyses. We recognise that notions of care are acknowledged in various parts of the ethical consumption literature, but are seldom described, defined or analysed beyond noting the existence of care. We further find no exploration of the visual language of care in this context. Indeed, some current references to care are, we feel, 'economistic' and, therefore, reductionist.

Interviews were conducted with 10 volunteer participants, who identified themselves as ethical consumers. The interviews adopted the initial stage of the Zaltman Metaphor Elicitation Technique (ZMET) by asking participants to collect 8-12 visual images that represented their thoughts and feelings about their expression of care in relation to consumer choices. ZMET is a method that uses visual imagery to uncover and stimulate thought processes during a personal face-to-face interview (Zaltman and Coulter, 1995). The interview process was centred on the images selected by the participants. We argue, however, that the resultant visual images are more than a means to data, but rather are an integrated aspect of the research process where interpretation by participants is a pertinent initial stage in data analysis (Bolton *et al.*, 2001).

In seeking to investigate the relationship between care and ethical consumption decisions we identify and describe various types of care; how care is both instinctive and socially constructed, and how it possesses deontological qualities associated with an individual's social embeddedness. We examine this by drawing on Blustein's (1991) descriptions of care, and his argument that there can be care without commitment, but there cannot be commitment without care.

The purpose of the paper/presentation is to outline the findings of the research, which integrates visual and verbal data, and that discusses a comprehending care and the potency of an ethic of care that may be useful in developing the academic discussion of ethical consumption and sustainability.

### References

- Blustein, J. 1991. *Care and Commitment* (Oxford University Press: New York).
- Bolton, A., C. Pole and Mizen, P. 2001. 'Picture This: Researching Child Workers', *Sociology*, 35(2), 501-518.
- Carrington, M. J., B. A. Neville and G. J. Whitwell. 2010 'Why Ethical Consumers Don't Walk the Talk: Towards a Framework for Understanding the Gap Between the Ethical Purchase Intentions and Actual Buying Behaviour of Ethically Minded Consumers', *Journal of Business Ethics* 97, 139-158.
- Zaltman, G. and R. H. R. Coulter H. 1995. 'Seeing the Voice of the Customer: Metaphor-Based Advertising Research', *Journal of Advertising Research* 35(4), 35-51.

## **Facilitating the Shift to Sustainable Production and Consumption through Business Model Innovation: Towards a Unified Research Agenda**

*Samuel W. Short, Nancy Bocken, Padmakshi Rana, & Steve Evans*

The study and practice of sustainable production to date has focused primarily on eco-innovation and eco-efficiency. While positive, these approaches are struggling to reduce overall resource use and environmental degradation, and also failing to fulfil many social needs. It is increasingly apparent that business as usual with just incremental efficiency improvements is not the solution for a sustainable future. A far more radical system-level approach is required with the objective of substantially changing current patterns of production and consumption. At the core of the change must be a change in the way business and commerce are conceived and the purpose of business in society - the business model is a key to this. The required shift may encompass delivering functionality rather than physical ownership, integrating closed-loop materials cycles, encouraging frugality and sufficiency rather than over-consumption, environmental and social stewardship, and so on. Some of these themes are already explored in the literature and practice, but there has been limited attempt to-date to bring the various strands of literature together under the unifying theme of sustainable production and consumption in a manner that engages with industry. There is also a limited understanding of what business innovations might best facilitate sustainable production and consumption in mainstream industry. This paper builds on previous work by the authors that proposed a framework of 'business model element archetypes', which brought together streams from the literature and practice on sustainability through the lens of business model innovation. This work introduced a proposed categorisation of archetypes covering the spectrum of innovations currently seen for enhancing environmental and social performance of firms. This categorisation primarily focused on the production side of sustainability. This paper now explores how the proposed archetypes might apply to the sustainable consumption research agenda. By bringing the additional focus on consumption as an explicit objective, the archetypes are revisited and priority archetypes that might best support the necessary changes are suggested. The interaction between the various archetypes in delivering or hindering sustainable consumption and production is explored. Finally ways to use the archetypes in a business context are introduced to drive new business model development for sustainable consumption.

## **The Good Mother: How Social Institutions Structure Environmental Consumption**

*Rachael L. Shwom, Norah MacKendrick, & Lori Baralt*

While changing technologies and how they are used (practice theory) are the focus of many mainstream discussions on consumption, we argue these perspectives overlook the extraordinarily social nature of the major factors that structure consumption. In this paper, we build a theoretical perspective that focuses on how major social institutions, the formal and informal rules that define how we live our lives, such as family or home, structure environmental consumption. To advance this theoretical understanding, we build on existing research (along with some new unpublished survey data) that explores how the changing societal definitions of what it means to be a “good mother” impact environmental consumption. The picture that emerges is one where the definitions of what it means to be a good mother influence consumption choices such as home location choice, size of home, car choice, household material consumption, food consumption, and toxics. Becoming a “good mother” entails shifting forms of environmental consumption in conflicting ways (i.e. a more energy intensive house in the suburbs and a “safe and roomy” energy-intensive S.U.V. accompanied by an increase proportion of organic foods and cleaners). Becoming a “good mother” also interacts with the work on time use and consumption as pressure to balance mothering and other life demands (such as career) influence environmental consumption. Understanding how environmentally significant consumption is tied up in social institutions advances the understanding that social institutional change can be as powerful as new technologies in making consumption more sustainable.

## **Commons-based Peer-production in FabLabs and Hackerspaces: Anticipating, Configuring and Performing Post-consumer Societies?**

*Adrian Smith & Sabine Hielscher*

Designers, crafts-people, students, the unemployed, hobbyists, the retired, and inventors, are amongst diverse groups of people making things together in community-based workshops. Equipped with versatile digital design and manufacturing technologies, global networks of ‘commons-based, peer-production’ workshops, like Hackerspaces and FabLabs, are spreading rapidly. Emphasis rests in bringing people from diverse backgrounds into collaborative DIY projects where they innovate and learn together - from making toys and jewellery to solar panels and eco-houses - and using on-line social media to connect to open-source designs, tutorials, and workshops globally.

Excited claims are made about workshops transforming practices of design, innovation and consumption and ‘how you live, work and play in a world where anybody can make anything anywhere’. Peer-production advocacy includes claims about workshops and associated ‘maker’ cultures roles anticipating a ‘third industrial revolution’ and post-consumer sustainable societies. Less evident are social scientific analyses of the practices and governance arrangements actually emerging in workshop spaces and networks, and hence their possibilities and limitations for sustainability.

Some workshops do enable design and innovation for recycling, re-manufacturing, and feeding user-led prototypes into sustainable local enterprise. They might even reinforce virtues relevant to post-consumption societies through peer production, the sharing economy and collaborative consumption. However, evidence also suggests a dispersal of production capacity, diminished (resource) scale efficiencies, and intensified consumption through the personalisation of manufacturing.

Our paper develops a framework for analysing workshops. Drawing upon science and technology studies, social practice theory, and material culture, we consider community workshops configuring and performing production and consumption across three inter-connected spaces: networked-communities, local-workshops, and user-projects.

In the networked-communities space, sustainability potential is analysed through the way different workshop visions are made meaningful in blogs, on-line discussions, forums (e.g. hackerspaces.org), and events (e.g. FabFuse 2012). Four visions are prominent in maker culture: 1) Empowering grassroots creativity and innovation; 2) Reinforcing the possibilities for alternative, post-consumerist patterns of localised sustainable production-consumption; 3) Democratising design and manufacturing; and 4) Enabling the peer-production of goods and services.

The local-workshop space analyses how workshop creators try to influence their strategic direction, through images within their mission statements and approaches to training participants in design and manufacture. Hackerspaces are self-organised by users (hackerspaces.org claim over 1100 worldwide), whereas FabLabs adapt a flexible model pioneered by MIT (wiki.fablab.is claim 147 FabLabs worldwide). Resource interdependencies with local authorities, skills and enterprise agencies, charities, and firm sponsorship, alongside workshops with volunteer resources are important factors.

Finally, user-project spaces consider how user-projects are being performed in each workshop and across workshops. Evidence here is hardest to access, but existing research and our field observations indicate considerable diversity. Whilst interest in sustainability projects is present, it does not appear dominant compared to other motivations.

Our analysis suggests complex relationships between these spaces. When combined with contested ambiguities inherent to sustainable development, then static appraisal of sustainability potential is misplaced. Rather, workshops constitute a dynamic space for experimentation, and it is the emerging capabilities and material cultures that are most significant for aspirations to post-consumer societies.

## **How to Change Mobility Practices? The Example of Vauban District in Freiburg, Germany**

*Philipp Späth*

When plans were developed in the late 1990s to convert the Vauban area in Freiburg into a district for 5,500 people, civil society actors lobbied strongly for a design that would enable and support a car-free life and environment with all possible means. Consequently, parking space in parts of the new district was limited to park houses at the fringe of the settlement and a way was found to bypass the building code which requires every household to provide parking space for a car, regardless of whether they use one or not. These innovations in the field of regulatory institutions together with infrastructural decisions (settlement layout, parking facilities, tram line) worked hand in hand with the building-up of various forms of car-sharing and resulted in a built, institutional and social environment which is very supportive of a car-free lifestyle. After describing this multi-faceted process of urban development, I focus on the emergence of various social practices that make individual car ownership obsolete, and to what extent this emergence was supported by particular decisions in the planning of the district.

## **The Messaging of Sustainability**

*Laura Stanik*

For more than a decade, numerous scientific panels in the United States and beyond have asserted that changes in individual behavior will be necessary to ensure long-term sustainability (e.g., Royal Society and National Academy of Science 1997; National Research Council 1997, 1999; IPCC 2007; Stern 2007). Research suggests that individual behavior change is an important component when altering cultural norms and political actions (Schor and Willis 2009), and in many cases, collective community action and institutional change actually spring from individual action (Dowie 1999). There also has been a tremendous amount of research identifying components of successful social movements that stimulate mass organization of individuals (i.e., Benford, Ewick, Goffman, Leonard, McAdams, McCarthy, Johnston, Polletta, Zald). It is within this individualist and interrelated context of social movements that this paper critically examines the messaging of sustainability and the ability of existing messaging to create community, foster individual action, frame ideas for multiple audiences, galvanize collective action, reach new audiences, and share a common narrative with recruits so recruits have an identity as a movement participant.

Aiming to bridge gaps at the interface of marketing and communication research regarding messaging, organizational leadership, and sociology-dominated studies of collective action and social movements, this paper closely analyzes sustainability initiatives, movements, and organizations. Findings suggest that necessary dynamic visionary principles are missing. Mass organizing of individuals to alter resource consumption habits will require clarifying basic premises, creating shared visionary principles, moving away from operational-level planning as a starting endeavor, and re-framing sustainability rhetoric.

## **Transformation or Status Quo: Competing Visions of Smart Grid**

*Jennie C. Stephens, Tarla R. Peterson, Elizabeth J. Wilson*

The term “Smart Grid” is increasingly being used in discussions of electricity production, distribution and consumption, but this phrase has very different meanings to different key actors. Analysis of different visions and articulations of the term “Smart Grid” in a comparative regional study across three electricity transmission regions within North America (Texas, the mid-west, and the northeast) reveals a diversity of stakeholder perspectives on whether, how, and why society should support a transition to a “Smart Grid” system. This presentation will draw on results from media analysis, policy analysis and focus groups of various electricity system stakeholders to map out a diversity of perceptions of “Smart Grid” and explore whether, where and by whom radical versus incremental change is envisioned. Understanding the complexity of perspectives on the notion of “Smart Grid” among different actors in different regions could facilitate movement toward a more unified and focused vision of change in electricity consumption, production and distribution.

## **Consumer as Critical Player in the Transition towards Sustainable Lifestyles**

*Peter C. Thirkell*

This paper reports upon a major consumer study assessing consumer responses to a set of four lifestyle scenarios developed and refined as a part of the SPREAD2050 project (13). The research also explores consumer perspectives on high usage carbon and materials consumption categories, ultra-durable product categories (eg appliances with a 30 year minimum life), and a series of indicators reflecting the ten core principles of One Planet Living (14). The survey methodology is based upon an Internet-based study utilising a large national sample drawn from the New Zealand electoral role. In addition to the main areas of enquiry identified above, the study assesses consumer attitudes and behaviours; macro-level trade-off scenarios (eg what choices will consumers make if carbon and/or material goods are rationed); receptiveness to consumer-business sustainability partnerships (including sustainable investment options); the options and scope for consumer 'voice;' and states of consumer readiness for systemic change leading towards a more sustainable marketing system.

## **Reducing Extremes and Intensifying Collaboration**

*Victoria W. Thoresen*

We recognize that poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production, and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development.” (The Future We Want; 2012)

In the search for new paradigms and systems which can contribute to sustainable development, focus has turned to the modification of individual consumption patterns as a significant key to happiness and improved life quality. Lifestyle adjustments are even considered by some to contribute to the equalization of disparities between groups and countries.

Yet, history provides us with examples of societies which have regulated individual consumption in order to ensure specific distribution of resources without necessarily achieving universal equity or collective well-being. Nor have existing social systems based on competitive economic growth models managed to eradicate extremes of poverty and wealth or ensure improved life quality for all.

Rachel Botsman and Roo Rogers (2010) have called for a paradigm shift towards increased collaborative consumption. Jeremy Rifkin (2009) claims that empathy is having increasingly more influence on personal and collective decision-making. Can these two approaches combined lead to more than just traditional communal caring and sharing? Can a broader sense of compassion and more systematic collaborative consumption lead to new paradigms of cooperation and equity? Can intellectual rigor and creativity continue to contribute to technological and social advancements without the driving forces of war and commercial competition? What is necessary to reduce greed and stimulate a sense of global solidarity?

This paper explores these questions by examining the value base as well as the sociological factors and systemic transformations which may lead to the reduction of extremes of wealth and poverty and intensify collaboration. By examining how voluntary lifestyle changes together with regulatory measures can stimulate unity in diversity and promote a culture of excellence, this paper seeks to reflect on how individuals can come to identify themselves as members of the family of humankind rather than singular, competitive entities.

## **Critical Gaps in Addressing Sustainable Consumption in Research and Practice: A Systems Perspective**

*Vanessa Timmer, William E. Rees, Emmanuel Prinnet, & Dagmar Timmer*

There is a growing concern among practitioner and academic communities that the concept of sustainable consumption is an under-researched field, and that action on this front is slow, particularly in North America, where the consumer culture is well entrenched. This paper addresses the following research question: Is there evidence that a practitioner and researcher gap exists in the area of sustainable consumption? In order to analyze this, we adopt a larger-system view and explore frameworks of the sustainable consumption and production system. Devising interventions that can effectively address the systemic complexity of sustainable consumption requires an understanding of the scope of the overall production and consumption system—including investment, marketing and distribution, and needs and values—that needs to be transformed, as well as the actors operating within it.

The investigation and analysis is undertaken primarily through a literature review, reviewing sustainable consumption and production research such as *Sustainable Consumption and Production: A Framework for Action* (Tukker, 2008) and *Enabling Sustainable Production-Consumption Systems* (Lebel and Lorek, 2008), and other relevant frameworks that conceptualize the production and consumption system. We then conduct an analysis across the frameworks to investigate the commonly identified leverage points. “Mapping” exercises of actors operating on production and consumption have been undertaken by several authors, including Barber and Luskin (2011; 2012) and the present authors, and a review of existing literature in this field and semi-structured interviews enable us to identify potential missing communities of actors, particularly around sustainable consumption.

This paper contributes to the body of knowledge and literature on sustainable consumption by undertaking a review of existing SCP frameworks, by categorizing leverage points throughout the consumption-production system, and by identifying missing communities of practice at the North American scale around sustainable consumption in particular. It contributes to the development of the SCORAI research community and the Global Research Forum on Sustainable Production and Consumption, and supports systemic change initiatives by informing research and practice in this area.

## **Connecting Automobility and Socio-Technical Transition Research**

*Petter K. Törnberg*

Parallel to the increased interest in sociological automobility research of the last decade, triggered mainly by Urry's introduction of a systemic approach (Urry 2004), research in the wider field of socio-technical transitions have shown similar development. Systemic theoretical frameworks, here represented by the Multi-Level Perspective (e.g. Geels 2002), have been used to understand the dynamics of socio-technical systems and phenomena such as lock-ins. Despite the obvious connection between automobility and socio-technical transition research, few explicit references have been made in the literature, leading to problems such as terminological inconsistencies and a lack of cross-pollination. This article aims to open up the discussion of how to integrate these areas of research, focusing especially on what existing automobility research can contribute to the more general theories. It is suggested that the relation between automobility and the rise of Fordism and modern consumerism, as described by Patersson (2008), poses a problem for MLP, as it represents a direct connection between a socio-technical regime and the landscape level. Based on this, and on the strong focus on similar relations in the automobility research, it is argued that a widening of the concept of regime interconnections and co-evolution to also include connections to ideological factors could improve our understanding of socio-technical regime stability.

## **Affordable Needs: The Dynamics of Novelties, Needs and Rights**

*Harro van Lente*

Typically, when an innovation is successful, the argument is that there must have been a need for this, albeit 'latent'. Yet, empirical studies show that when technologies are promised, developed and used, many things change in the same movement. Novelties may transform into needs and, eventually, into rights, when new needs have become self-evident. The malleability of needs and rights raises the intriguing question how novelty and needs are co-produced and whether such changes can be anticipated. When needs are not pre-given, but dependent upon socio-technical configurations, and, in fact, both cause and effect of technological change, a range of philosophical, sociological and anticipatory questions come to the fore.

In this paper I will address the central question by following three steps. First, the various uses of the concept of 'need' in technical change are studied and categorized. Here I explore various strands of innovation literature as well as technological and cultural criticism. A recurrent theme is whether and how what is conceived of as needs depends on the historical period and the locality. Central here is the institutional definition of needs by experts or markets. I conclude with a definition of needs which centers around a sense of loss: needs can be defined as items that incite efforts of repair in case the item is lacking. This sense of loss may be institutionalized by granting the item the status of 'right', as when access to Internet is proclaimed as human right.

In the second step of the paper, three case studies of the co-evolution of needs and novelty are compared and contrasted: water supply around 1800, the Kodak compact camera around 1900, Internet around 2000. This allows a partial reconstruction of a co-evolutionary process of technical, social and moral change and provides new suggestions how to anticipate emerging needs in society.

The third step of the paper is to investigate when needs and rights can be said to be affordable. Anticipation on new technologies cannot assume needs and rights to be pre-given. Hence, claims of users and citizens about their needs and rights of new technologies, thus, are not self-evident and a false (but popular) yardstick for various forms of Technology Assessment. The paper, therefore, ends with a design of alternative practices of reflection and anticipation, inspired by the research tradition of the 'learning organization'.

## **The Business Case for Sustainable Consumption: Lessons from the PerkinElmer Instrument End-of-Life Management Study**

*Vesela R. Veleva & Jonathan Lese*

It is becoming increasingly clear that no technological innovation can help solve today's environmental problems without significantly reducing consumption. Business has a major role to play in such societal transformation both through adopting more sustainable consumption practices and educating its customers to use less "stuff".

Despite a few innovative models such as collaborative consumption and dematerialization, for most companies there is no business case presently for "selling less stuff." Regardless, a small but growing number of companies are beginning to realize that doing business must change drastically in a world with depleted resources and a population of over 7 billion people. Business groups such as the World Business Council for Sustainable Development and the Business for Social Responsibility have called for action and launched frameworks for promoting sustainable consumption.

This session will examine the emerging business drivers and practices in advancing sustainable consumption in the U.S. The main focus will be on product end-of-life management (EoL) as one of the business approaches for sustainable consumption (the other two are product design and product use). The presenters will examine the case of PerkinElmer, a global biotechnology company with sales of \$1.9 billion in 2011 and operations in more than 150 countries.

Product reuse, remanufacturing or recycling can have significant bottom line benefits for business. Studies have demonstrated that the average profit margin for product reconstruction activities is 20%, compared to typical profit margins of 3-8% in the manufacturing industry. Remanufacturing is also labor-intensive and can help create well paid jobs.

As required by the EU Waste Electrical and Electronic Equipment Directive of 2002, PerkinElmer is taking back its used medical equipment in Europe. No such broad based Federal initiative is currently in place in the U.S. The study sought to examine whether there is a profitable or at least a profit neutral business model in adopting company-wide take-back policies in the U.S. The session will present results from a survey of PerkinElmer's North American sales force and a series of interviews with company representatives. It will conclude with a discussion of the current drivers, barriers and opportunities for EoL management in the U.S. as way to reducing resource consumption.

## **From “Freedom of the Open Road” to “Safe in the City”: Understanding the Enduring Appeal of Personal Private Automobility**

*Peter E. Wells & Paul Nieuwenhuis*

Anecdotally there is emergent evidence that several key developed countries may have reached the point of automotive saturation, as both economic and social factors begin to undermine the attractiveness of personal car ownership and use. This paper takes the perspective of cultures of automobility in historical context to understand both the scope for and limits to the reduction of automobility. Explicitly, the paper documents the historical development of automobility cultures in the USA and the UK from 1900 onwards in which the cultural status of the car has undergone significant changes from the physical manifestation of the aspirations of consumerist modernism embodying the ideological philosophy of personal freedom, through to being a necessary commodity of everyday life in which the distinctions of status are prominent (Nelissen and Meijers, 2011).

Given the (slight but potentially significant) increasing alienation of younger elements of the population from traditional cultures of automobility, and the increasing inability of older elements of the population to participate due to physiological or economic reasons (Engels and Liu 2011), there would appear to be substantive grounds to expect automobility to have peaked. However, we argue that such optimism may be misplaced because of both narrowly functional reasons (e.g. the relative cost of car ownership and use versus public transport) and, more importantly for this paper, the shift in automobility culture from freedom to security. This shift is part of a wider societal transition to a more militarised, securitised state in which surveillance and vigilance have become the norm. Allied with urbanisation and the growing spatial manifestation of wealth disparities in many major developed countries, the consequence of this shift in automobility cultures is a new emphasis on the car as a protective capsule with which to traverse the overt and hidden dangers of the city. There is some evidence that the introduction of electric vehicles may act to exacerbate prevailing inequalities (Cass et al., 2005; Wells, forthcoming).

It is concluded that further de-automobilisation is likely to be contingent upon wider shifts in social cohesion as much as the economic calculus or technological possibilities of the alternatives to the car. However, it is also argued that we need a more profound understanding of the ways in which new automobility cultures may emerge to challenge the hegemony of ownership.

# **Spontaneous Emergence versus Technology Management in Sustainable Mobility Transitions: Electric Bicycles in China**

*Peter E. Wells & Xiao Lin*

Generally, those working with sustainable production and consumption frameworks or theories of sustainable transitions do so with a distinct policy orientation in which forms of governance intervention are anticipated to be fundamental to a successful migration away from currently unsustainable practices. The underlying assumption is that purposive policy interventions are necessary in order to stimulate and nurture new production-consumption modes, resulting in a concern for fiscal and other incentives, learning from socio-technical experimentation, consensus building, R&D support, infrastructure development and other features.

Such concerns are strongly evident with respect to mobility, perhaps all the more so because of the perceived economic significance of emergent automobility technologies. Despite a plethora of interventions, support and experimentation it is reasonable to conclude that the prevailing automobility paradigm remains virtually intact.

However, it is striking that in China the electric bicycle sector has grown very strongly from almost nothing to being a substantial sector in less than 10 years. China is both the largest producer and largest market for electric bicycles in the world. Yet this sector has received none of the attention, protection and support given to ‘new energy vehicles’ in China; and in some cities the authorities have actively sought to discourage the use of (electric) bicycles.

This paper therefore seeks to address the urgent need to understand how and why the electric bicycle sector has emerged in China, and the prospects for learning from the sector for applications in other countries around the world. Drawing on secondary data and interviews with electric bicycle users and producers, this paper seeks to chart the development of the electric bicycle sector in a policy vacuum. The paper integrates the multi-level perspective from Geels (2002; 2005), Kemp and others with theoretical perspectives on cultures of mobility (deriving from Urry 2004; 2007) in order to use transitions theory to explain the process of change outside of the traditional reference context of technology policy and management.

It is concluded that the balance of product advantages and disadvantages has provided an historical moment in which electric bicycles have flourished despite neglect from traditional policy interventions, but it is rather less certain that they are understood culturally as an environmental alternative to the car.

## **Kaleidoscopes of Weltanschauung: Alternative Visions of Sustainability among non-Western Cultures**

*Evan Young*

Debates on sustainability in the Global North often rest on assumptions and values, typically associated with “Western Civilization”, which led to the current crisis in the first place. This singular perspective overlooks the outpouring of excellent scholarship in the past several decades on sustainability perspectives from non-Western cultures. Indigenous writers, eco-feminists, and many others have written insightfully on the topic and if Westerners want to thrive on this planet, it behooves them and listen. What does a sustainable culture look like? Leading environmentalists, often embedded in their worldview, seem to find difficulty in articulating a vision of this goal. One source they could turn to is the many examples of non-Western cultures that existed for millennia without posing a large scale threat to life on this planet. While not for a moment arguing that any one way of life is superior to another or the existence of some kind of “noble savage” archetype, it is worthwhile to ask “are there different assumptions underlying these cultures that might lead us to more sustainable visions of the world?” To provide answers this paper will select writings from and on indigenous cultures that most clearly show the contrast with common Western narratives. Although it is important to acknowledge positionality, contrasting a few key common assumptions made in Western culture with intriguingly alternative assumptions made in other groups may provide readers with insight in their own attempts to envision sustainability. This paper will touch on the following the commonly made assumptions in Western culture: that time is mostly usefully viewed as a continuous linear progression of events and that an anthropocentric view of the world is the most accurate. Contrasted with this are assumptions made by other cultures (as elucidated by scholars such as Gregory Cajete, Wade Davis, and Leroy Little Bear): that time can be viewed circular and that the world can be best understood by placing humans as equals instead of at the top. While alternative cultural assumptions do not necessarily lead to more sustainable ways of life, continuing with the same basic value assumptions is unsustainable. This paper will add to a growing body of scholarship that seeks to envision alternative ways for humans to live and thrive on Earth without harming the chances of our heirs. It will also help correct the low profile of non-Western perspectives on sustainability.