



CONSUMPTION AND PUBLIC LIFE



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Consumption, Sustainability and Everyday Life

Edited by
Arve Hansen · Kenneth Bo Nielsen

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Consumption and Public Life

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Arve Hansen • Kenneth Bo Nielsen
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Essays in honour of Hal Wilhite

Preface: Remembering Hal Wilhite

Despite appearances to the contrary, all academic researchers are human beings whose life experience shapes their choices of disciplines, research areas and commitments to particular styles of inquiry. Though the connections may be indirect and as complex as human life itself, these inclinations to particular topics and goals inevitably become recursive; they return back to important themes or events in the researcher's life, even though the circle may be large and the route indirect and convoluted. Despite a researcher's plans and conscious direction, key events and experiences have a way of surfacing in ways they may not recognise and may only appear in hindsight.

This is a good reason to take a broader look at the life of a particular social scientist, especially those who make important contributions to their field and have a strong influence on the work of others. It helps us to understand the full context of a research life, the steps that preceded the mature publications and teaching which are widely recognised. This is particularly important for students and early career scholars who might be uncertain of their path, who are having trouble choosing a research or dissertation topic, who feel they may be working on the wrong project or are feeling stuck on an uncomfortable disciplinary path. The truth is that many highly successful people who are known for their contributions in a field or subfield may have started out doing something else entirely. The world is rapidly changing, new problems and issues

constantly arise, so the research landscape is constantly branching out in new and often overlapping or crisscrossed directions. Early stage scholars need to know that confusion and anxiety about direction are perfectly normal and often advantageous, since they can bring important techniques and theory from one field to another. They also need to see that accidents and coincidences are often key in research and that a risky jump to an unexpected opportunity may be crucial in shaping their career.

This lengthy prologue explains why this chapter is not a scholarly analysis of Harold (Hal) Wilhite's research, teaching or scholarly work. Instead I am tracking his career before he moved to Norway and explaining how he began research on household energy use, efficiency and sustainability, based on my personal recollections and reflection. I will also discuss Hal's early career in archaeology, which I was privileged to share.

I first met Hal in 1980 when I was working as a graduate student on an archaeological project at the ancient site of Cuello, located around a modern rum distillery in northern Belize near the town of Orange Walk. I had been working with Norman Hammond, the project director, as a volunteer starting in 1973 when I was still an undergraduate. We had surveyed and excavated at a number of sites in the northern two districts of the country each year. In 1978, while in graduate school at the University of Arizona, I switched from archaeology to cultural anthropology and started planning for field research with indigenous people in southern Belize, but I still had to finish a project I had started, to conduct a series of excavations at Cuello which I had previously planned as a dissertation project. Cuello was a unique and important site because at that time it had the earliest evidence for settled ancestral Mayan communities in Central America.

In the summer of 1979 I visited several prospective research sites in the southern Toledo district in southern Belize and moved to a village in December to start my ethnographic research. Then, in mid-January 1980, I went back north to Cuello to start excavations. Hammond had promised me two graduate students to work on the project and keep it going whilst I went back south at several intervals. They were Hal Wilhite and Linda Reynolds,¹ brought to Belize by their archaeology professor at San Francisco State University (SFSU), Karen Bruhns, a friend of

Hammond who was unable to return to her own excavations in El Salvador because of the civil war there.

I quickly learned that Hal had a Master's degree in Mathematics from the University of California, Berkeley, which he completed in 1974. This was a tumultuous time to be living in Berkeley, one of the centres of radical politics and antiwar resistance, and Hal said this was the time when he was "radicalized." After finishing his degree, Hal taught mathematics at The United States Military Academy from 1974 to 1978, when he returned to the Bay Area. To support himself he started teaching math at the University of San Francisco as a lecturer, but then decided to pursue his growing interest in archaeology at nearby San Francisco State University, enrolling in their small anthropology MA programme, while thinking about pursuing a PhD. Since fieldwork is an essential part of training in archaeology, Hal followed his professor to Belize.

At Cuello I asked Hal to help set up a plan for random sampling of the small "house mounds" which dotted the pastures and low brush around the site. The mounds were the remains of the small earth, stone and plaster platforms upon which ancient people had constructed their perishable houses, leaving behind a scattering of their domestic trash and sometimes the remains of their dead, buried under the floors. Thanks to Hal's facility with math, we quickly set up a stratified random sample system based on the shape and size of the mounds using the grid used for the site survey.

First with my help and then on their own, Hal and Linda carefully excavated trenches in 70 different house mounds and did smaller tests and surface collections in the areas in between mounds in 6 weeks, a Herculean task. My most vivid memory is of Hal coming back to the camp at the end of a long day of digging, covered with dirt and dust from head to toe, carrying heavy equipment, large bags of pottery and artefacts, with a big smile on his face, ready to sit down to discuss the day's finds while everyone else was relaxing, showering or drinking. Most of the excavations were small and uncomplicated, but several included complex stratigraphy and architecture, dense deposits of pottery and stone tools and partial human burials. They had to keep meticulous records, take photographs and drawn plans and sections of their excavations and meet regularly to discuss the dating of their finds with other project staff.

I still have my field notebook (and Hal and Linda's) from 1980, which includes a work plan for six days a week from 6 am to 4 pm, the sampling design, a list of equipment and recording techniques and on the bottom of the first page the note "keep cows out of pits." (Most of our excavations were in a pasture.) Unfortunately, because the work was partially supported by the National Geographic Society, we had to turn over all our photographs from that season, so I have none of the many photos we took of the excavations and people.

During that field season Hal and I talked a lot about my decision to leave archaeology because I wanted to do something more relevant to the problems of development and poverty that I saw everywhere in Belize. I know that Hal had begun to see that archaeology was a very blurry lens onto the past, that the steps of interpretation from broken bits of pottery to the rise and fall of civilisations were indirect, difficult and subject to bias. It was clear to me that Hal was also seeking a career that was relevant to human social problems and he was not the slightest bit afraid of a serious intellectual challenge.

Hal and Linda went back to San Francisco in March 1980 to continue working on their degrees at San Francisco State, while Hal also continued lecturing in math at SFU. Later that year Hal returned to Belize to work on another archaeological project. Later, Hal told me that this field season ended his interest in pursuing archaeology as a career. He was disappointed with the way the project director mistreated his students and workers and found that he adjusted his facts to fit his theories rather than vice versa. At Cuello we had already talked quite a bit about my decision to leave archaeology, prompted by the influence of the old boy network and the elitism in archaeology, as well as widespread disregard for local people and culture, the abuse of students and sexual harassment of women, particularly in fieldwork teams. The prevailing ethos of archaeology at the time was "what happens in the field stays in the field." Questioning the ethics of field archaeology became a theme in my own research and writing, prompted partially by these conversations with Hal.

When Hal returned to finish his MA degree at SFSU, he dropped archaeology entirely and instead studied the politics of development and underdevelopment in Latin America, with a particular focus on the US intervention in Nicaragua following the overthrow of Somoza in 1979 and

the Sandinista revolution. His MA thesis was entitled “Post-revolutionary and Transnational Corporations: An Attempt at a New Relationship and its Implications.” This included a detailed discussion of the unhappy history of the Standard Fruit Company and its interference in the politics and economics of Central American countries, including Belize.²

It is remarkable how quickly Hal moved away from archaeology and mastered a very different kind of research, which included original documents and media reports in Spanish, and facility with the theories of dependency and development then current in economics and Latin American studies. He later showed this quick adaptability to new languages, theories and cultural contexts when he migrated to Norway and quickly learned the language, when he conducted research in Japan and then his PhD research in South India. He showed a similar facility for quick learning and mastery of new theory in our ethnographic collaborations in northern California, which I turn to next.

While Hal was working on his thesis, I finished my PhD at the University of Arizona and started on a fruitless search for an academic job. Finally, at the end of the summer of 1981, an archaeologist friend who had a job at the University of California at Santa Cruz (UCSC) told me he was leaving the position, and he recommended me as a quick fill-in. Although it was only a one-year visiting lectureship teaching archaeology classes, I was desperate and jumped at the chance to start teaching.

Santa Cruz was also close enough to San Francisco for me to work with Hal on the analysis and write up of our excavations at Cuello. This proved to be an ideal partnership, since we both thought the theme of inequality had been completely ignored by archaeologists working in the Maya area. We paid particular attention to the possibility that the house mounds were only the dwellings of the more prosperous portion of the town's population, while poor people and perhaps slaves lived in small perishable houses which left few traces. We tried to develop a predictive model based on our excavations in the “off mound” areas which would allow us to estimate the size of the poor population. This was a relatively simple task for someone who had taught calculus at West Point. The result of our collaboration was eventually published as a chapter in the final excavation report in 1991.³ And it remains one of the most innovative studies of ancient Mayan settlement patterns, one of the very few to go beyond

simply excavating house mounds. Perhaps because it was so innovative, but also because Hal and I were relative unknowns in the insular world of Mayan archaeology, it has very rarely been cited or even acknowledged.

Towards the end of my first year at Santa Cruz (1981–1982), still with temporary visitor status, I was starting to think about how I could apply my research skills and anthropological training to pressing issues in California (in the hope of finding a permanent job at UCSC). In Belize I had experienced the second “energy crisis,” the result of the Iranian revolution, and for several months the gasoline supply was so short that we were limited to 2 gallons a week. Anthropology and ecology had developed studies of energy flows in different kinds of human and natural system, but at the time this had not been extended to understanding capitalist and market economies and consumer cultures. While teaching my Cultural Ecology classes at UCSC I started to think about how to apply these tools to understanding local responses to energy shortage. Furthermore, issues of energy supply and consumption looked like a long-term issue that was not going away given the massive increases in energy use taking place in much of the developing world (most of rural Belize was still not electrified at the time). This also seemed like a good way to connect the fine-grained local analysis of ethnography with the kinds of world and global systems studies then being pioneered by historians like Wallerstein and Gunder Frank.

Two UCSC students from my class brought me a grant notice from something called the “Universitywide Energy Research Group” (UERG) which had just gotten underway at UC Berkeley with the charge of engaging multidisciplinary research on energy at all the University of California campuses.⁴ This infusion of funding came from the California state legislature’s mandate that Pacific Gas & Electric, the dominant electric utility in the state, devote a portion of its revenues to research on energy conservation, and UERG was delegated to fund grant research through the University of California system. The grant solicitation was open and relatively brief, and my students encouraged me to apply, so I would be able to remain at UCSC the following year.

My major obstacle in applying for the grant funding was my teaching duties at UC Santa Cruz—I was responsible for two courses in each of the three 10-week quarters, and my lecturer status did not allow for time off to pursue research or access to university research services and

support. I could not do the project on my own, even if I got a grant. The first person I called when I saw the request for proposals was Hal. I knew he was looking for other work, and this seemed like an ideal partnership since he would be able to commute from San Francisco to conduct interviews in Santa Cruz and the surrounding area. I sent him the first draft of my proposal for an ethnographic study of 60 households, to better understand how they made decisions about energy use, including the use of appliances, home heating and retrofits like weatherstripping, solar hot water and passive solar heating. Within a few weeks we had a positive notice on the application, so I was able to put Hal on the university payroll, and towards the end of 1982 we began doing the research.

The initial goals of the research were outlined in documents we wrote together as part of the grant proposal. We wanted to ask a series of questions about household decision-making (a key focus in my dissertation research) including: How does the family manage its money, and how are decisions made to allocate funds to home improvement? Why are some families “home centred,” spending most of their free time at home, while others are more outward-oriented, and how does this affect home-improvement strategies? More broadly, we wanted to know how the concepts of *home*, *waste* and *comfort* informed decisions about energy use.

The first part of the project was the most difficult: finding a valid sampling frame and locating matched samples of 30 households with the same income level and size, which had either installed in energy-saving retrofit or had not. We were hoping to see if there were household characteristics or other variables that might explain why some households were opting for solar hot water, energy-saving insulation and weatherstripping, or more efficient appliances. We designed a telephone script and, along with an undergraduate assistant, made hundreds of phone calls a day with very poor results. After a week we had only found about a dozen families who had installed some kind of energy-saving device or retrofit and who agreed to be interviewed. Giving up on the random sample, we decided that the most important thing was to get a matched sample of the two categories of households, so we could compare them with each other.⁵ Once we started the interviews, we use these as the core of snowball samples, asking each of our responding households to recommend three or four friends or relatives we could contact. The actual interviews began in February 1983.

Hal and I decided that we would do the interviews together as a team, and we developed a protocol in which one of us would ask questions and maintain eye contact with the interviewees, whilst the other kept track of questions, handled the tape recorder and kept an eye on the clock. Our goal was to set up three interviews with each household, separate sessions of one hour with each member of an adult couple and a third interview with them together. (Only later did we realise that children also played a role and should have been included.) In the end we only finished that protocol with ten households because it turned out to be impractically time-consuming and difficult to schedule. Nevertheless these ten gave us a lot of insight into how decisions were being made (or not made) in households, and we uncovered a lot of disagreements between spouses on temperature levels, convenience and appliances. There were also extended discussions of the balance between spending and saving, and how different people thought about energy and utilities. These pilot interviews proved extremely useful in interpreting the rest of the interviews, which were conducted in one-hour sessions with couples.

When we finished the first round of interviews, UERG invited us to a meeting of all the researchers who had been funded in the first round of grants, where we had a chance to meet sociologists Bruce Hackett and Lauren Lutzenhiser, economist Lee Schipper and others who were truly interested in our novel approach. We presented a short summary of our interview findings which was later issued as a working paper by UERG (Wilk & Wilhite 1983). The staff of UERG were enthusiastic about our initial results and encouraged us to apply for a grant extension the following year. They also told us about another grant we could apply for, funded by an appropriate technology programme at UC Berkeley. Through this, we later applied for and received funding for a pilot study of households with woodstoves or solar hot water, to understand why so few households were taking advantage of subsidy programmes promoting alternative energy sources.

Through UERG we were also invited to present our results at a conference in October 1983 at Michigan State University called "Families and Energy: Coping with Uncertainty." The conference proceedings were our first publication, an expanded version of our working paper (Wilk & Wilhite 1984), and gave us wider exposure to other social scientists working on energy issues including another anthropologist, Willett Kempton,

at the University of Delaware. We were particularly impressed by his ethnographic approach to understanding how people actually used and thought about thermostats, which aligned with our own findings in Santa Cruz. We came away from the meeting enthusiastic about including anthropology in the mix of different disciplines concerned with energy consumption. We both felt like a fossil-fuelled economy did not have a long future, though at that point climate change had not become an issue. Hal really took the lead in thinking about the wider issues of energy consumption and conservation, and how they related to global issues of development and underdevelopment. This in turn foreshadowed my own research turn towards sustainable development and consumer culture.

By the spring of 1983 we had done enough research to start to think about ways we could expand it and better understand people's decision-making and choices. First, we thought about expanding this study to include more diverse communities, including Watsonville to the southeast which had a large Hispanic population originally involved in farm work. The state of California had a programme offering free weatherstripping and energy audits in Watsonville, but the response rate had been extremely low, and we were asked to find out why. We applied to UERG for funds for this project in early 1983 and quickly had a positive response.

With three simultaneous grant-funded projects, we clearly needed help, so in late 1983 we hired two anthropology graduate students from nearby universities to conduct interviews in Spanish in Watsonville (at the time UCSC had no graduate anthropology programme). We used the same interview protocols from our Santa Cruz work but included a series of questions about landlord-tenant relations (since most people were renting) and attitudes towards government programmes.

About that time, we started to see results from our project on woodstoves; the initial interviews showed a strong gender difference in attitudes towards woodstoves; while couples agreed on the importance of reducing their electrical energy use and home heating costs, men ended up doing almost all the work of chopping and hauling wood into the house and taking out the ashes, while expecting women to take on the new tasks in cleaning up after "their" mess. This new division of labour was not an easy adjustment by any means, and only about half of our sample households used their woodstove regularly as their main source of

home heating. This raised a series of questions about who used the different appliances in the average home. For example, when we asked couples who did the cooking it was usually women who said they use the kitchen appliances. But Hal noticed on several visits for interviews that men were warming up dinner in the oven or microwave and making hot drinks and often simple dishes on the stovetop. When asked, men explained that they were not cooking anything, they were just “warming things up.” Wanting to know who actually used the appliances, but in a pre-digital technology era, we developed a simple paper form with a checklist on every appliance and asked household members to check off their name at each use. We found that men indeed were using kitchen appliances, vacuum cleaners, dishwashers and laundry washers and dryers much more often than we (or they) expected (Wilhite and Wilk 1987).

About this time our living situation changed. Hal was a dedicated bicyclist, and he was frustrated about having to drive to Santa Cruz every day. In the summer of 1983 we moved into a house in Capitola, next door to Santa Cruz. This allowed Hal to bike to work every day (though it was mostly uphill) and to get around the county for interviews.

Unfortunately, my job at UCSC began to look very tenuous in the fall of 1983, when the anthropology department did not offer me any classes for the winter and spring quarters. As a very traditional anthropology department, they were not interested in applied work and had no research positions I could use for soft funding. I taught a course on appropriate technology for the environmental studies programme in the winter quarter, but after that I had few options for continuing at UCSC. We wrote several large grant proposals in the hope of expanding our project, but the traditional funding sources for anthropology were not very interested in the kind of applied work we were doing—they were still focused on “pre-modern” peoples in foreign countries and the traditional subjects of the discipline. And lacking secure positions, working space or other facilities at UCSC, our proposals must have seemed weak.

As I went back on the academic job market in November 1983, I was looking at unemployment. While it had proven easy to get research funding, we had no support for the time it would take to analyse and write up our results. Hal’s contract financed by UERG only ran to the end of May in 1984, and we found ourselves quickly trying to wrap up our interviews

and start writing. We ran into a roadblock with the study in Watsonville when the researcher we had hired to manage the project refused to turn over the interview transcripts or her expense accounts, stopped answering her phone, dropped out of her graduate programme and disappeared with our data. We were never able to track her down again, and we could not actually verify that she had done the bulk of the research.

As the last project together, we did a survey at the beginning of 1984 under a contract with the Response Analysis Corporation, sponsored by the US Department of Energy. They wanted us to use our interview methodology to visit four households in the San Francisco Bay area which had far above average or far below average consumption of electricity or natural gas. Our findings were to be used in developing a survey instrument for use by the Department of Energy. Even though it was very brief, the project gave us a lot of insight into the way that energy behaviour was connected with class and income, the ethics of frugality and generosity and intimate details of family life such as divorce and separation, immigration status and medical problems.

It is important to remember that we did this research before the personal computer era, so we had to transcribe tapes using the UNIX-powered minicomputer at the University, and we had no easily transportable method for storing or sharing our files. While we were able to publish some of our initial results, we did not have time to transcribe and then analyse all our interviews. All the interviews were recorded on cassette tapes, which proved highly perishable, and over the course of several international and more local moves, we lost the original tapes and the transcripts of our interviews. We had no chance to work together over the next ten years, as I moved to Belize to take a job working for the United States Agency for International Development (USAID) on a series of infrastructure, health and agriculture projects, and Hal migrated to Norway, where he developed our research much further, earned his PhD in Anthropology and built a distinguished career in the anthropology of energy. The study of sustainable consumption was at that time completely centred in Europe, and governments were beginning to think about long-term energy transitions. It was many years before we were able to collaborate again, first through the European Council for an Energy Efficient Environment (ECEEE) conferences, and then with the summer school at Lancaster University which Hal created with Elizabeth Shove.

When Hal came up for promotion to full professor in Oslo, I wrote a supporting letter which included phrases like “the foremost anthropologist of energy consumption in the world,” “a pioneer of the concept of sustainable consumption” and “an inspiring leader.” I concluded that Hal was “an exceptional scholar who has spent much of his career at the forefront of important developments in his field. He has been an extraordinarily effective and convincing spokesman for anthropology in places where academic anthropologists are rarely seen or heard, and in doing so he has both advanced our field as a whole and had a dramatic influence on the way energy policy is made. He has unique visibility, knowledge and skills, and has made key research contributions.”

But to me he was much more than an academic leader and a visionary in thinking about building a more sustainable world. Hal taught me the value of collaborative research, of listening carefully to the people we work with—including the people we interview. Some of the best insights in our Santa Cruz research came from our interviews, from the process of talking with each other before and after and from open conversations with our interviewees after the formal interview. I grew to admire and tried to emulate his clear-eyed attitude towards research, particularly the way he managed to combine a practical realism with optimistic idealism. It is hard to maintain a positive attitude while watching the impending train wreck of expansive consumer culture and climate change, but Hal’s fundamental optimism rarely faltered. He truly believed in the power of research to affect policy, and that gave him the strength to face the contradictions of a rich world full of poor people. And that courage is exactly what he brought to his final and most difficult challenge, along with his intellectual and physical bravery and persistence, and his unforgettable smile. With his grace and clarity, he is an example to us all.

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Relevant Publications

- 1987 Harold Wilhite and Richard Wilk “A Method for Self-Recording Household Energy Use Behavior.” *Energy and Buildings*, 10(1):73-79.
- 1987 Wilk, Richard and Harold Wilhite Jr. “Why Don't People Weatherize their Homes? An Ethnographic Solution.” in *Energy Efficiency: Perspectives on Individual Energy Behavior*, W. Kempton and M. Neiman (eds.), American Council for an Energy Efficient Economy, Washington D.C. pp.51-68. (reprint)
- 1985 Wilk, Richard and Harold Wilhite Jr. “Why Don't People Weather-strip their Homes? An Ethnographic Solution.” *Energy*, 10(5):621-631.
- 1984 Wilk, Richard and Harold Wilhite Jr. “Household Energy Decision Making in Santa Cruz County, California.” in *Families and Energy: Coping with Uncertainty*. B. Morrison and W. Kempton (eds.), Michigan State Univ., College of Human Ecology. pp. 449-459.
- 1983 Wilk, Richard and Harold Wilhite Jr. “Household Energy Decision Making in Santa Cruz County, California.” Publication UER-105, Universitywide Energy Research Group, University of California, Berkeley.
- 1982 Harold L. Wilhite Jr. *Post-revolutionary and Transnational Corporations: An Attempt at a New Relationship and its Implications*. M.A. Dissertation, San Francisco State University. AS36 1982.W545x, (OCOLC)ocm09870245

Notes

1. Linda finished her MA and later went on to do her PhD in Anthropology from the University of Nevada in 1996. After an accomplished career with the Forest Service, she died in 2013.
2. The thesis was accepted in 1982, but his MA was not granted until 1983 according to his resume.
3. “The Community of Cuello: Patterns of Household and Settlement Change.” In *Cuello: A Preclassic Maya Community*, Norman Hammond (ed.), Cambridge University Press. Pp. 118–133. We also presented a

paper on our research in 1983 called “The Missing Maya” at the annual meeting of the American Anthropological Society.

4. Founded in 1978, UERG later became the Haas Energy Institute.
5. The matching criteria were income level and years of education.

Acknowledgements

The editors would first and foremost like to thank Hal Wilhite for his friendship and mentorship over many years. We had the pleasure of working with Hal at the University of Oslo's Centre for Development and the Environment since 2006 (Nielsen) and 2011 (Hansen) respectively. During this time, Hal was Hansen's PhD supervisor and a crucial inspiration for Hansen's work on the everyday practices of consumption, while he and Nielsen shared a passion for all things Indian. To both of us, he was a constant source of encouragement, support and inspiration—the kindest, warmest and sharpest academic we have had the pleasure of meeting. This book is for him.

Hal was a collaborative scholar, and most of the contributors to this volume have worked with Hal at some point in their career. We would like to thank the contributors who responded so enthusiastically to our initial invitation to write for us and who worked overtime to bring the project to a successful conclusion. Thanks also to the Centre for Development and the Environment for all support and for helping make the book available open access, and to Rick Wilk and Frank Trentmann, series editors of “Consumption and Public Life,” for welcoming the book into their series.

Two of the chapters are reprints. Chapter 6 first appeared in *Energy Research & Social Sciences* in 2020, while Chap. 8 in *Mobilities* in 2022 (both open access). In addition, parts of Chap. 2 draw on the chapter

“Consumer Socialism: Consumption, Development and the New Middle Classes in China and Vietnam” published in *The Socialist Market Economy in Asia: Development in China, Vietnam and Laos* (Palgrave Macmillan, 2020, edited by Arve Hansen, Jo Inge Bekkevold and Kristen Nordhaug) and are used with permission.

Praise for *Consumption, Sustainability and Everyday Life*

“In showing how concepts of consumption, sustainability and everyday life have combined and changed over time and in confronting fundamental questions of excess, growth and the ratcheting of demand, this is a book that looks to the future. Individually and in combination the chapters underscore the importance and relevance of social science and the power of careful research and scholarship. The result is a fitting tribute to Hal Wilhite, a pioneer in this field.”

—Elizabeth Shove, *Distinguished Professor of Sociology, Lancaster University, UK*

“Households and their everyday practices and consumption patterns are critical to shaping low-carbon futures. Yet the role of households in sustainability transitions remains poorly understood and often ignored by policy. This volume brings readers up to speed on the cutting edge frontiers of knowledge related to consumption and sustainability. In the process, the volume pays tribute to Hal Wilhite, a ground-breaking luminary in the field of consumption and energy research.”

—Benjamin K. Sovacool, *Professor of Energy Policy, University of Sussex, UK*

“A fitting tribute to a key figure who appreciated that the issues of everyday consumption and energy, as well as their impact upon sustainability, were only ever going to grow in importance year by year and which require today, more than ever, the quality of evidence, insights and attention which the papers in this book exemplify.”

—Daniel Miller, *Professor of Anthropology, University College London, UK*

“This book offers a rich collection of contributions to understand why we consume as we do, how consumption changes, and why we, in the privileged part of the world and in countries with growing economies, keep consuming more. Despite the fact that households cause most of the current environmental harm, the authors observe the paradox that policies for sustainable consumption are almost non-existing. A good place to begin addressing the problem is by reading this book.”

—Tanja Winther, *Professor of Development and Environment, University of Oslo, and Head of Include—Research centre for socially inclusive energy transition, Norway*

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Part I

Introduction



1

Consumption, Sustainability and Everyday Life

Arve Hansen and Kenneth Bo Nielsen

There has for decades been widespread agreement in policy, activist and scholarly circles that the consumption patterns of households play a central role in the world's sustainability challenges. The way people lead their lives and the goods and services that are incorporated in mundane practices—and in particular related to housing, mobility and food (Tukker et al., 2010)—can have dramatic environmental consequences. Estimates show that household consumption contributes to as much as 72 per cent of global green greenhouse gas emissions (Dubois et al., 2019), and that consumption accounts for up to 80 per cent of total resource use in affluent societies (Ivanova et al., 2016). Yet, despite growing levels of awareness about the magnitude and urgency of the situation, unsustainable

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consumption patterns have rarely been the target of concentrated efforts towards progressive change. Rather, in order to keep citizens content and to ensure the ‘wellbeing’ of businesses and national economies, consumption has generally been allowed to grow almost unchecked (Wilhite, 2016). Tellingly, while consumption was central to the sustainable consumption agenda from the very beginning, it has time and again been reduced to questions of greening production. One of the clearest examples of this is found in the Sustainable Development Goals (SDGs). While there is a separate goal on ‘ensuring sustainable consumption and production’ (SDG12), almost all the targets of this goal deal with production only (see Gasper et al., 2019 for discussion). The focus on consumption is limited to building awareness, a paradoxical situation given that decades of consumption research have convincingly shown this will never be sufficient to create the changes needed for genuine sustainability transformations (e.g. Shove, 2010). Similar trends are arguably found in policymaking around the world, where efforts towards making consumption patterns more sustainable are either non-existing or restricted to efforts towards making the individual consumer substitute selected goods for more environmentally friendly ones (Welch & Southerton, 2019).

Understanding why we consume as we do, how consumption changes, and why we keep consuming more is the focus of this book. The different chapters cover both the stubbornness of unsustainable consumption patterns in affluent societies and the drivers of rapidly increasing consumption in emerging economies. They zoom in on some of the consumption patterns with the largest environmental footprints, including energy, housing and mobility. And they engage in different ways with the theoretical and empirical frontiers of the by now large field of consumption research, and particularly with the ‘practice turn’ that has come to dominate the field in recent decades. Consumption studies is a multi-disciplinary field, and the contributors in this book come from diverse backgrounds including Human Geography, Sociology, Anthropology, Political Economy, Ecological Economics, Science and Technology Studies, Social and Policy Science, Urban Studies and Architecture. The chapters all deal with questions of sustainability, and many of them directly with how consumption patterns can be made more sustainable. Together, they bring the reader up to speed on what we know about

consumption and point us in the direction of the next steps for better understanding—and changing—unsustainable consumption patterns.

This introductory chapter starts by briefly reviewing the history and development of consumption research, thereby situating the contributions in this book within the broader field. We start broadly, before gradually zooming in on the ‘practice turn’ and on research engaging with consumption and sustainability. Following this, we outline the chapters of the book and conclude with some reflections on the possible future of consumption research, calling for a broader agenda for research on consumption and sustainability.

Consumption Studies

Consumption of different kinds is necessary for our survival and an intrinsic part of cultural expressions, national economies and everyday lives. Studying consumption thus means engaging with fundamental questions of human action and societal organisation. It is therefore no surprise that consumption has long attracted academic attention, although a discernible field of ‘consumption research’ is a more recent phenomenon. Of the classic texts, few match the impact of Thorstein Veblen’s *The Theory of the Leisure Class* (2005 [1899]). In this book, Veblen famously introduced the term ‘conspicuous consumption’ to explain the purchase and display of luxury goods among the new rich in the United States after the second industrial revolution. He argued that as inherited social positions were losing the monopoly on hierarchically structuring society, expensive material goods gained a particular social value in displaying ‘pecuniary strength’. In other words, goods were strategically used as visible evidence of wealth and status. Furthermore, and this is one of the most used references to Veblen’s work, he argued that the lower classes ‘emulated’ the consumption patterns of the upper classes in a variety of ways.

Among Veblen’s many insights from his study of the leisure class was that the social value of objects was different from their ‘rational’ and intrinsic use value. A similar argument was made by Georg Simmel in his classic study, *The Philosophy of Money* (1990 [1900]). Simmel argued that

things do not have absolute value, but are rather given value by subjects in historically and culturally conditioned ways. For both Veblen and Simmel, this value was used in social performance to achieve particular benefits. But both also recognised the importance of conformity in determining consumption patterns. Veblen wrote of a ‘conventional standard of decency’ as an important determinant of consumption. People do not only consume goods to distinguish themselves *from* others, but also to associate themselves *with* others in order to *not* stand out, to achieve group belonging or to keep up with societal expectations. This was a central point also in *Fashion* (Simmel, 1957[1904]), and remains a recurring theme in consumption research (e.g. van der Laan & Velthuis, 2016; Dwyer, 2009; Wilhite, 2008). Indeed, although a range of classic work has informed social-scientific understandings of consumption (see e.g. Campbell, 1995), Simmel and Veblen (particularly the latter) stand out almost as founding fathers (for discussion, see Sassatelli, 2007; Dwyer, 2009). This is arguably because of the ground-breaking way in which they approached consumption as a social phenomenon, and largely as an outcome of processes involving both competition and status-seeking, but also conformity and habituation. This fundamentally social nature of consumption has remained foundational also in later and highly influential studies (by the likes of Goffman, 1990 [1959]; Bourdieu, 1984; Appadurai, 1986) and remains perhaps the main insight and starting point that unites the broad field of social-scientific consumption research (see Slater, 1997), with the possible exclusion of economics.

With time, however, critical social and cultural theory would—unlike fields such as economics and marketing—come to pay less attention to consumption. In mainstream economics, in contrast, the idea of ‘the rational consumer’ would become fundamental to theory development and modelling. Instead of the fundamentally social consumer encountered in Veblen’s work, this is the asocial individualist (see Ackerman, 1997; McNeill, this volume). But although this rational consumer model remains intact, economic approaches to consumption have evolved, particularly due to behavioural economics and influential insights from psychology about the irrationality and habituation involved in much human behaviour (e.g. Kahneman, 2011). One of the strongest effects of the behavioural turn in economics is seen in the popularity of ‘nudging’ as a

policy tool—based on the insight that humans often behave in certain ways that can be changed, or nudged, in alternative directions through alterations to the so-called choice architecture in which actions take place (Thaler & Sunstein, 2008, 2021; McNeill this volume; see also Schubert, 2017; Goodwin, 2012 for examples of critical takes on nudging).

Consumption received renewed attention only in the 1970s and the 1980s as new forms of cultural studies started going beyond lump assumptions about ‘mass culture’ to understand the role consumption played in the formation of subcultures, often in direct opposition to mainstream society (Campbell, 1995). The symbolic meaning of goods was in turn central to culturalist approaches to postmodernism, as consumer society was posited as central to the post-modern ‘condition’ as understood within this ‘cultural turn’ (e.g. Jamieson, 1998). Much attention was given to signs, with Jean Baudrillard (1998 [1970]) as a prime example. In a sense, consumption was released, almost disconnected from concerns about practical use value. To Zygmunt Bauman, for example, consumption had become ‘autotelic’, valuable in its own right (interviewed in Rojek, 2004). In culturalist analyses of consumer society, identity formation and ‘lifestyles’ were central to understandings of consumption—a view of things that was put to eminently practical use in the field of marketing (Campbell, 1995).

In crucial ways, the cultural turn worked wonders for the field of consumption research, placing consumption at the very core of academic interest in many disciplines. This period also saw anthropologists gradually including modern consumer societies as a legitimate arena for study, with Mary Douglas and Baron Isherwood’s (1979) *The World of Goods* a pioneering work. By the 1990s, the study of consumption was central to the social sciences, and consumption studies was becoming a discernible field of its own, largely operating outside economics and marketing. Curiously, the year 1995 saw the publication of both Daniel Miller’s modern classic *Acknowledging Consumption* and a piece by Nick Gregson in the flagship Geography journal *Progress in Human Geography* titled ‘And now it’s all consumption?’. The two pieces are more in line than what the titles may at first glance suggest. Miller’s main rationale for the book was to acknowledge the ‘considerable and relatively sudden expansion of interest in the topic of consumption throughout the social

sciences’, something he saw as a ‘delayed acknowledgment of social and economic transformations at a global level that had previously suffered from extraordinary academic neglect’ (Miller, 1995: 1). Through chapters focusing on a wide range of disciplines, the book showed how the topic of consumption had both gained prominence and—according to Miller—challenged basic disciplinary premises across the board of social scientific research. Gregson’s piece comparably starts out with an observation about how especially British geography had become dominated by a focus on consumption. Gregson was not opposed to this turn, rather in favour of it. He was, however, critical of how the new focus on consumption came with ‘an interpretation of consumption grounded in meaning, identity, representation and ideology’ (Gregson, 1995: 139), representing a turn away from social theory and towards cultural theory. This by then dominant cultural theorisation of consumption would soon spark a new ‘turn’ in the field, this time towards social practices and everyday life.

Significant parts of the new field of consumption research have been driven by an interest in questions of environmental (un)sustainability and, in many cases, coupled with action-oriented ambitions of not only understanding, but changing, consumption (e.g. Princen et al., 2002; Jackson, 2005). The practice turn in many ways developed alongside, and strengthened, the focus on sustainability, and ‘sustainable consumption studies’ is by some now seen as a distinct subfield (see discussion in Evans, 2019). But just like the focus on consumption in general, social practice theory has deep roots that predate concerns for the environmental impacts of human behavioural patterns.

Consumed in Practice

In 2002, an article by Richard Wilk titled ‘Consumption, human needs, and environmental change’ was published in *Global Environmental Change*. Here, Wilk first summarised dominant understandings of consumption, grouped into three paradigms: individual choice theories, cultural theories and social theories. He proceeded to argue for theoretical pragmatism and pluralism, since the world’s environmental problems were too profound and urgent to wait for a grand unified theory to

emerge. What was needed, Wilk argued, was a heterodox ‘multigenic’ theory, ‘which accepts that there are multiple determinants of consumption, operating at different conceptual and analytical levels, from the individual, through the household, community, and ultimately to nations and larger groups’ (Wilk, 2002: 9). And, rather prophetically, he argued that Pierre Bourdieu’s ‘theory of practice’ would be a proper place to start. Few have matched the influence of Pierre Bourdieu on the study of consumption, with *Distinction: A social critique of the judgement of taste* being probably the most influential book ever published in the field. But while his analysis of capital, class and distinction have long inspired consumption research, recent decades have seen a deeper engagement with the overall practice theory that Bourdieu, as well as Giddens, Wittgenstein and others, developed. Inspired by theorists like Theodore Schatzki (1996, 2002) and Andreas Reckwitz (2002), a ‘second generation’ of practice approaches has come to completely dominate consumption research, especially in Europe (see Welch et al., 2020; Evans, 2019; Warde, 2017).

Through practice approaches, scholars have recently turned the consumption gaze away from expressive behaviour and towards more mundane forms of consumption and the socio-material organisation of everyday life. Often, this involves privileging analysis of ‘inconspicuous’ forms of consumption of for example energy (e.g. Winther & Wilhite, 2015; Sahakian, 2014; Shove & Walker, 2014), mobility (Guillen-Royo, 2022; Greene & Rau, 2018; Hansen, 2017), and food (Hoolohan et al., 2022; Neuman, 2019; Hansen, 2018; Warde, 2016). Practice approaches tend to take interest in how consumption is shaped in and by society-level processes and arrangements, for example, the temporal organisation of everyday life (e.g. Shove et al., 2009; Southerton, 2020; Greene et al., 2022), or the norms and expectations concerning comfort and cleanliness (Shove, 2003; Wilhite, 2008; Jack, 2017; Hansen et al., 2016). Practice theorists have also had a particular focus on the relationship between practices and the visible and invisible material arrangements that shape and are shaped by practices, such as infrastructure (Shove et al., 2019; Cass et al., 2018; Southerton et al., 2004). Consumption is not seen as a distinct practice in itself, but almost all practices involve some sort of consumption, and consumption always happens as part of, or as ‘moments’ in, practices (Warde, 2005). To take an example, buying or

wearing new clothes are not in themselves considered practices, but the purchase and wearing of particular items of clothing happens due to, and as part of, different and interlinked social practices and the expectations built into these, whether at home, with friends or at work. From a practice perspective, this means that rather than focusing on individual consumers and individual instances of consumption, we need to understand the broader patterns of human action and socio-material arrangements within which consumption patterns play out. As argued by Warde (2005: 146), practice approaches offer a perspective where ‘the collective development of modes of appropriate conduct in everyday life’ are more important than individual choice.

In many ways, the practice turn developed in opposition to both ‘the rational consumer’ posited by mainstream economics, and culturalist readings of consumption focused mainly on symbols, meanings and signs (Warde, 2014). Despite often quite different takes on the degree of agency attributed to individuals (see Welch & Warde, 2015), all practice approaches take the fundamental social nature of consumption as a starting point. Practice theories in general transcend the classic structure-agency dichotomy in the social sciences. A major source of inspiration is, again, Bourdieu and his concept of habitus, which in his words is both a ‘structured structure’ and a ‘structuring structure’ (Bourdieu, 1984: 166). This acknowledges that while people do have agency, this agency is immensely complex and more bounded than what rational choice theory would suggest. Later Sherry Ortner (2006) has built on this to argue that although individuals and their ‘projects’ do matter, agency is not the property of individuals. Drawing on influences such as Bruno Latour and actor-network theory, contemporary practice theorists also tend to insist, although again in different ways, that the material world takes on agency. Telling examples are how take-away coffee cups ‘ask’ (or are ‘scripted’) to be thrown away (Verbeek, 2006), or how (the lack of) bicycle lanes affect the recruitment to velomobile practices (Cass et al., 2018). From these perspectives, both the habitus and the material world have lasting effects on action which thereby acquire a history where the past acts in the present (Sahakian & Wilhite, 2014). As put by Wilhite (2013: 62), inspired by Bourdieu, ‘[m]oving and acting in sociomaterial space carves out pre-dispositions for subsequent actions that are embedded in bodies,

practices, and material settings'. This idea of 'distributed' agency is aligned with an understanding of practices as consisting of bodily, social and material elements that act in tandem to shape everyday consumption patterns (Shove et al., 2012; Sahakian & Wilhite, 2014; see Gram-Hanssen, 2011 and the chapters by Standal et al., Wethal, and Volden and Hansen for discussion).

Practice theories have become dominant in consumption research, but they have also started to receive significant criticism. Parts of the criticism revolve around the extent to which practice approaches overshadow other and more systemic approaches to consumption and consumer society (Evans, 2019), while another criticism concerns how practice theorists engage with, or fail to engage with, the agency of individuals, expressive culture and economic structures (Welch et al., 2020). The latter point has in fact been raised to the entire field of consumption research, not only within the practice turn (e.g. Fine, 2002), and is the topic of the following chapter. This brings us up to speed in this short history of consumption research. In different ways, the chapters in this book engage with practice theories in order to analyse pertinent issues related to consumption and sustainability in everyday life.

Consumption and the Transformation of Everyday Life: Outline of the Book

Richard Wilk's opening chapter introduced the main source of inspiration for this book, Hal Wilhite. Wilhite's work on consumption has influenced not just this book and its individual contributors, but the field of consumption research as such. The chapters that follow are inspired by and indebted to Hal Wilhite, and some are even co-authored by him. In different ways, they discuss the frontiers of work on consumption, dealing with social practice theories in particular.

Chapter 2 by Arve Hansen completes the book's introductory Part I. Hansen locates the challenge of simultaneously tackling underconsumption and overconsumption of resources at the core of global sustainability challenges: while a large proportion of the world's population does

not have the capacity to meet its basic consumption needs, a small proportion consumes far too much. However, while the number of people belonging to the former category has remained fairly constant for some time, the latter category is expanding rapidly, not least in the so-called ‘emerging economies’. Hansen argues that the field of consumption research needs to put a deeper engagement with the world’s ‘new middle classes’ high on the agenda. Such an agenda would, in turn, benefit from approaching changing consumption patterns as the outcome of both large-scale societal transformations and local-scale changes in how people carry out mundane activities. The chapter is influenced by social practice theories but argues for combining these with a direct study of economic systems and the political economy of consumption, in order to illuminate the fundamentally structuring role that capitalism has on consumption patterns. This is illustrated through an analysis of the radical changes in consumption patterns in China and Vietnam over the past decades, after both countries embarked on market reforms. The dramatic consumption booms these countries have seen under communist regimes—traditionally highly sceptical of ‘consumerism’—represent an excellent case for discussing the conditioning effects of political-economic contexts on consumption patterns.

Part II explores the role of energy and technology in everyday consumption. Energy is connected to and a defining part of sustainability in a wide variety of ways. Some of the most influential work in consumption research emerged from social scientists such as Harold Wilhite, Elisabeth Shove and Loren Lutzenhiser, who brought arguments about the need for taking the complexity of human behaviour seriously in the domain of energy research (e.g. Wilhite et al., 2000). Standal, Wilhite and Wågø’s chapter continues in this tradition by examining household energy practices in the ecological housing cooperative Klosterenga in Oslo, Norway. Klosterenga, built in the year 2000, was one of the early implementers of smart building principles in the city. Although the ecological profile of Klosterenga inspired some of the residents to change behavioural habits such as limiting their car use or consumption patterns, the findings in this chapter show that expectations of smart technology as a primary solution towards energy efficiency, wielded by ‘residents as rational consumers’ looking to cut costs, are not easily realised. The

residents of Klosterenga rarely emphasised the building's ecological profile and smart energy systems when purchasing their home. And in fact, the energy-efficient systems and integration of heating costs in the rent had adverse rather than positive effects on residents' energy consumption. Rather than taking the visions of ecology to heart, many residents legitimised their everyday habits of having a high indoor temperature by reference to the system being efficient. These findings contribute to the growing body of research that critically examines how smart technology visions for reducing energy use in buildings are actually implemented and used by the residents living in them.

Moezzi, Wilhite, Lutzenhiser and Bartiaux's chapter studies solar water heating in California. Solar water heating, when working correctly, can slash fossil fuel use in households, and these systems have been popular in some countries for decades. But even in places environmentally well-suited to solar water heating, the technology is not necessarily widely used. Despite favourable weather, an early embrace of rooftop photovoltaics, and a generous decade-long incentive programme, solar water heating remains uncommon in California households. While there are many possible explanations for this, there has been little fieldwork so far on who uses solar water heating, and with what expectations. This chapter presents findings based on conversations with California households who use solar water heating systems, and relates these findings to policies and strategies for achieving low-carbon futures. The authors also discuss the role of these interviews in their research project more broadly, and the challenges of producing an integrated socio-technical analysis that can satisfactorily inform technology-centred solutions to meet concrete policy targets.

Most people live in Asia, and the region's energy consumption will in many ways define global sustainability. And no country holds a more central position than China, the world's largest greenhouse gas emitter, representing almost a third of global emissions. China's power sector has contributed to more than 45 per cent of China's total historical carbon emissions. The economic turnaround experienced since 1978 has increased incomes and the national gross domestic product, in part through actively embracing consumerism. Expectedly, environmental exploitation and widespread pollution of air, soil and water have

accompanied the development process. Korsnes' chapter qualitatively explores China's current development path by analysing electricity consumption and energy services, looking mainly at the services that electricity provides domestically in an urban Chinese context. Korsnes takes inspiration by a 2004 article by Wilhite and Nørgård, where they held that it is not ethical or practical to argue for a reduction in energy growth in countries such as China. Korsnes then engages with their position on changing from efficiency to sufficiency thinking in energy policy, in other words the idea of having enough of something. But while Wilhite and Nørgård pointed towards affluent societies, Korsnes uses the same starting point to engage with China's energy sector. While he agrees that the onus should still be on the affluent population of the world, the chapter explores what such an idea could mean for a massive and rapidly growing economy such as China's. In doing so, the chapter asks what drives energy growth in China, focusing particular attention on how this growth connects to the delivery of basic services and infrastructure. The chapter then proceeds to engage with the ethical and practical dimensions of reducing the growth in energy consumption in China.

Wethal's chapter studies the impact of power outages in rural Norwegian households. While electricity plays a vital role in everyday life, electricity-dependent practices are often taken for granted, and the complex underlying infrastructure enabling these practices tends to be invisible—until power supply is disrupted. Drawing on qualitative interviews with rural Norwegian households, Wethal takes practices as the starting point for examining how daily life changes during power outages and how households experience the consequences of such outages. In this way, she uses households' perspectives to understand the consequences of power outages and shows how disruption influences relations between infrastructures, practices, customers and providers. Using the three elements of practice—materials, competences, meanings—Wethal demonstrates how power failures temporarily break the linkages between elements in electricity-dependent practices, and how households forge linkages between other items and technologies, embodied knowledge and competences, and new meanings, in order to continue daily life. This re-assembling of elements in practices demonstrates the complexity of power-outage consequences and explains how and why rural Norwegian

households can cope relatively well with lengthy power outages. The ability to adapt during outages demonstrates a relatively high level of flexibility, but this does not mean that households do not value having secure power supplies.

Part III of the book turns to the study of consumption and mobility. One of the most predictable consumption changes to follow capitalist development is increasing car ownership and the spread of what John Urry (2004) called 'the system of automobility' (see also Hansen & Nielsen, 2017). Drawing on earlier work (Nielsen & Wilhite, 2015; Hansen et al., 2016), Nielsen and Wilhite's chapter analyses the trajectory of the Indian small car, the Tata Nano. When launched by the manufacturer Tata Motors as a new Indian 'people's car' in 2008, the Nano was widely predicted to revolutionise automobility in India. Yet it barely made an impact on the Indian car market, and production was phased out just a decade after the first Nano had hit the Indian roads. By analysing the changing popular representations and symbolic imaginaries that attach to the car as a means to mobility and an object of identity and social status, Nielsen and Wilhite argue that the Nano failed neither because it was mediocre nor because it remained economically out of reach for most Indians. Rather, its insertion into the lower ranks of a powerful status hierarchy of identity-defining objects precluded it from adequately tapping into new and hegemonic forms of middle-class consumer aspiration in 'New India', thereby leaving the people's car without 'a people'.

While automobility is a defining part of unsustainable consumption patterns, aeromobility is in many ways worse and has come to define contemporary discussions about sustainable consumption and the responsibility and agency of individual travellers. Volden and Hansen study why 'green' consumers often continue to fly even though flying has become an increasingly contested form of consumption. The chapter provides novel insights into the stubbornness of air travel by specifically studying the obstacles that environmentally conscious consumers face when trying to limit or altogether eliminate aeromobility. Through in-depth interviews with Norwegian environmental organisation workers, Volden and Hansen analyse how environmentalists negotiate one of the most environmentally destructive aspects of their consumption patterns.

The research participants considered flying to be problematic, but also often necessary. Various expectations related to convenience, time, and sociality led to a certain ‘lock-in’ of (aero)mobility. Zooming out to consider broader practice geographies, Volden and Hansen argue that aeromobility contributes to the tempo-spatial expansion of many practices, changing their contents and meanings, as well as the contexts in which they unfold. To achieve sustainable mobility, they suggest that attention must be shifted from the air travels of individual consumers to the broader practices in which aeromobility is embedded.

Part IV focuses on wellbeing, a central topic in research on sustainable consumption (e.g. Guillen-Royo & Wilhite, 2015; Moynat et al., 2022). Sahakian’s chapter studies sustainable wellbeing during the Covid-19 pandemic and the associated semi-confinement measures that led to severe disruptions of everyday life, not least when it came to habits and routines. Sahakian analyses weekly journal entries of 95 students in an undergraduate class at the University of Geneva, where students engaged in a reflexivity exercise to document how their consumption-related practices were changing during the pandemic and how these changes relate to the notion of ‘sustainable wellbeing’. The chapter shows how students describe thrift and frugality measures in relation to resource consumption, critically reconsider existing practices such as ‘being fashionable’, but also explore new practices such as preparing elaborate meals. Importantly, the study also shows that in terms of wellbeing, consuming resources was clearly less important to the students than social relations and experiencing some form of contact with nature. In other words, the weekly journal entries made it possible to engage students in reflecting on the normative goal of need satisfaction, and enabled students to distinguish between needs and desires, and between needs and their means of satisfaction. Crucially, the pandemic also led to reflections around how wellbeing must be understood at both an individual and societal level, and how ‘sustainable wellbeing’ as a normative aim might be planned for in the future.

Guillén-Royo, Temesgen and Vangelsten’s chapter turns to the challenges associated with sustainable mobility in the Lofoten Islands in Northern Norway. Drawing on Max-Neef’s Human Scale Development participatory methodology, the authors conducted a one-day workshop

with representatives from local society discussing *satisfiers* (such as values, social practices, institutions, personal and collective actions, and so on) that either hampered or contributed to need fulfilment in the municipality. Participants also identified the *interventions*, at the personal, community and governance levels, that would improve need fulfilment and environmental sustainability. Based on an analysis of workshop data, the authors show how sustainable transport practices, including ride and car-sharing, using collective transport and cycling, were considered *synergetic* as they helped fulfil several human needs whilst hampering none. Further, the study highlighted the interdependence of satisfiers associated with sustainable transport and other need-promoting satisfiers. For example, encouraging ridesharing appeared both linked to the development of a dedicated mobile phone application and to the creation of non-commercial meeting places. Based on this, the chapter also offers a series of reflections on the implications of a human needs perspective for the transition towards sustainable practices and consumption patterns.

Butters and Jakobsen examine how one can practically embrace wellbeing in sustainability work, arguing that so-called value mapping offers a fruitful way forward. If the goal of consumption—and hence of economics—is wellbeing, we are faced with a situation where orthodox tools such as GNP indices are of little help, as they tell us little meaningful about our personal wellbeing, much less about the wellbeing of our planet. Newer frameworks such as Ecological Economics or Quality of Life indices that incorporate qualitative criteria and embrace a broader view of costs and benefits are more meaningful, but arguably still leave consumers without the necessary tools to guide and frame practical decision-making. The aim of Butters and Jakobsen is to offer such tools to enable those who have the intent to move towards more sustainable consumption patterns, whether consumers or policy makers. To Butters and Jakobsen, ‘value mapping’ and its integral approach to wellbeing and consumption offer a framework that allows us to evaluate and compare different choices and courses of action, and to arrive at conclusions about what kinds of consumption that can lead to maximum wellbeing with minimum negative impacts.

The fifth and final part of the book looks at how consumption can become more sustainable. Desmond McNeill’s chapter stands out from the

rest through directly engaging with mainstream economic theory. Through engaging with criticism both within and outside of orthodox economics, he asks whether and how the discipline of economics can help to change consumption in a more sustainable direction. Economic theory of consumer behaviour is sophisticated and rigorous, he argues, but nonetheless very limited insofar as it excludes from consideration many of the factors which are well recognised by other social sciences as being important for understanding human actions—limitations that stem largely from the discipline's standard model of *homo oeconomicus*. But even simple economic theory, in which income and price are the main explanatory factors of consumer behaviour, in fact provides the basis for potentially very effective policy instruments—if incomes fall, for example, consumption is indeed reduced, and manipulating taxes and subsidies can indeed substantially alter consumer behaviour. While such policy instruments to shape consumption are readily available, the problem is that they tend to be politically very unpopular. McNeill argues that both orthodox and heterodox economics bring vital consumption insights to the table, but that these must be coupled with insights from multiple disciplines if we are to properly understand, and change, consumption patterns.

Southerton and Warde also start from the position that present strategies for achieving reductions in material consumption in affluent societies are insufficient and proceed to consider alternative approaches. In an early critique of inadequate conceptions of consumer demand, Wilhite and Lutzenhiser (1999) examined the difference between base and peak loading as a mechanism responsible for immediate inefficiencies and escalating levels of production in energy systems. Their article introduced the term 'just-in-case' to identify a common rationalisation for the persistent tendency of individuals and organisations to hold or increase excess capacity. As a source of and justification for excess capacity, the proviso 'just-in-case' has wider relevance in debates about unsustainable levels of everyday consumption, regarding the determination of what might be too much, what too little, and what just enough (see also Korsnes, this volume). Defining 'enough' is an intellectual and political minefield, but at least it is possible to identify mechanisms which tend to generate unfruitful excess. Just-in-case reasoning is itself one such mechanism, Southerton and Warde argue. It is one surreptitious way to increase environmental load through the justification for ownership of un(der)utilised

material resources. This chapter reveals circumstances in which just-in-case provides a rationalisation for escalating production and overstocking, and points to four ways of reducing the environmental impacts of particular goods, while also discussing the merits of alternatives to the private and exclusive ownership of underutilised resources-intensive products, including sharing ownership and renting services.

Lastly, Thomas Hylland Eriksen's afterword concludes the book. Eriksen notes that while Hal Wilhite did not live to see the onset of the Covid-19 pandemic, he would undoubtedly have framed it as a window of opportunity for the global community to rethink its priorities and move in a sustainable direction. In his last book, Wilhite (2016) unequivocally rejected capitalism and its promises of 'green growth' as a solution to the climate crisis. However, unlike many climate scientists and activists, he also insisted that climate policy had to be integrated with an analysis of global inequality. The pandemic has tragically exacerbated global inequalities and led to the further impoverishment of already very poor people, whose overriding concerns are how to make ends meet, not how to save the Greenland ice cap. By way of a comparative analysis of the effects of the Coronavirus pandemic on communities which face the situation under very different circumstances, Eriksen's chapter asks whether a global policy on climate and the environment is at all conceivable in the aftermath of the pandemic. And if so, how? By way of dialogue with Wilhite's research on capitalism, consumption and the environment, this concluding chapter aims to provide a credible answer to these questions.

Towards a Broadened Agenda for Research on Consumption and Sustainability

As we were writing this, the UN's Intergovernmental Panel on Climate Change (IPCC) released the third working group's contribution to the sixth assessment report on tackling climate change. The key messages are dire—emissions continue to rise and too little is being done to mitigate climate disaster. Of particular interest to the readers of this book, this was the first time that the IPCC devoted attention to 'demand-side' measures, locating consumption measures such as shifting to healthy and sustainable diets, reducing food waste and changing transport patterns as crucial

for cutting emissions (IPCC, 2022, Chap. 5). This is the latest example of a general tendency towards a broader acknowledgment of the role of consumption in global sustainability and the great potential that lies in changing consumption patterns rather than focusing merely on production and efficiency (see for example Wiedmann et al., 2020; Poore & Nemecek, 2018; Dubois et al., 2019). At the same time, to avoid a one-sided and reductionist focus on individuals and their idiosyncratic attitude and values, it underscores the importance of researchers within the field of consumption studies actively communicating the need for holistic approaches to change consumption.

Unsurprisingly, the contributions in this book do not bring simple solutions to the table. Nor should they, given the complex ways in which consumption patterns are embedded in societies and everyday lives. The chapters do however point in the direction of knowledge needs and possible steps that could take us towards more sustainable societies through addressing ‘demand-side’ changes. Much more research is needed on the stubbornness of consumption patterns and avenues for change in both affluent societies and emerging economies. The practice turn has taken the field of consumption studies further towards holistic understandings of consumption. A promising next step is to build on these insights to develop a broader research agenda on sustainable consumption that can balance the need to contribute to knowledge-based consumption policy with independent and critical social-scientific research. While consumption research needs to continue with empirically grounded and contextually sensitive explorations of everyday life, such an agenda should to a larger extent than what is the case today be global in orientation, and deal with difficult questions of inequality and power (see Anantharaman, 2018). Finally, a broadened agenda for research on consumption and sustainability needs to balance the deep engagement with everyday practices with better accounting for the political economy of everyday life in order to ‘engage with, break and reform’ the deep unsustainability embedded in contemporary capitalist consumer societies (Wilhite, 2016: 126). We hope that this book can help spark new conversations and debates that take the field in such a direction.

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2

Capitalism, Consumption, and the Transformation of Everyday Life: The Political Economy of Social Practices

Arve Hansen

The task of simultaneously tackling underconsumption and overconsumption of resources represents the world's main global sustainability challenge.¹ While large parts of the global population survive on a bare minimum, the resource intensive everyday practices of rich societies—including car dependency, frequent flying and high levels of meat consumption—and the fact that there is seemingly no endpoint to the increasing consumption of, for example, clothing and technological appliances are at the core of the unsustainabilities embedded in the 'Capitalocene' (Moore, 2016). Although in variegated ways, similar consumption patterns develop alongside increasing affluence in otherwise highly different contexts. As the 'global consumer class' expands, understanding how to confront unsustainable consumption patterns is more urgent than ever.

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According to a recent Lancet report, we are facing a global ‘syndemic’ of undernutrition, obesity and climate change (Swinburn et al., 2019). Many more people are now overweight than underweight globally, and overweight and obesity continue to increase in all the world’s regions (FAO et al., 2021). Furthermore, the demand for water by far outpaces population growth (UN, 2020a), and much of the global freshwater reserves are under serious stress. In many affluent societies, house sizes have grown dramatically, and many own several houses, something that in turn requires vast amounts of energy (Wilhite, 2016). Meanwhile, the number of people without adequate housing is increasing, and more than 1 billion people lived in urban slums in 2018 (UN, 2020b). More than 10 per cent of the global population, most of them living in rural areas, do not have access to electricity (World Bank, 2020). Furthermore, in 2017, 785 million people still lacked even basic drinking water services (UN, 2020a). And despite all the talk about alleviating hunger, the prevalence of food insecurity increases, which is connected to a range of adverse consequences (Rudolfson, 2021). According to FAO (2020), 690 million people, 8.9 per cent of the world population, were undernourished in 2019, a situation worsened dramatically by the Covid-19 pandemic (FAO et al., 2021).

Traditionally, the unevenness of global resource consumption has been understood alongside dichotomies such as ‘North-South’ or ‘developed and developing countries’. While these remain popular, they were never particularly accurate and depend on simplifications that have long exceeded their expiration date. The most obvious reason is found in the rapidly escalating levels of household consumption in so-called emerging economies (Hansen & Wethal, 2015), most notably in Asia (see Hansen, 2020; Kharas, 2017). As Asia has moved beyond its role as factory of the world to also become the leading consumer market, the region has become home to booming markets within virtually all consumer domains, from frozen chicken and instant noodles through washing machines to flights and luxury goods. At the centre of such trends are large and rapidly expanding urban middle classes. While Asia is currently home to more than half of the 3.2 billion people estimated to comprise the ‘global middle class’, the Asian middle classes keep expanding rapidly (Kharas, 2017).² These middle classes, sometimes also labelled as ‘consumer classes’

(e.g. World Bank, 2018), are seen to play a defining role in a range of development processes (see Melber, 2015; Wiemann, 2015a, b).³ As consumers, they represent demand for more goods and services and are seen as pivotal for building a strong domestic economy. At the same time, however, and rather optimistically (Hansen and Wethal, In press), they are also expected to be more environmentally conscious and take the lead in reducing resource use and overconsumption (Wiemann, 2015a, b).

Understanding escalating levels of household consumption is a complex task. Consumption is shaped by a wide range of factors concerning how our stuff is produced, how we live and work, how we eat and how we move around. However, this complexity, I argue, is often ignored when consumption outside high-income countries is discussed. Indeed, a range of simplifications—ranging from the little helpful rational consumer of mainstream economics to explaining rising consumption primarily as the outcome of ‘Westernisation’—tend to dominate discussions surrounding the ‘new consumers’ of global capitalism (see Hansen, 2021). Rather surprisingly given the profound impacts they are having and will have on global consumption patterns and resource use, these new consumers have been subject to relatively little attention in the by now large field of consumption research. This field has had a tendency to focus on affluent societies, a tendency strengthened during the ‘practice turn’ of the past couple of decades (although see Rinkinen et al., 2019; Hansen, 2017a, 2018; Hansen & Jakobsen, 2020a; Sahakian et al., 2016). This is perhaps not surprising, but given the speed at which the emerging middle classes and their consumption levels are growing (see Kharas, 2017), it represents a significant lacuna in the literature.

The starting point of this chapter is that a broader research agenda to make sense of consumption among new middle classes is needed (see also Hansen and Wethal, In press). Specifically, I argue that such an agenda need to approach changing consumption patterns as the outcome of both large-scale societal transformations and local-scale changes in how people carry out mundane activities. In the following section, I discuss the theoretical position guiding this chapter, focusing on the political economy of everyday practices. My main point is that theories of practice, now dominant in consumption research, are well-suited to make sense of consumption transformations and new middle classes. However, I argue, this

requires bringing political economy into the analysis, something practice approaches have been labelled as so far unable or even ill-suited for doing. I engage with this critique and suggest ways forward, focusing in particular on the fundamentally structuring role that capitalism has on consumption patterns. I illustrate this with the case of the radical changes in consumption patterns in China and Vietnam in the past decades. The dramatic consumption booms these countries have seen under communist regimes traditionally highly sceptical towards a wide range of consumer goods, represent an excellent case for discussing the conditioning effects of political-economic context on consumption patterns.

Systems and Practice Turns: The Political Economy of Practices

The ‘practice turn’ in the social sciences has had a strong impact on consumption research and is discussed throughout this book (see the previous chapter for an overview). From this perspective, consumption is understood as ‘moments’ in social practice and is fundamentally shaped by social and material contexts (Warde, 2005, 2014). In this chapter, I will focus on what has been located as a main weakness of practice approaches to consumption; their blind spot towards the political economy and the broader systemic context within which consumption takes place (Welch et al., 2020; Evans, 2019, 2020; Hansen, 2017a, 2018, 2022). While the criticism is in many ways justified, I will argue that it is not entirely fair. That is, there are, as I will show, many ways in which practice theorists have engaged with provision and political economies. However, there is significant potential for improvement, particularly when it comes to engaging directly with capitalism as a social and economic system.

First of all, some practice approaches obviously do take production and provision into account. Gert Spaargaren’s (2013) work on ‘consumption junctions’, analysing demand and provision through specific sites (such as supermarkets) where practices of consumption and production meet is one example (see also Oosterveer et al., 2007). Demand is a good

place to start for making the connection between consumption and the systems within which it takes place. Elizabeth Shove and colleagues have been central in theorising the connection between provision, practice and demand, both in their work on the relationship between infrastructure and practices (Shove & Trentmann, 2019; Cass et al., 2018) and in their work specifically on where demand comes from (Rinkinen et al., 2021). We must understand demand to understand consumption, yet, as Appadurai (1986) has pointed out, too often demand is treated as an outcome of infinite and transcultural *desire* or fixed *needs* that are somehow natural to us. Mainstream economics is of course the usual suspect here (see McNeill, this volume), but across the board of sciences and policymaking, the idea of demand as something that exists out there and has to be met is powerful (see Rinkinen et al., 2021). But where does demand come from? Appadurai (1986: 29) pointed out that demand ‘emerges as a function of a variety of social practices and classifications, rather than a mysterious emanation of human needs, a mechanical response to social manipulation [...], or the narrowing down of a universal and voracious desire for objects to whatever happens to be available’. Relatedly, Wilhite et al. (2000: 123) concluded that (energy) demand is the ‘result of interactions in the social, cultural and technical contexts in which individual lives are played out’, and Rinkinen et al. (2021) hold that demand is derived from social practices. As they explain, ‘demand is an outcome of the social, infrastructural and institutional constitution of society and [...] resources such as energy are consumed and transformed in accomplishing a huge range of social practices including those involved in heating, commuting, laundering, cooling and so forth’ (p. 8). Such an approach involves provisioning actors. As put by Shove and Pantzar (2005: 62) in their classic text on the invention and reinvention of Nordic walking, ‘consumers and producers are *both* involved in constituting and reproducing practices, the successful accomplishment of which entails specific forms of consumption’ (italics in original). Rinkinen et al. (2021) expand on this and argue that demand is ‘made, not simply met’ and tie the creation of demand directly to policymaking and how infrastructure and systems of provision are ‘designed and sized to enable certain ways of life’ (p. 6), and to businesses and how supply ‘breeds’, and not only meets,

demand (a proposition not unknown to economists, with classical treatises such as Say's law).

These approaches certainly take us a long way in connecting practices and provision. They also involve clear nods towards what Ben Fine (2002) conceptualises as 'systems of provision', or 'the inclusive chain of activity that attaches consumption to the production that makes it possible' (Fine, 2002: 79; see also Bayliss & Fine, 2020). But practice approaches tend to have a very instrumental approach to systems of provision, using the concept to unveil specific connections, for example between power grids and household energy practices. The work discussed above takes us in the direction of how practices are enabled and 'constrained by material circumstances' (Fine et al., 2018: 27), but do not live up to Ben Fine's original intention of bringing capitalism into the study of consumption. Leaving out capitalism means also leaving out crucial questions of power. While power, and particularly in terms of class, is in different ways central to classic practice theory (see Ortner, 2006), it has been less pronounced in 'second-generation' work (see previous chapter). And neither classic nor contemporary practice approaches have engaged much with power in the sense of the accumulation strategies of capital and the ways in which these co-shape demand, practices and consumption. So the concrete outcomes of political-economic processes are introduced and the influence of a range of actors mentioned, but the structuring effects of capital and capitalism are mostly left untouched. This can be partly explained by the flat ontology that dominates much of practice theory and which complicates engagement with large-scale phenomena unless studied through their concrete manifestations (Nicolini, 2017; Hansen, 2022). But the repeated calls for closer engagement with the systemic conditions in which practices take place (e.g. Warde, 2014, 2015; Evans, 2020) may open for new ways of understanding the structuring effects of capital and capitalism on consumption. Representing a rare example of contemporary practice-theoretical engagement with capitalism, Harold Wilhite's work is a good place to start. Although always grounded in everyday life, his approach to practice engaged directly with economic and cultural supra-practice configurations—what we in one instance referred to as 'meta-practice' (Wilhite & Hansen, 2015). To him, and to me, understanding capitalism is fundamental to understanding

unsustainable consumption. He thus places capitalism at the centre of the analysis in his 2016 book *The Political Economy of Low Carbon Transformation*. Drawing on a range of sources from Marx to Harvey and Piketty, he focuses on how the ‘pillars of capitalism’—economic growth, individual ownership, marketisation, product differentiation and turnover—complicate sustainability transformations and drive escalating consumption. He goes deeper to analyse the larger societal impacts of capitalism’s growth imperative and argues that capitalism creates not only specific systems of provision but cultures and habits of growth (Wilhite, 2016),

Influenced by Wilhite and drawing on the groundbreaking work of the many other scholars introduced above, I believe the development of a ‘political economy of practices’ is warranted. What I argue for is an approach that manages the balancing act of taking capitalism as a social and economic system into account *without* the production centrism that tends to dominate political economy work. It is a study of social practices that takes political and corporate power into account as at least co-shaping and at times also fundamentally structuring consumption and practices. This happens for example through limiting possible ways of action and through limiting consumption options, such as when only Coke is available or only unhealthy food is affordable to consumers (Wilk, 2018; Otero, 2018). The definitional power of business actors needs to be included in holistic practice approaches. Capitalism is designed to provide a wide array of consumer goods, yet, and particularly among poorer segments of the population, capitalist societies are also defined by a lack of alternatives. Capitalism, and perhaps even more so in its contemporary shape, is also geared towards creating often extreme forms of inequality through a consumer society where cheap goods are produced (and discarded) through the exploitation of workers and the environment and where the quality of products one can buy is defined by purchasing power. The environmental footprint of the consumption patterns of the world’s richest people is a highly visible illustration of the inequalities embedded in global capitalism (Barros & Wilk, 2021). Taking into account the political economy of practices should thus also lead to a study of the exploitation on which consumption patterns tend to be based, since, as put by Brand and Wissen (2021: 5), ‘normality is

produced [...] by masking the destruction in which it is rooted' (see also Anantharaman, 2018).

To stay within the realm of food, Otero (2018) has introduced the idea of the 'neoliberal diet'. Take the example of food shopping. The expansion of supermarkets in many parts of the world, often known as supermarketisation, deeply influences what we buy and eat (Demmler et al., 2018) and is an example of the forms of structural change Shove (2003) has located as critical avenues for consumption research: 'the big, and in some cases, global swing of ordinary, routinized and taken-for granted practice' (Shove, 2003: 9). This is a typical example of interlinked changes in systems of provision and everyday shopping practices, often combined with other systemic changes, such as an increasing dominance of the 'system of automobility' (Urry, 2004). Such food transformations are quite obviously driven by much more than individual consumers making new choices, but also more than infrastructure and policy. They represent changes in the total system of how food is produced and consumed, from farms to the everyday geographies of consumption (Clapp, 2016; Hansen & Jakobsen, 2020a). While a practice approach offers a highly useful way for investigating the intersections between everyday geographies, infrastructure and changes in everyday life that such food transformations represent, it needs to be accompanied by a dynamic approach to political economy in order to provide a holistic account of changing consumption patterns (Hansen, 2022).

In order to illustrate the fundamentally conditioning role of capitalism on consumption patterns, I use the case of two recent 'capitalist transformations'. In the following, I turn to how consumption has represented an integral part of capitalist development in China and Vietnam.

Consumer Revolutions in China and Vietnam⁴

China in 2017 became the world's largest retail market, surpassing the United States (Fickling, 2018). This was made possible by a quarter-billion people strong Chinese middle class (The Economist, 2016). While much smaller in size and global impact, the 'socialist' neighbour to the south Vietnam is home to rapidly expanding middle classes with

increasing purchasing power and has seen dramatic increases in consumption over the past decades. In other words, large parts of the new 'consumer classes' of global capitalism are found in nominally socialist countries. Interestingly, the consumption booms these countries have been home to have taken place within regimes that have traditionally been, and to some extent still are, strongly opposed to the Western consumer society.

Conflicted Consumerism

Although economic openness became the mantra in both China and Vietnam following market reforms in the 1970s (China) and 80s (Vietnam), there was much worry within the ruling communist parties regarding the culturally and morally eroding impacts of embracing globalisation. One of the main concerns regarded the consequences of 'Western consumerism'. The fear was that integration with the capitalist world would lead to an increased desire for unnecessary consumer items, which came along with a consumer culture that was seen as a threat to socialist values. For Chinese leaders, consumerism was seen as 'the defining element of cultural and moral degradation in the contemporary global era', and linked to 'materialism, hedonism, and worship of money' (Davis, 2011: 339). Vietnamese leaders had similar worries. According to Taylor (2003: 139), in the 1990s, state officials talked of a crisis to Vietnamese culture and society brought along by deeper integration with the non-communist world. The main negative effects were more borrowing of money and the emergence of consumerism, alongside 'a *cult* of exotic taste' and 'the resurgence of a cultural inferiority complex'. Given the efforts placed on building a strong identity in opposition to capitalism, this was a worry to be taken seriously. Thus, while the official slogans talked about openness to trade, leaders in both China and Vietnam started campaigning for the necessity of restrictions on imports and were particularly worried about the effects foreign influences would have on youth (Marr & Rosen, 1998). According to the communist leaders, foreign influences in the realm of consumption could lead to all sorts of negative influences, including spikes in crime and violence due to an

alleged impact of movies from Hollywood and elsewhere in Asia (Marr & Rosen, 1998). But an increasing trend towards conspicuous consumption was also seen as a considerable problem. The private car, as probably the most conspicuous consumer item there is, is a telling example. In both China and Vietnam, there had been little room for private automobility in the decades of planned economy that preceded the socialist market economy. While modern China's founding father Sun Yat-sen had dreamt of a car for every man in the 1920s, the communists under Mao banned private cars altogether, with the exception of high-ranking cadres (Notar, 2017). In Vietnam, as late as during the 2000s, government officials worried about the appropriateness of owning a car (Hansen, 2017b).

A capitalist economy depends on increasing consumption (see Wilhite & Hansen, 2015 for discussion). Alongside a scepticism towards the perils of consumerism, the communist regimes have thus focused on developing domestic markets. The Chinese government has been particularly clear in this regard, with a consensus among policymakers on the importance of developing so-called consumption-led growth through an internal market as the new engine for long-term growth (Croll, 2006). The capitalist transformation has indeed, broadly speaking, brought along fundamental changes in the party-states' approach to consumption. Due to high saving rates and an overdependence on exports, Chinese politicians have moved from consumption scepticism to actually pushing people to consume more (Gerth, 2010). This is quite succinctly captured by then-premier Zhu Rongji's report to the Ninth People's Congress in 2002:

We need to eliminate all barriers to consumption by deepening reform and adjusting policies. We need to encourage people to spend more on housing, tourism, automobiles, telecommunications, cultural activities, sports and other services and develop new focuses of consumer spending' (in Otis, 2012: 43).

The US-China trade war has unsurprisingly strengthened the perceived need to boost consumption at home (Tang, 2019). There are of course many ways to boost consumption. In both China and Vietnam, access to credit and reduction of tariffs on imported consumer goods are important economic factors. More leisure time and public holidays contribute

as social factors. And, crucially, the most dramatic change is in the cultural and ideological spheres, where middle-class lifestyles (although not labelled as such) are considered ‘modern’ and ‘civilized’, or, in China, as ‘high-*suzhi*’ or higher quality (Kipnis, 2006; Miao, 2017). This does not mean all forms of consumption, however. With freedom comes responsibility, and just like the New Socialist Man in the past was expected to be selfless and always put the collective first, the New Socialist Consumer must act ‘civilized’ and ‘modern’ while at the same time stay in line with national culture. As Gillen (2016: 41) has argued, the state still ‘uses culture as a means to caution Vietnamese society against consumerism and the perils of individual wealth’. While consuming goods can now be a good thing, this should not go on accord with the culture of the socialist market economy. While deciphering what exactly that means is hard, morality is central. Indeed, prosperity is now a moral issue. And according to communist party rhetoric, the values of socialism will counter the negative effects of mass consumption. In China, the party embraces and promotes high-*suzhi* lifestyles. Xi Jinping’s ‘Chinese Dream’ involves ‘an infusion of cultural values to balance materialism’. As put by China Daily USA (2014, n.p.):

For the past 30 years Chinese have been manufacturing and exporting products to meet the materialistic aspirations of consumers in the West. Chinese are now ready to consume what they produce, to realize the materialistic aspect of the Chinese Dream. The only question is whether this acquisition of material goods will unfold as Western-style conspicuous consumption in China or in a more considered way, informed by a Chinese cultural appreciation for keeping life in balance.

While there is a large dose of party propaganda in such statements, it clearly reflects the ongoing worry concerning the perils of consumer society. These gain importance in Xi Jiping’s aims to develop an ‘ecological civilization’ that is to restore a harmony between human and nature, and where sustainable—or high quality, healthy and eco-friendly—consumption is central (Pan, 2016).

That said, anyone familiar with China, or Vietnam for that sake, knows that conspicuous consumption is not necessarily a Western

thing. At least, conspicuous consumer trends have long been important, some even argue that owning the right kind of brands is a 'national obsession' in China (Yu, 2014). Although such processes take place in different ways depending on the context, conspicuous consumption is a typical trait in the development of consumer society. Just ask Thorstein Veblen (2005 [1899]) or Pierre Bourdieu (1984), who in quite different and highly influential ways have shown how positional consumption is naturalised through class relations. Veblen is perhaps particularly to the point for these cases. His study of the purchase and display of luxury goods among the new rich in the United States after the second industrial revolution showed how expensive material goods gained particular value in terms of their capacity to evidence wealth and power in context where inherited social positions were losing the monopoly on hierarchically structuring society (see also the previous chapter). Broadly speaking, this is quite easily transferred to China and Vietnam, where the hierarchies of the Leninist party-state have been, to certain extents at least, challenged by the hierarchies of success in the market economy (see Hansen, 2017b). There is indeed an interesting inclination towards showing-off expensive new belongings among the well-off in both China and Vietnam. China is indeed vital to the world of luxury, closing in on 40 per cent of the total global market for luxury goods (Asia Times, 2018). Also in Vietnam, the high-end market is booming. Furthermore, in both countries, the consumption of luxury products is not just about displaying wealth but is closely related to a culture of gift-giving, related both to ways of showing respect and to 'greasing' of contacts. Under the market economy, the gifts have become more luxurious and the 'need' for and potential gains from corruption much larger. As part of anti-corruption policies, the Chinese state thus in the early 2010s started cracking down on gift giving, causing a temporary slump in sales of luxury products.

While luxury brands represent a particularly conspicuous and contradictory element of 'consumer socialism' (Hansen, 2020, 2022), however, the capitalist transformations in China and Vietnam have first and foremost led to increased consumption of a wide range of consumer goods.

Consumption Booms

Ideological scepticism is only one part of the story of why consumption boomed after economic reforms. Planned economies have often struggled to keep up with demand for consumer goods, even of the most basic kind. In China and Vietnam, both factors have lost importance. China indeed produces a large part of the world's consumer goods, and Vietnam has also seen considerable industrial development. The openness for trade and investments, combined with increased purchasing power and an increased willingness to spend money, has led to an extraordinary increase in the consumption of consumer goods in both countries (see Fig. 2.1).

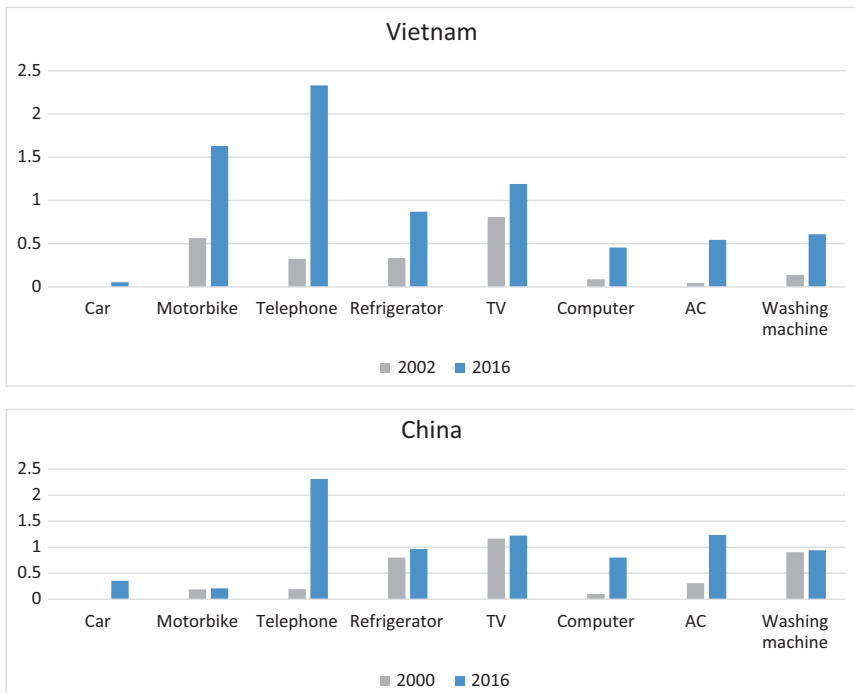


Fig. 2.1 Consumption booms: number of consumer goods per urban households. Note: Compiled by the author based on Vietnam Household Living Standard Survey (various years) and China Statistical Yearbook (various years)

While large parts of society in both countries contribute to this boom, it is particularly the upper parts of urban middle classes that are high consumers. For example, there are still many households in Vietnam that cannot afford owning a motorbike. So the fact that there is now on average about one motorbike per person in Vietnam's largest cities (Hansen, 2022) is due to the fact that many well-off households own at least one motorbike per household member. Motorbikes in Vietnam, and the development of a 'system of moto-mobility' is also a very good example of how the interaction of political economy and everyday practices can co-shape rather unique consumption patterns (Hansen, 2017a, b). So are cars and the system of automobility, although this is a more expected development. Urban car ownership has boomed in China, where annual car sales reached 29 million in 2017, a more than five-fold increase compared to a decade earlier (OICA, 2020). Importantly, this happened despite considerable restrictions on urban car ownership (Liu et al., 2020). Since then, however, car sales have stabilised and even declined, and only the electric vehicle segment is experiencing growth (OICA, 2020). In Vietnam, there are no electric cars, but plenty of electric scooters. While the Vietnamese middle classes are predominantly driving motorbikes, car sales have boomed also there, and it is not uncommon to own both a car and a motorbike.

Fuelled by rising incomes and—more recently—soaring household debt (Tang, 2019; Nguyen et al., 2018), particularly the upper parts of the urban middle classes in China and Vietnam have started to spend more money and are adopting lifestyles and consumption patterns that can be recognised as 'middle class' globally. Young, fashionable urbanites have become emblematic of this class, with clothing styles, hairdos and eating and drinking habits to match their status. Niche stores and hip, quality-oriented cafés and coffee shops are examples of the urban spaces frequented by this segment of the middle classes. More generally, housing practices are changing towards smaller households in increasingly air-conditioned environments, the entertainment industry is booming, smartphones have become normal, shopping malls and supermarkets are popping up and so are restaurants and fast food chains, while travelling within or outside one's country for tourism purposes is becoming a normal leisure activity. The middle classes live in larger and more solid

houses, often equipped with modern appliances, and spend much more on non-food items than the rest of society (see World Bank, 2018). But they also spend more on food items. While traditional 'wet markets' have long represented the norm for food shopping in China and Vietnam, both countries are witnessing rapid processes of supermarketisation. Importantly, this is an intended development by the governments in the two countries, who tend to view traditional markets as outdated and unhygienic. While it could be argued that supermarkets emerge as a response to demand from emerging middle classes, they also co-create this demand (Qaim, 2017). It is indeed well established that changing from market to supermarket affects what consumers purchase, particularly towards more processed food (Demmler et al., 2018). These major changes in systems of provision profoundly affect everyday practices, in combination with other structural changes, such as the development of a system of automobility. It also moves power and profit from small-scale vendors to large corporations and domestic and regional capital. Interestingly, and somewhat ironically, these corporations are able to benefit from a series of food scandals and scares which has made food safety a main concern among consumers in both countries (see Ehlert & Faltmann, 2019). This trend is further strengthened by the Covid-19 pandemic. Small-scale producers and local markets are under increased pressure due to the pandemics (Wertheim-Heck, 2020), while large businesses in the food industry are well placed to increase their market control through stricter quality controls (Hansen & Jakobsen, 2020b).

Similar trends are visible within other parts of the food systems in both countries. For example, both countries have seen a rapid increase in the prevalence of eating out. Eating out as a practice has been co-shaped by urban foodscapes consisting of a plethora of restaurants and street kitchens. Increasingly, these are challenged by food franchises, many of which are owned by large corporations. Both globally dominating brands such as McDonald's and KFC, Asian brands such as Lotteria from Korea and Jollibee from the Philippines, and a range of domestic varieties exist. These have however not outcompeted street kitchens. In Vietnam, the global franchises in particular have developed at a much slower speed than they expected, and are mostly popular among young people and children (Hansen, 2021). But many of them are growing, often through

adapting to local food practices and for example offering affordable rice lunches. Furthermore, governments support a move away from the unruly street kitchens and supports investments by large capital in domestic food systems from farm to fork. Again, this shifts power towards big capital. It also changes how food is produced, provided and consumed. This does not necessarily imply a ‘Westernisation’ of diets, but globally it does imply a dramatic homogenisation in terms of contributing towards diets consisting of more animal source food, more fat and sugar and more highly processed food (Hansen & Jakobsen, 2020a). This is referred to as a Western diet in the nutrition literature (see Kearney, 2010; Popkin et al., 2012), but, I argue, should rather be seen as a capitalist diet (see Otero, 2018). Globally, the increasing dominance of supermarkets and fast food chains involve corporate power over the food options of consumers, often shaping food practices towards less healthy and low-quality food. Richard Wilk (2018) blames the global obesity epidemic on this expansion of ‘global junk’. It is indeed an excellent and disturbing example of the impact of political economy on everyday practices.

Consumption, Capitalism and the Transformation of Everyday Life

The cases of consumer revolutions in China and Vietnam illustrate some of the complexity of consumption. Practice approaches can go a long way in explaining how more goods and services gradually become normal, and how different consumer items move from luxury to necessity. They can also show how such processes co-develop with infrastructure and policy-making. But the focus on carefully unpacking the fabric of normality, one of the key strengths of practice approaches, tends to make them lose sight of the structural conditions within which consumption takes place. The cases of China and Vietnam illustrate how important systemic changes and ‘supra-practice configurations’ are for understanding consumption. The fact that these two countries have gone through a fascinating combination of capitalist transformation and communist-rule continuity makes them particularly useful as illustrations of the importance of governance, ideology and political economy. Quite simply, the change from a planned

economy to a market economy involves a change from a system striving to deliver enough goods to one where the expansion of production and consumption is fundamental to the functioning of the economy. Even the most conservative communists have to allow for an expansion of private consumption when the growth of the domestic economy is at play. Thus, capitalist transformations have seen the communist regimes gradually loosen the scepticism towards 'consumerism' and somewhat hesitantly embracing consumer society. In turn, then, capitalist development comes with certain macro-infrastructures of consumption, what Ritzer (2010) has dubbed 'the means of consumption', such as supermarkets, fast food restaurants and shopping malls. These are in turn part of certain systemic complexes of practice, such as housing, leisure and work arrangements or the system of automobility, which are shaped through both political regulation and the accumulation strategies of businesses. While these developments take different forms in different contexts (see Hansen et al., 2016), I do understand them as certain 'blueprints of modernity' that are embedded in capitalism. The main point here, however, is that these large processes must be understood if we are to make sense of unsustainable consumption patterns. I think the most useful way of going about doing this is to introduce capitalism to practice approaches' sophisticated understanding of everyday life.

The Political Economy of Everyday Practices

The discussion above has highlighted the importance of understanding the macro-systemic context within which consumption takes place. Without capitalist transformation and integration into global networks of production, trade and investments, neither the new middle classes nor their consumption patterns would be possible. The discussion also touches on the role of businesses in co-shaping demand. Whether through marketing, infrastructure and spatial arrangements or through partly dictating consumption through systems of provision, many businesses are immensely powerful in shaping consumption patterns. In order to fully understand consumption, practice approaches need to re-engage with power and to somehow deal with both the overall growth imperative of

capitalism and the direct impact of capitalist accumulation strategies on everyday practice (Wilhite, 2016).

A political economy of practice also needs to take into account inequality. Consumption research tends to focus on relatively affluent people. It also tends to view goods as inherently bad for people, something that, as Daniel Miller has argued, often turns it into 'a literature that allows the anxieties of the rich to obscure the suffering of the poor' (Miller, 2001: 241). The consumption literature certainly tends to neglect the emerging middle classes and their aspirations as consumers, and how increasing access to consumer goods in many ways represent progress and development for people. This is perhaps particularly the case within practice approaches and sustainable consumption, where the fact that billions of people aspire to increase their material footprints receives negligible attention compared to the high-consuming lifestyles and often rather negligible attempts at consumption alterations among the well-off in affluent societies.

Until we start asking uncomfortable questions about the limits of wealth, Wilk (2014: 332) argues, 'a sustainable consumer culture remains an oxymoron'. In a utopian world, we could have agreed to lower the consumption of the rich and raise the living standards of the poor to create a more sustainable world. In reality, dealing with overconsumption is at least as hard as dealing with underconsumption. Interestingly, there is seemingly no endpoint to how much households can consume. If we go back to the 1950s and 1960s, leading economists thought that affluent societies were reaching a limit where there was no need for new consumption. Walt Rostow's (1960) for some reason overlooked 'sixth stage of economic growth' was titled 'beyond consumption', and speculated what would happen once households had all the goods they needed, when increasing income would lose its appeal and the pursuit of material goods would no longer dominate people's lives. What would US households use money on when they already had a TV, a car and a washing machine? I raise this point because Rostow was a highly influential, leading mainstream economist who was a direct advisor to US President Lyndon B. Johnson. The thought of an economist in a similar position today posing such questions seems unlikely, to say the least. The closest we get is lofty words about a circular economy, the idea of which tends to almost

completely ignore the complexity of consumption and the efforts required to consume more sustainably (Hobson et al., 2021). Instead, consumer society has continued expanding, consumers buy more and more stuff, and circular visions at best resulting in upwards spiralling resource use (Wilhite, 2016). This cannot, I argue, be explained by a natural insatiable appetite for as much stuff as possible, nor by individuals making a wide range of very similar choices towards purchasing more things. Importantly, while I think practice theories are in a better position than most theories to explain overconsumption, a sole focus on social practices can only take us some of the way. It can help explain how higher levels of consumption are normalised through what Shove (2003: 3) has called a ‘ratcheting up of demand’. But in order to fully understand these developments, we need to take into account the political economy of capitalism within which social practice takes place. Capitalism, as a social and economic system built around economic growth for the sake of accumulation, will always favour increasing overall consumption. As Wilhite (2016: 17) argues, this in turn normalises excess as the ideology, institutions and incentives of capitalism have ‘fostered practices that over time have embodied and habituated expansive consumption’.

Conclusions

There are many and complex reasons for both underconsumption and overconsumption. Underconsumption is caused by poverty, marginalisation and inequality, often intensified by environmental hazards and climate change. Overconsumption is intrinsically linked to underconsumption. The high consumption of the rich is in many ways built on the underpaid labour of the poor, an injustice further entrenched by overconsumption being a central cause of climate change and many of the environmental hazards that hit the poor hardest. In other words, modern consumption patterns depend fundamentally on the exploitation of people and nature (Brand and Wissen, 2021).

Although much popular attention tends to be on the extraordinary and conspicuous sides of consumption, most consumption is mundane and inconspicuous. Consumption levels are fundamentally shaped by what is

considered normal, and by how and where people live their lives and how and where they acquire their stuff and access to services. It is, in short, shaped by how normality is organised (e.g. Shove, 2003). One of the profound challenges the world is facing, is that normality keeps getting increasingly resource intensive. This process takes place constantly in rich countries, enabled by growth, increasing incomes, and global capitalist production networks that allow for a seemingly never-ending access to cheap goods and labour. But perhaps even more dramatically, higher levels of consumption are increasingly normalised in a wide range of emerging economies, particularly in Asia. This chapter has used the cases of two of the fastest growing economies in the world, China and Vietnam, to discuss the complexity of consumption and argue for the importance of political economy for understanding everyday practices. By studying consumption booms in these two 'socialist market economies', I have sought to illustrate how the growth imperative of capitalism translates to an imperative for increasing consumption, forcing even conservative communists to embrace capitalist consumer society (although they may not admit to doing so).

The impact of increased affluence on consumption patterns is at the same time predictable and unpredictable. Different countries have different versions of modernity, and novelties like whole societies built around motorbikes emerge. But it is predictable in the sense that there are certain blueprints of modernity that seemingly every country follows, although with significant local variation. In this chapter, I have used supermarketisation, fast food franchises and the system of automobility as examples. Many more could be added, within all spheres of consumption. These develop through the fundamental logics of capitalism and its systems of accumulation. In turn, they form the contextual configurations within which everyday practices take place. They are part of co-shaping all elements of social practices, and in many ways influence or even dictate the moments of consumption that take place within them. Any attempt to understand and ultimately confront unsustainable consumption, thus needs to factor in capitalism. Taking capitalism seriously involves asking uncomfortable questions about growth, profit, inequality and individual ownership (see Wilhite & Hansen, 2015). In this chapter, I have suggested that studying the political economy of practices may be the way forward as consumption research hopefully re-engages with these

questions and fulfil Daniel Miller's (1995: 16) call from the early years of the field: 'the new study of consumption should lead inexorably to the direct study of capitalism'.

Notes

1. I would like to thank Ulrikke Wethal and Johannes Volden for highly constructive feedback on an earlier draft of this chapter. The title of this chapter is partly inspired by Wilhite (2008, 2016)
2. Estimates such as these obviously group together highly diverse groups of people (see Koo, 2016), but remain useful for understanding the magnitude of this second domain of what Dicken (2015) has dubbed a 'global shift' towards Asia.
3. We should keep in mind that most of the 'new Asian middle classes' are far from rich. Indeed most of them are, as Trentmann (2017: 374) has put it, 'anxious consumers on a budget'. Indeed, he argues, '[f]or most people in China, as in India and Asia more generally, being middle class does not mean going to the mall but living on the edge in a daily struggle to pay the bills for schools and hospitals' (Trentmann, 2017: 374). Nevertheless, they do contribute to significant consumption booms through their increasing purchases of consumer goods. The same goes for middle classes in China and Vietnam.
4. This section draws on Hansen (2020).

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Part II

Energy, Technology and Everyday Consumption



3

Household Energy Practices in Low-Energy Buildings: A Qualitative Study of Klosterenga Ecological Housing Cooperative

Karina Standal, Harold L. Wilhite, and Solvår Wågø

Introduction

Smart technology and home automation systems are gaining traction in people's home, policy and research.¹ The underlying assumption is that smart technologies will contribute significantly to energy efficiency, which is good for consumer wallets and the environment. Smart

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technologies are further projected to overcome the looming perils of climate, by being instrumental in transitioning to a low-carbon society. However, research has shown that the complexity of social interactions linked to the use of technology is overlooked and poorly understood (Christensen et al., 2020; Standal et al., 2019; Skjølsvold et al., 2018; Strengers, 2013). By applying social practice theory, this chapter contributes to the growing body of research that critically examines how smart technology visions for reducing energy use in buildings are implemented and practiced by the residents living in them. Drawing on longitudinal research conducted in 2012 and 2015 that examined household energy practices in the ecological building cooperative Klosterenga in Oslo, Norway, we address the following questions: What are peoples' motives for choosing an ecological profile home? How are these smart technologies integrated into the architecture, and how does it affect household practices? Does the technology work as intended? How effective is the information provided on how to use it? The implementation of smart technology visions in building design and how residents are influenced to put visions into their daily practice addressed in these questions are important given the increasing prominence of smart technology concepts and designs in energy savings research and energy policy. Klosterenga provides an interesting case to study because it has implemented an integrated energy system to optimise energy efficiency as well as a holistic ecological design (e.g. communal garden with grey-water cleaning and shared garden/horticulture). These characteristics have given Klosterenga an image of green scenery, modern design and comfort, which together with the walking distance to Oslo city centre has made Klosterenga a popular housing cooperative in old town Oslo.

The Smart Discourse and Its Critics

The transition to a low-carbon society has put an emphasis on smart technology on several scales. The latest Norwegian Energy White Paper (GoN, 2021, 2022) presents home automation systems as pivotal to ensure future energy savings and energy demand flexibility, and announce new regulations to promote such a system. In economic, engineering and

policy-making, the ideal household electricity consumption is envisaged as consumers that engage smart technology to obtain a better future (Skjølsvold et al., 2018). The expected result is consumers who are energy efficient, have flexible electricity use (reduce peak loads) or even engage in household energy production. In the emerging smart paradigm, technologies such as home automation systems, programmable thermostats and direct load control are intended to do the work for residents in achieving optimal energy use; or to put it another way, agency in accomplishing energy efficiency practices is assigned to the smart technology. But this requires ‘smart consumers’ who are informed and engaged in their energy consumption and willing and able to embrace new smart technologies and strategies to achieve energy-management goals (Korsnes & Throndsen, 2021; Strengers, 2014). In this imagined smart world, the technology is designed, built and programmed to ‘function as a means of seamlessly bringing ideals of efficiency and luxury to the home, in which technology takes care of and enhances a range of domestic practices’ (Strengers, 2013: 26). Strengers sees this as a new form of utopic technology positivism that ‘constitutes a distinctive ontology in which smart technologies perform and establish a highly rational and rationalising form of social order’ (Strengers, 2013: 2) where people are conflated to autonomous and homogeneous agents.

Strengers refers to the ideal consumer as ‘Resource Man’; a well-educated, techno-savvy male who is interested in energy and makes decisions for the entire household (ibid).² Software, hardware and utility companies try to help energy consumers become ‘energy fit’ by providing them information to become smarter, informed and more in control of their energy consumption while simultaneously allocating this control to technology to manage it on their behalf. The emphasis on smart technologies in energy policy and research as driving forces towards smart grids and a green shift indicates that this is a conscious and deliberate choice made by consumers and thus closely related to the understandings of consumers as rational individuals who respond to information and economic incentives in a predetermined way (Shove, 2010).

There are several challenges to such a perception of consumer choices and practices. Some studies find that several people are sceptical to the idea of living in a smart house and ceding control of comfort to smart

technologies (Sæle, 2021; Mennicken & Huang, 2012; Vyas & Gohn, 2012). Further, people living in smart houses often use them in ways not intended by the designers due to lack of understanding the systems (Wade, 2015; Revell & Stanton, 2014; Valocci & Juliano, 2012; Woods, 2006; Rathouse & Young, 2004) or that residents feel that the need to control the indoor environment is preferred over user instructions (Wågø & Berker, 2014; Aune, 1998, 2007). Having a solely rational economic view of the resident as consumer of energy will reduce the subtle understanding of private energy use as a part of everyday life activities and the domestication of the home. Furthermore, energy consumption is not neutral as purchasing power, preferences, needs and everyday practices and routines are differentiated across gender, age and class, life situation and geography (Standal et al., 2018; Fraune, 2015; Bell et al., 2015; Carlsson-Kanyama & Lindén, 2007), as well as social and cultural dimensions (Westskog et al., 2015). These studies indicate that the 'utopia' imagined by the promoters of smart technologies is flawed.

Theoretical Approaches to Household Energy Practices

As a critique of the dominant role of economic and psychological theories in explaining consumer behaviour as a linear and individual process defined by rational choice (e.g. Gupta et al., 2018; Shove, 2010), a large body of literature has over the last two decades explored how energy consumption and adoption of low-carbon energy technologies could be understood as dynamic social practices (Bell et al., 2015; Wilhite, 2016; Strengers, 2013; Shove et al., 2012; Warde, 2005; Shove, 2003). Social practice theory has among others been inspired by Bourdieu (1977) and his concept of habitus, defined as a domain of dispositions for action, created and perpetuated through the repeated performance of actions in a given social and cultural space. Drawing on the definition offered above, Shove et al. (2012) suggest three main elements to guide empirical investigations of practices: (1) *materials*, including the use of tools, technologies and equipment; (2) *meaning*, referring to the particular idea/image that is related to a particular

activity; and (3) *competence and skills* (learning) that are involved with an activity. Similarly, Sahakian and Wilhite (2014, see also Wilhite, 2012) point to elements of *body*, *material world* and the *social world*. The body includes cognitive processes and physical dispositions, while the social world refers to a similar understanding as *meaning*; norms, values and institutions. Sahakian and Wilhite's use of body deserves particular attention. Cognitive processes and physical dispositions are acquired by the body through social experiences, inscribed in space and over time. Repeated exercises, such as athletic training, or social learning from other practices and their performances, can transform the habitus in a durable fashion (Sahakian & Wilhite, 2014; Wilhite, 2012). This is counter-intuitive to more rational choice approaches that presuppose that all decisions are made in reflexive cognitive process. The element of material includes the concept of distributed agency (Sahakian & Wilhite, 2014; Wilhite, 2012). Materiality is not only an 'ingredient' in peoples' everyday practices, but objects and technologies have a 'scripting effect' on people's actions.³

Practices are thus characterised by the linkages that practitioners make or break between various pre-existing elements within these three categories. A change in practice accordingly involves modifying a combination of symbolic and material ingredients and of competence and knowledge (Shove et al., 2012), as well as disruption of embodied dispositions (Wallenborn & Wilhite, 2014). Practices evolve in different social fields where people have certain resources and positions and abide by common norms (Bourdieu, 1977). The formation of practices will usually depend on the integration of pre-existing elements. This can be linked to how socio-material histories define 'predispositions for subsequent actions that are embedded in bodies, practices, and material settings' (Wilhite, 2012: 62). The meaning or social context that is attached to the use of new technologies then is not necessarily unique or new but drawn from earlier practices or cultural ideas and representations. The interconnect-edness and embeddedness of practices in other social practices can make them difficult to break up or change.

By applying social practice theory to explore energy consumption as a product of the interaction between (1) the building and its technologies; (2) the experiential and cognitive knowledge of the participants; and (3) the social and cultural contexts in which the buildings and households

are immersed, this study contributes to the development of a more robust understanding of human-technology interactions that now dominates smart energy policy (and provides insights on design and information strategies that will improve the efficacy of human-technology interactions in smart buildings). A social practice framing is useful in understanding how people choose their homes; how they learn to live with the materiality and technologies present in a new home; and how energy-relevant practices develop and stabilise.

Klosterenga: The Building and Its Energy System

Klosterenga is an Ecological Housing Cooperative that stands out in its surroundings due to its facade and modern appearance in an area of old apartment buildings from early twentieth century (see Fig. 3.1).



Fig. 3.1 Klosterenga facade seen from the garden. Note: Photo by GASA Architects

Klosterenga was established as a part of a governmental-supported city planning project called Environmental old Oslo. The building was designed by GASA Architects and built as a demo project of urban ecology, focusing on consumption and managing resources (water and sun) and waste. Life cycle cost analyses were an important tool in the design phase. When completed in 2000, the most advanced element was the integrated energy design, including solar collectors for water heating, water-borne floor heating, a double window-façade and balanced ventilation. Besides the energy-related aspects, Klosterenga includes aspects of urban ecology such as optimisation of materials, indoor climate, simplified building details, water saving, reuse of ecologically cleaned water,⁴ garbage sorting and local composting and greening of outdoor areas. Architectural qualities like daylight and view were important to create a housing project that increased the architectural and aesthetical values in this neighbourhood of Oslo.

The low-energy apartment building provides 35 two-, three- or four-room apartments sized 53–100 m², all planned with a focus on ecological efforts. The floor plan can be seen in Fig. 3.2. The orientation of the floor plan was according to zoning principles. The living rooms face the south window façade, benefitting from sunlight and natural warmth, while bedrooms face the north with a natural airing brick-wall. Bathrooms constitute a heated core in the middle. Klosterenga is designed with a focus on involving residents. Heating (passive and active solar heat and electricity) and ventilation (window airing and balanced ventilation) are regulated by the residents. The double window-façade (see Fig. 3.3) works as



Fig. 3.2 Typical floor plan and section at Klosterenga. Note: Drawings by GASA Architects

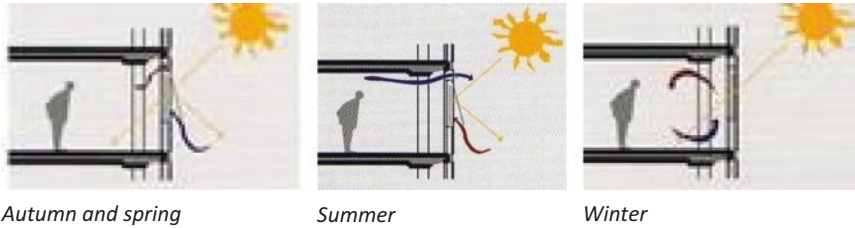


Fig. 3.3 Ventilation of double-window façade at Klosterenga. Note: Drawings by GASA Architects

natural energy-efficient ventilation that provides fresh air from the outside, which is preheated in the 35 cm layer between the sheets of glass in the double facade facing south. When needed, cold air can be admitted from the north-facing windows as described in Fig. 3.3.

Blinds between the panes of glass are meant to prevent overheating and provide a visual shelter from outside view. Windows are high and narrow to allow daylight to enter the building, a solution that also simplifies building details. Further, the residents have a display for controlling the temperature of the waterborne floor heating. The mechanical ventilation is operated through the kitchen fan and is designed as a simple, balanced ventilation system combined with local heat exchangers. Excess heat from the apartments is channelled to the underground residential parking space. In addition to engaging with the energy system of Klosterenga, residents have access to a common garden. Here, residents can socialise and get involved in composting, growing, and harvesting herbs, berries, fruit and vegetables. How residents get involved and pushed to visually and physically be in contact with the outdoors, aware of outdoor conditions and inspired to take responsibility to influence own indoor climate is an important part of the concept.

The starting point for the Klosterenga project was to build an ecological housing cooperative with a high energy efficiency standard. The aim of energy consumption for Klosterenga was set at approximately 100 kWh/m²/year, which is 50 kWh/m²/year less than the stipulated normal energy consumption for a similar building. The most important energy-saving resource is the heat exchanger in the balanced ventilation and the double window façade (Monsen, 2002). However, in 2000, the

total energy use at Klosterenga was 138 kWh/m²/year. The reasons for the underproduction in energy efficiency compared to the set targets can partly be related to malfunction in the solar collector system for water heating for a long period of time. But measurements also revealed that some apartments had extremely high electricity consumption (Monsen, 2002). The three apartments with the highest consumption add up to a third of the total consumption, with an average above 22.000 kWh/year. The average for the rest of the apartments is below 4.000 kWh.

Research Design and Methods

This chapter presents the results from two rounds of qualitative interviews and observations with residents at Klosterenga conducted in 2012 and 2015. The interview sample consisted of 18 interviews, where some families were reinterviewed (see Table 3.1). The informants were a diverse group of young couples, families with children, couples with adult

Table 3.1 Overview of informants

Informant	Description	Moved in	Interviewed
H1	Couple with small child	2009	2015, 2012
H2	Young couple	2014	2015
H3	Single woman	2006	2015, 2012
H4	Family with school children	2005	2015
H5	Family with small children	2007	2015
H6	Family with teenage children	2002	2015
H7	Family with school children	2007	2015
H8	Couple	2002	2015
H9	Couple	n/d	2015
H10	Couple	2011	2015
H11	Family with teenage children	2007	2015
H12	Family with school children	2014	2015
H13	Couple	2008	2015, 2012
H14	Young couple expecting a baby	2011	2015
H15	Single man	2010	2015, 2012
H16	Couple	2011	2015
H17	Family with two small children	2006	2012
H18	Family with two small children	2008	2012

children and singles. Though a significant part of the population in Old town Oslo are low-income and/or with immigrant background, all the informants were middle-class, many academics, and only a few were born outside Norway or had parents not originating from Norway. This reflects the resident composition of Klosterenga in general, since the modern apartments are higher priced than the average apartments in Old town Oslo.

The data material collected in March–June 2012 was part of a larger study of several efficient housing projects and was based on both in-depth interviews and observation with households (Wågø et al., 2016; Wågø & Støa, 2013). The data material collected in September 2015 complemented the 2012 study by re-interviewing 4 households, as well as interviewing new households. The 2015 study were conducted by an interdisciplinary research team (the authors) consisting of a specialist in architecture and building design, a human geographer and an anthropologist. The recruitment of the informants was done by providing information through the board and in the mailbox, and residents were contacted by the researchers by phone using the Norwegian tele-registry. The opportunity to obtain a gift card was announced to the household residents as part of the recruitment process in 2015. This was to reduce the chance that only households with a high interest in technology and energy participated. Each interview lasted about 1 hour, and the residents were invited to explain their motivation for choosing Klosterenga as their home; how living in Klosterenga influenced daily practices, leisure habits, as well as general questions concerning neighbourhood and environmental awareness. Open free conversation was encouraged. Some interviews were conducted with several family members of the household present, opening for discussion and diversity of practices. Informants were asked to demonstrate how they operated the energy system (e.g. control boxes, kitchen fan and airing practices). All interviews were recorded and transcribed. All informants in this study are anonymised and approval by Norwegian Social Science Data Services (NSD) was secured beforehand.

Choosing a Place to Call Home: Motivations for Living in Klosterenga

Choosing a place to live is a complex process dependent on many factors, including both symbolic and material dimensions, especially in Norway where it is more common than in other countries to own rather than to rent one's home. As reflected in the interview sample, Klosterenga is an attractive housing option for people of different ages and life situations. The rationale for building Klosterenga was anticipated to appeal to people's values concerning the environment. Surprisingly, however, only one resident said he and his family explicitly decided to buy their apartment for its ecological profile. He saw an advertising brochure of the project and 'thought it looked promising and were greatly tempted' (H8). He and his family were among the first residents when the complex was built in 2000. However, the majority of our informants actually did not put weight on Klosterenga's ecological profile, energy efficiency and technologies when bidding for an apartment in Klosterenga. Instead, they perceived these qualities as a bonus when manoeuvring in a challenging Oslo housing market. This view was also supported by one of the housing board members, who explained that many who moved in came with questions regarding the system, which revealed that they had not known about it when purchasing the home. The aspects of Klosterenga's ecological profile and energy system were, according to the residents interviewed, not advertised in the sale process of Klosterenga apartments, and the real estate agents had little knowledge concerning this. Traditionally, in Oslo, the main aspects of marketing homes are key factors such as price, location and standard. When profiling of the ecological benefits to customers is missing, it is also less likely that customers can weigh this in the balance when choosing a place to live. The prices of Klosterenga were higher than average in the area due to the modern standards and size. However, the apartments also have relatively high joint liabilities, which means that it is still an affordable option for those who are not able to take large housing loans with their bank.

According to most residents interviewed, the main aspects of choosing to settle in Klosterenga were the modern standard, practical size, and

affordable price, at the same time as they were centrally located in the charming scenery of Oslo old town. Klosterenga provides a rather unique possibility in the Oslo old town housing market, because it has middle-sized apartments (100 m²) and a relatively new housing standard. The old town Oslo area predominantly consists of old town houses from early twentieth century, and their history as factory worker apartments means they are usually small. Due to their age, the old town houses often need more extensive and expensive maintenance to keep the standard high. Klosterenga's distinctiveness also includes balconies, elevator and indoor car garage, which you will not find in Oslo's old town apartment buildings. The standard and layout plan of the apartments and apartment building was also often mentioned as the factor for choosing Klosterenga (though price and location were more decisive). The daylight and view in the apartments due to the large windows in the living room were highly appreciated. The location of bedrooms facing North and living-room area with large double-window façade to the South and facing the garden was mentioned as 'brilliant' (H12). Three of the interviewed residents were architects, and they would highlight the use of better and more costly architectural solutions such as extra floor to ceiling height, indoors stairwell, the double window facade and zoning principles. Several stated that they were attracted by the urban ecological mindset with a common garden where they could grow their own fruits and herbs while being so centrally located in Oslo. Some also underscored that the central location of Klosterenga made it possible for them to actively protect the environment by not using their cars in everyday life.

Three of the informants stated that moving to Klosterenga appeared in a hurry and rather arbitrary, because they were soon expecting a new arrival in the family. For them, Klosterenga provided an opportunity to live rather carefree in a very central location and with child-friendly qualities. Klosterenga is located a bit away from the road on the South side, and with a large park at the North side. The backyard is walled in and has nice greenery with berry bushes and fruit trees. Further, the size of the apartments meant that families could live there while the family was expanding with more children. It is quite common for families in the Oslo old town to move once children start school, but these informants had decided to stay even though they felt their children needed more

space to roam and to bring friends home. Two families that considered moving felt this process was strenuous as they had a deep belonging to the area and had adjusted to the comfortable standard. Opting for detached or semi-detached houses meant either serious compromise of standard and suburb location, or a very high price. For several, this compromise was seen as needed, while others hesitated to make that move:

It is funny you should ask, because we have been looking for a house [to buy]. But we keep coming back here with our tales between our legs and snuggle in the warmth, because everything is much worse than what we have here (H7).

As shown, emphasis on energy consumption and technology did not reflect the personal motivations the informants had when choosing a place to call home. Price of apartments, location, and aesthetics were not surprisingly held as most important.

Learning the System: Lack of Routines or Interest?

Klosterenga's low-energy system requires that residents interact with the energy system when adjusting temperature and ventilation of the double façade windows, the ventilation system and waterborne floor heating. These systems are designed to be simple in use but require some level of understanding and precise use to work 'optimally'. The residents (e.g. H8) who moved in when Klosterenga was newly built received a comprehensive direction manual with instructions. However, there were no standardised routines for instructing new residents. Direction manual and instructions was simply given to new owners at takeover (alongside any other relevant information).⁵ The board did not have spare manuals, nor did they organise training of new residents. When interviewed, housing board members stated that they were available for questions concerning the system for new residents, and one of the board members always encouraged newcomers to address him with questions. Still, few of our informants had approached

any of the housing board members concerning the energy systems. One of the interviewed residents had also not received the manual from the previous owner. The control box for the waterborne floor heating had been changed the previous year, and a new one-page manual was delivered along with contact information of the electrician firm responsible for the hardware and instalment. A short instruction was also given verbally by the electrician when it was installed. Some residents now kept the manual close to the control box, but as discussed later, few used the control box actively, and only one of our informants had contacted the firm with questions.

Though the design was meant to be easy to use, most of the people interviewed found the manual to be overly complicated and written in a technical language. Few consulted the manuals but sought advice from other residents when discussing problems related to the system, for instance when passing in the hallway. One of the board members had played with the idea of conducting meetings for the residents over topics related to the systems and, through that, provide more information and interest in the systems, but he was worried that the turn-out might be low and that being a board member already took up a lot of time. Further, the fluctuation of board members resulted in a lack of routines for providing such information. However, the board came regularly to deliver new filters for the balanced ventilation, and the residents were given instructions or help with this.

Generally, the informants approached the learning of the system in three ways; (1) most of the informants felt reluctant to 'tamper' with the systems and saw the automatisisation as the main benefit as it did not require time and skills. The same group of informants also did not actively use the systems as intended, as explained in the next section, (2) some felt a need for more information and wanted the housing board to take a more active and systematic role to fill this need, (3) and last few had a genuine interest and prior knowledge of the technology. These informants took pride in living with such an innovative system, and they had a good overview of the manuals and different operation modes and even found it intriguing to open the ventilator with friends to 'check it out'.

Using the System: Everyday Life in Klosterenga

The informants at Klosterenga emphasised the benefits of Klosterenga's low-energy system in terms of comfort and automatisisation. These aspects might explain why Klosterenga has not reached its anticipated potential in low-energy consumption. The design of the double-façade windows in the living room areas was first and foremost viewed as attractive as they provided abundance of sunlight and view. Their function as energy-efficient temperature regulators was viewed as less important. Using the double-façade windows optimally requires knowledge into how the system works (see Fig. 3.3). However, most residents interviewed were unsure of how to use it optimally and chose to air via the balcony door:

we don't use that wall [double-façade windows] for airing at all. We open the [balcony] door (Interview H7).

Actually, the way it is, is that in summer you should open many windows on the outside so the air is circulated, but I am a bit careless there. So when I air out, I have the balcony door open from morning till bedtime (H13).

Several complained over how the window facade resulted in extreme heat during sunny summer days, especially if they were not travelling in the summer holiday. For most informants, fresh air was synonymous with life quality (or even good health), making balanced ventilation inadequate. Furthermore, the practices of airing varied between individuals and households. Many wanted fresh air coming in continually (especially during the night) keeping certain windows or the balcony door open most of the time all year round. In one of the apartments heavy double set of curtains and decorations even made airing via the façade windows impossible.

The kitchen ventilator used to control the balanced ventilation of the apartments was the part of the system that our informants were most unsatisfied with. Several complained of the noise it was making and that it did not work properly. The ventilator was perceived as outdated in technology, design and function. Quite a few had also had the need for

maintenance or changing of parts. Further, some apartments had problems with the ventilator capacity when cooking, making the fire alarm go off. The fire alarm is located on the ground floor, resulting in hectic running to turn it off before the fire department would be notified. As a result, residents of these apartments would always keep the kitchen window open during cooking. Another problem was for residents that had or wished to redecorate their kitchens as they would have to comply with the ventilation system. In practice, this meant that you had to keep the old ventilator as a new one would cost more than a new kitchen in itself. In addition, the location of the ventilator hood could not be moved, making rearrangements to the kitchen difficult. As a result, there was word of neighbours who had replaced the ventilator with new ones that by-passed the original system.

Indoor temperature was also associated with comfort and life quality. Most residents stated that they kept an indoor temperature of 19–21 degrees (Celsius), though several preferred up to 25 degrees, and most kept maximum temperature in the bathroom. Studies in European context have shown that a high indoor temperature of 23–24 degrees has become a general norm suited to most indoor habits (Exner & Mahlknecht, 2012), but there are notable gender differences where women prefer higher temperatures than men (Carlsson-Kanyama & Lindén, 2007). The heating system was operated through the control box for the waterborne floor heating, which had the possibility for regulating the temperature, holiday mode (turned off for a set time), and turning off. The view of the control box design and functionality ranged from ‘fair enough’ to outdated and difficult. Most residents did not regulate the temperatures because the system was not very flexible, and adjustments took up to 24 hours to take effect. Furthermore, several had been warned by the board against regulating it as this could disrupt the system:

We have been told not to touch it. I mean it has come from the board that it is best not to so and they come on regular controls from the board to check... and we have been obedient. So now and then if it has become really hot I have fiddled with it and tried to adjust it, but I don't think it has much effect so I have opened the [balcony] door instead (Interview H5).

As a result, most residents never turned the heat down if it was warm, but simply aired through the balcony to adjust the temperature. Further, very few turned the heating off when going away for holidays or weekends.

The informants' practices concerning regulating ventilation and indoor temperature partly relate to their perception and meaning attributed to electricity consumption. Although many expressed environmental reasons as important for reducing energy use, few took measures to reduce electricity use. Most of the informants legitimised not reducing energy consumption in the fact that they were already living in a low-energy house stating that there would be no significant savings from changing energy use habits and that the energy was produced in an environmentally friendly way. Indeed, our informants perceived that the main benefit of the system was that one could live relatively carefree with a good conscience as opposed to owners of large and old villas that required high energy consumption to keep warm.

I probably use more energy than I should. But I feel that I have well insulated windows and such, so it is not certain that it is too much heating in use anyway. I don't know ... but it is very nice to walk around in shorts indoor in the winter. ... Also, you do not get a guilty consciousness for heating up, because that is the challenge with waterborne floor heating, it takes 24 hrs. to change the temperature (Interview H15).

For several, this has led to a change of being less conscious about energy consumption after moving to Klosterenga.

I: In your previous apartment did you adjust the temperature down when you were away?

R: Maybe not during the day. ... I travel a lot and can be away for a week...and then I turned off the heat...

I: So you had a habit of thinking about it?

R: Yes yes ... but here you never pay so it is really a very stupid system (Interview H11).

These households had earlier had routines of turning off the heat when going away for weekends or holidays, and some had lived abroad and always kept the temperature to a comfort minimum to reduce heating

costs. In these cases, the building's energy design had facilitated new domestic practices that increased indoor temperatures and less involvement in their energy consumption from the residents.

Further, several of our informants felt that both their own electricity costs at Klosterenga and the electricity prices in Norway, in general, were so low that there were no economic incentives for reducing consumption. Most of our informants did not keep track of their energy use and energy costs and paid electricity bills through automated bank systems. Compared to others, they express satisfaction with having quite low electricity bills:

[electricity bill] is somewhere between 600-800NOK ... and we appreciate that. ... A friend of mine lived just across the street in an old town house and in winter they could have [electricity bills] 7000-8000NOK in a quarter of a year (Interview H16).

As an example, some of the residents did not think it worthwhile to go down to the fuse box in the basement to make the monthly reading of consumption and therefore the electricity company would send a bill based on calculations of general household consumption (often much higher than consumption in apartments such as Klosterenga).⁶ One informant only read the metre as part of a yearly ritual (just before the television broadcasting of the New Year's concert in Vienna), while another had even lost the key for the cabinet years before. However, keeping track of energy costs was also complicated by the fact that energy costs for warm water and heating were included in the shared costs (as they often are in housing cooperatives), which were billed in the monthly rent: 'It is very convenient... we don't have to think about the electricity bill, it is 800 NOK 4 times a year so that is nothing' (Interview H16). Hence, any reduction in shorter showers or indoor temperature would not result in lowering the rent. Only electricity use for light, computers, entertainment, etc. was paid individually by the owners in their electricity bills, and there was a general impression that any reduction here would be miniscule in terms of saving money.

In contrast to Klosterenga's design to engage the residents in using the energy system, most of the informants expressed that it was very

convenient that the system worked without them actively having to make decisions and changes. For them, the main benefit was not having to focus on their energy costs and habits.

Changed by Experience: 'This Home Has Taught Me to be Environmentally Friendly'

During the time of the study, the board had planned for starting individual calculation of heating and warm water consumption. The motive for the board was to ensure 'that people will have more consciousness around their own consumption, we think that it might contribute to that those who use warm water uncritically reflect on this for instance' (Interview H13). This initiative was started by one of the previous board members out of her environmental engagement. Most residents were either positive or neutral towards the decision and hoped this would result in residents trying harder to reduce energy consumption. Only one informant expressed concern that individual calculation would increase the cost of the residents at the first floor significantly and would feel unfair to them.

Though most of the interviewees did not feel motivated to reduce their energy consumption from electricity or heating, some of the residents felt that living there had made them more environmentally friendly. They had reduced their use of private cars since they lived centrally, but also out of concern for the environment:

To be honest, we were not so environmentally conscious. But this apartment taught us to be environmentally conscious. By living in an ecological apartment, one manages to change culture or behaviour. Meaning that one is more aware about this and that—for instance we don't use the car (Interview H4).

Yes, because we practically never drive the car when we are here. We use the car when we drive to the cabin in Sweden. And we try at least to think about how this is not good for the environment (H5).

Some also had changed their food consumption towards more vegetarian and ecological eating and a higher consciousness concerning reducing

overall consumption to reduce climate emissions. In general, several emphasised how living in Klosterenga was inspiring in several ways, which made them reflect more on the environment:

I will not claim being very environmentally engaged, but we are both children of the 1970s. We grew up with environmentally engaged parents, and I think moving to Klosterenga have made me even more conscious because our living environments with the garden, the compost and garbage sorting and the bike rack reminds us of environmental issues. The fact that these housing brings along some luxury; floor heating, spaciousness, lots of daylight through the double facade and the central location.... it implies qualities! (Interview H1, 2012)

Discussion: Reproducing and Reinforcing High Energy Habits Through Smart Technology

The thrust in smart energy solutions where economically rational consumers will seek out and deploy energy-efficient houses and technologies because they will save money or protect the environment is not found in the case of Klosterenga. Rather, people emphasised the architectural qualities of large windows providing daylight and view to the green scenery, and the modern characteristics that provide everyday comfort and convenience. The practice of choosing a home (for most of the interviewed) entailed a link to socio-material histories where predispositions for particular material settings and the meaning attached to these emerge. Klosterenga was seen as a 'good home' since it provided modern material standards, which fit into narratives of a good life (see also Shove, 2003). Such narratives relate not only to symbolic meanings and material aspects, but also embodied dispositions such as high indoor temperature, abundance of daylight and air.

It is fruitful to point to how social practice can identify aspects that strengthen or reduce the intentions of the smart and low-energy design in buildings. Ecological housing and energy systems such as Klosterenga have potential for changing practices. The experience of influence, control and fulfilled expectations (regarding reduced energy bills), together

with experienced wellbeing, will support an overall feeling of being satisfied with the new housing. Domestication of new technology is by Aune (1992) and Sørensen (2006) described as a two-way process where residents and houses get mutually shaped (Berker, 2006). This is also supported in the concept of distributed agency, where materiality has a 'scripting effect' on people's practices (Sahakian & Wilhite, 2014; Wilhite, 2012; Shove et al., 2012). However, the materiality of the Klosterenga design has not considered how, in the course of their lives, people have developed routines for acquiring what they want from energy (energy services) in their homes: i.e., thermal comfort, light, cleanliness (bodies and things) and entertainment (Wilhite, 2016; Shove, 2010). All of these have roots in shared Norwegian cultural practices as well as embodied knowledge grounded in lived experience in 'non-smart' houses. These practices are linked to people's preferences for a warm atmosphere, as well as visual and sensory contact with the outdoors through fresh air directly from the outside (Wilhite, 2016; Wågø & Berker, 2014). Further, the materiality of the energy system at Klosterenga enables an opportunity to reproduce and strengthen the prevalence of these cultural values, while simultaneously provide technology to modify the practices in such a way that it requires minimum interaction and consciousness when using the energy services. In other words, residents could keep warm and use as much energy as they like without worrying about costs to their economy or the environment. Further, they valued the system because they could disengage from their own energy consumption. In an ideal setting, transferring responsibility for optimal energy use to smart technologies that require only minimal intervention on the part of the users themselves should ensure that energy is used efficiently resulting in an overall reduced energy consumption. But in the case of Klosterenga, most of our informants interacted with the system in a manner that degrade the energy performance. This tendency has also been found in other studies (Wågø & Berker, 2014; Wågø & Støa, 2013; Exner & Mahlknecht, 2012).

The materiality of the energy system reinforces the stability of cultural and embodied practices as they actively diffuse other values such as reducing energy consumption for the sake of the environment and costs of high consumption. Hence, the practices have gradually led to higher indoor temperature and airing practices that are not in line with the aims of energy

efficiency of the system. Further, practices that take on social significance, such as within the family setting, can reinforce their strength. It is worth mentioning that the design of the system fails to take into account elements of care work within families, as exemplified in how the fans often could not cope with cooking fumes or airing routines to provide a good indoor environment in accordance with perceptions of fresh air as important for family health and wellbeing. This ‘unproductive’ work in the home (often done by women) is often overlooked in smart system design (Strengers, 2014) but constitutes an important part of a family’s energy practices and the meaning given to such practices. For the present study, this approach has been useful in understanding wellbeing as a result of the experience of being in control of the indoor environment, thermal conditions, and energy use and for the feeling of home (Thomsen et al., 2011).

Another important aspect that was overlooked in the energy system of Klosterenga is the importance of competence in establishing energy practices. The assumption is that a smart design does not require any special skills or convictions on the part of the residents. But as shown, most of the residents felt that the system and manuals for it were too complicated for them (or would be too time-consuming to learn). According to Exner, teaching the residents the purpose and use of the system is the most cost-efficient way to avoid use that is detrimental to the energy performance of the system. Several studies have shown, however, that implementing and using new energy technologies require considerable know-how and interest, which can be excluded based on differences of gender, education, social networks, and financial resources (Inderberg et al., 2020; Standal et al., 2019; Bell et al., 2015).

Conclusions

Today’s societies are characterised by an acceleration of consumption and high-energy habits such as individualised transport (private car), increasingly larger homes, high indoor temperatures, and rapid exchange of consumer articles (Wilhite, 2016). Energy consumption is a product of cultural, bodily and material dimensions and competence and know-how. As shown in the above analysis, the architectural design and

ecological concept of Klosterenga were attractive to many types of residents, but the energy-efficient system was not considered when they bought an apartment. In fact, several did not even know about it until they moved in. Further, routines of passing on knowledge to new residents and keeping it fresh in the minds of the residents living there for long was almost non-existent. The ecological building design was also valued by the residents as the architectural and energy principles provide them with abundance of sunlight, modern standard, warmth, and good indoor and outdoor environments. This design also influenced the residents' practices in several ways; some reduced their use of private cars significantly; some were inspired to be more conscious in consumption of food and other goods. But also, quite notably, most of our informants had acquired new practices where they kept a higher indoor temperature, and were more passive towards their energy consumption (airing continuously, not reducing or turning off their heating when possible, etc.). Furthermore, most of the informants were reluctant to actively use the energy system because they felt that it was complicated, non-flexible, and they saw no point in trying to reduce their energy consumption (for cost reduction or the environment). Rather, our informants appreciated the system because it provided them the opportunity for comfort and good life in an environmentally friendly way. A successful low-carbon transformation thus cannot rely on technological innovation alone but needs to go 'deeper' to understand how a change in consumption require a change in several dimensions; symbolic, material and competence. All of which are associated with different social fields and relations. As exemplified in the Klosterenga case, innovative energy systems can promote disinterest, disengagement, and overconsumption of energy, as well as positive spill-over effects on changing other consumption patterns.

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Notes

1. Hal Wilhite participated in several interviews leading up to this chapter and he led the writing on the section addressing the smart discourse and its critics. Further, he contributed to the paper as a whole in its early stages. He did not have the opportunity to review the final version of the manuscript.
2. According to Strengers, Resource Man is also closely related to Rational Man (*Homo economicus*), Tool Man (*Homo faber*), Choice Man (*Homo optionis*) and Social Man (*Homo sociologicus*), which makes him particularly apt to understanding and using new technologies to influence his energy consumption the way he please and share this with others in ways that enhance his use of the technologies further.
3. Theorisation of the material world as agentive has been incorporated in social science, such as Social Science of Technology (SST). See also the works of Madeleine Akrich and Annemarie Mol.
4. Klosterenga has collection and utilization of rainwater for outdoor use. Grey water is locally cleaned as part of the outdoor areas. Klosterenga is the first project in urban Oslo that has its own water-cleaning plant for grey water.
5. Generally, in Norway old owners are obliged to provide information about the home during the formal takeover. This takes place in the home when the full payment is received, and keys are handed over.
6. Power companies usually required monthly reporting of consumption, before the national roll-out of smart meters in 2019.

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4

Solar Water Heating: Informing Decarbonization Policy by Listening to the Users

Mithra Moezzi, Harold Wilhite, Loren Lutzenhiser,
and Françoise Bartiaux

Introduction¹

Governments planning to decarbonize energy systems count not only on transforming energy supply but also on changing what technologies are used in daily life, not just by the eager but by tens of millions of users. The research approaches needed to gain sufficient understanding of these

¹Passages in this chapter were written by Hal Wilhite as notes over the course of the research project. These notes were repurposed for this chapter. Hal conducted many of the interviews. He did not have the opportunity to review or add to the manuscript.

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users and uses to translate their real-world messiness to successful decarbonization policy planning are underdeveloped. This chapter reports on a humanizing element of a technology research project that was undertaken to inform a state energy agency on the prospects for expanding the use of solar thermal water heating in California homes. Currently, solar thermal water heating is used by fewer than 0.5% of households in the state, despite favourable environmental conditions and the popularity (14% of homes) of rooftop photovoltaic (PV) systems (CEC, 2021).¹

Solar water heating is essentially an old technology, common for decades in some areas of the world, with active attention to increasing its use in others (Weiss & Spök-Dür, 2021). The common explanation for the disinterest in California is that natural gas in the state is inexpensive and highly predominant: 87% of homes use natural gas for water heating, and largely for space heating and cooking as well (CEC, 2021). In theory, using solar thermal in combination with natural gas can reduce 70%–90% of a household's water heating natural gas use in many locales. But with solar water heating systems often costing \$8000 or more, even this slashing of fuel use rarely creates a very compelling financial decision under usual cost-effectiveness models.

California ran an incentive programme (2010–2020) to encourage adoption of solar water heaters in the state. Toward the middle of this programme, the California state energy agency funded us to help figure out how well existing solar water heaters were working and determine reasonable next steps to increase the technology's presence if doing so seemed like a good step. The larger study (Moezzi et al., 2019) funded by the agency aimed to produce a broad sociotechnical analysis of solar

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water heating in California, particularly to integrate insights about users and their experience with information on technical performance, the supply chain and its prospects, and evolving policies and general circumstances. One component of this research was interviewing solar water heater users. These interviews are the subject of this chapter.

We begin with a summary of the research background for the study, followed by a concise history of solar water heating in California and analysis of the interviews. The conclusion considers the role of such interviews in US energy technology policy.

Research Background

There has been much published research on the technical aspects of solar water heating and on its prospective performance, but little on the experiences of solar water heating users. One exception is a study of Australian households who used solar water heaters (Gill et al., 2015): it found that these households often lacked basic understanding of how these systems worked and were ill-prepared to take particular advantage of the solar portion by timing hot water use to coincide well with when solar-heated water was most available. Giglio and Lamberts (2016) examined relationships between household behaviour and solar water heating system efficiency for low-income households in Brazil (Giglio & Lamberts, 2016), also finding low levels of understanding of the technical system and clear dependencies between system performance and user behaviour. Ornetzeder and Rohrer (2006) examined a user-led self-build solar water heater movement in Austria, tracing how these users improved the technology in turn leading to a strong commercial solar water heating market in the country. A few others have focused on the diffusion of solar water heaters, such as on socio-demographic profiles of solar water heater adopters (e.g. Sharma, 2021) and on the technology's social acceptability. The latter concept is borrowed from psychology (for a conceptual framework, see Huijts et al., 2012) adapted to renewable energy technologies by Wüstenhagen et al. (2007). Haque et al. (2021) add sociological factors, such as social capital, perceptions of normality, and types of governance, to explain the social acceptance of innovative technology (namely,

solar water heating) by low-income urban dwellers in Mumbai and Cape Town.

In American policy-focused energy research, strong rationalistic representations of energy users are ported in from a long-standing dominance of engineering and economic paradigms, and a rooting of policy in a utility-regulatory context (Lutzenhiser, 2014). These dominated energy efficiency research for decades. With the shift on energy technology policy to a focus on climate change rather than efficiency itself, there has been some easing of this view, leaving more research space to examine how people use and experience technologies, and how this translates *in reality*, versus models and idealized expectations, to policy goals and societal effects. The potential value of better relating consumption research to effective policy recommendations has long been underlined, including by the authors of this chapter (e.g., Wilk & Wilhite, 1985; Lutzenhiser, 1993, 2014; Wilhite & Lutzenhiser, 1999, 2010, 2020; Shove, 2003, 2010; Moezzi & Bartiaux, 2007; Wilhite, 2008, 2016; Strengers, 2011; Bartiaux et al., 2016; Moezzi et al., 2017; Moezzi & Lutzenhiser, 2020).

To accomplish this, we need improved methods of multidisciplinary energy research, better coordination with what policymaking and research funders take away from research they fund or otherwise encounter, and recognition that applied research differs from, but is not inferior to, normal academic theorizing on consumption. There is still much left to do. In the US context, ethnographic interviewing of technology users about their uses, experiences, understandings, and conversations to inform policymaking is still rare; Wilk and Wilhite (1985) is one of the few examples. And what users say to neighbours, kin, and other acquaintances about the technologies they use is a major process for horizontal social diffusion of an innovation (Lazarsfeld et al., 1944; Katz & Lazarsfeld, 2006 [1955]; Rogers, 1995), but can also be often overlooked in policy studies framed as an issue of “individual adoption”.

In Europe and Australia, social practice theories (Schatzki, 1996; Reckwitz, 2002; Warde, 2005) inspired many empirical studies on energy consumption.² These theories put practices on the front stage and consider them the unit of analysis. Academic research then extended to practices using water or energy (Shove, 2003) instead of focusing on perceptions or adoption of new technology. Topics studied include

heating practices (e.g. Gram-Hanssen, 2011; Sahakian et al., 2020), cooling practices (Hitchings & Lee, 2008; Wilhite, 2009), standby consumption in households (Gram-Hanssen, 2010), energy retrofits of homes (e.g. Bartiaux et al., 2014), laundry practices (e.g. Hess et al., 2018), and even practices of rescheduling appliance use in the process of PV panels appropriation (Winther et al., 2018).

Solar Water Heating in California's Past

Histories, though rarely invoked in applied research on energy technologies, can be a valuable source for “identifying often-overlooked considerations among practitioners who propose and implement energy policies” (Hirsh & Jones, 2014). We briefly cover the history of solar water heating in California. This history suggests that extending the reach of solar water heating systems is likely to be met with stiff competition. Solar hot water installations spiked in California in three periods: (1) early twentieth century; (2) 1970s and 1980s, and (3) 2010–2020.

The first solar water heaters in California were marketed at the turn of the twentieth century, simultaneously with early household electrification (Butti & Perlin, 1980). These simple systems competed with existing labour-intensive, dirty, and expensive methods of water heating using wood, coal, or manufactured gas. At the time, nobody expected abundant hot water in the home. Thus, the technology offered a substantial modernization toward higher levels of comfort, convenience, and cleanliness in the home.

These early systems encountered troubles. A rare freeze in Pasadena, a cradle of solar water heating at the time, destroyed many systems, bringing doubts about the viability of technology and stress for the new industry. The incident also underscored the lesson that, even in temperate California, solar water heaters risk early failure if not designed or operated to reduce freeze damage. The industry innovated and somewhat recovered. Meanwhile, the energy landscape continued to transform. By 1921, 87% of California homes had electricity. But it may have been commercial interests in creating customers for the vast natural gas resources in the state and elsewhere in the western US that most dimmed

the prospects of solar water heating. By the early 1940s, the market for solar thermal water heaters in California had nearly disappeared (Butti & Perlin, 1980). Research on solar thermal technology continued intermittently. While some countries, notably Israel (Berenbaum & Datta, 2020), eventually achieved widespread use of solar water heaters, there was little apparent interest in doing so in the US for decades hence.

The 1970s energy crisis brought renewed attention to developing American energy independence, and this merged with a growing environmental movement. Solar communities were built. President Carter installed solar water heating panels on the White House roof in 1979, predicting that solar water heaters would be commonplace by the year 2000. Governments provided incentives for solar water heaters and consumer informational pamphlets, including advice for “do-it-yourself” (DIY) systems. Seizing the opportunity, many companies jumped into the business of installing solar water heaters. The boom lasted only a few years. As Reagan took office, energy policy turned away from solar, removing federal incentives in 1982 and decommissioning the White House systems. The country appeared to re-embrace fossil fuels.

This 1980s experience left California familiar with solar water heating. Some companies from the 1980s were still in the solar water heating business during our study, and some systems installed in the 1980s were still in use, even fondly regarded by their owners. But according to industry experts we interviewed as part of the larger research project, the predominant legacy of the 1980s solar experience was negative. Our informants spoke of inexperienced, short-lived, and sometimes intentionally dishonest companies that had installed systems that never worked well, damaged the home, or failed quickly. Even for systems that had worked well, with the market decimated virtually overnight, it became very difficult to find affordable expertise or parts for repair to maintain.

From 2010 until 2021, the California Solar Initiative Thermal (CSI-T) programme provided incentives to encourage households to install solar water heating. A major goal of this programme was tapping the tremendous technical potential for reducing natural gas use by substituting solar thermal energy and supporting the market for future success. The programme was carefully designed to help guard against repeating the problems seen in the 1980s programmes. And incentivized systems

had to include a backup fuel. In contrast to the 1980s incarnation, there was little attention to DIY or simple systems even while some solar water heater proponents advocated this approach (Weingarten, 2016). The CSI-T Program covered a variety of solar thermal end uses, though our study concerns only single-family solar thermal water heaters with natural gas backup. Uptake was fairly slow, but sped up especially when the incentive amounts were boosted for low-income households. Under CSI-T, 8347 single-family natural gas backup systems were installed. This was much faster than the previous pace of solar water heating installation, but much fewer than originally envisioned or hoped for in the program.

Insights from Interviews

This section summarizes results from the interviews. Because people often communicate their everyday experiences in stories and examples, we include excerpts to share the logics and details these narratives communicate. To find solar water heater users to talk with, we used public satellite images, building permit data, professional peer networks, contacts provided by a solar water heating company, and recruitment from two 1980s solar communities. Fifteen interviews were completed, all in 2018, nine of which were at the interviewee's home. On-site interviews lasted 60 to 90 minutes, usually with one interviewee but sometimes with a couple. Most interviewees were in their 50s or older, and many remembered solar water heating from the 1980s.

Buying

Interviewees we spoke to had acquired their systems in a variety of ways: some bought a system under the CSI-T incentive programme, while others had bought theirs earlier, two even in the 1980s. Some who purchased incentivized systems paid over \$4000 net, while others qualified as low income and had paid little or nothing.

Almost all the non-low-income households interviewed said they were motivated to install solar water heating by environmental concerns,

especially aversion to fossil fuel extraction and use. One interviewee was strongly against fracking:

I want to minimize my use of natural gas because I abhor fracking ... which I think is very bad to the environment; it's desecration of the land.

Fracking is rare in California; the distaste expressed here seemed more an ethical rejection of the gas industry rather than an expectation of direct effects.

Many reported having completed other energy-saving home projects. Those who paid for their systems often described careful reasoning behind their decision. Households that had paid thousands of dollars for their systems knew that as a financial investment, installing solar water heating pays back slowly in terms of saved fuel costs—20 to 30 years even under ideal assumptions—but they were willing to overlook this for environmental benefits. Nobody wanted to represent their purchase as financially stupid, but it seemed satisfactory to expect it to pay back over the system lifetime. These households were willing to lay out capital now to reduce future monthly costs, including the near-zero natural gas bills during parts of the year and the satisfaction this achievement brought. Others accepted the solar water system because it was essentially free, or because it was a bargain even though the net cost was more than a conventional replacement.

Many of the non-low-income households had already installed rooftop photovoltaic (PV) systems and were looking to get closer to all-solar energy for their home. But others explained that PV did not make sense for their situation. One man said that as his family lived in a mild climate and did not use air conditioning, their electricity costs were too low to motivate or justify PV. They also did not heat their home much, so increasing the efficiency of their natural gas furnace would scarcely save energy. Instead, solar water heating seemed the best way to reduce fossil fuel use and at less than half the price of PV.

Some said they preferred to green their electricity use by taking the low-carbon option from their utility and focus their direct technology investments on reducing natural gas use. Several voiced distrust of the PV industry and annoyance at common sales tactics for what was described

as relentless calls, exaggerated claims, and a lack of interest and expertise in customizing systems.

A few mentioned that solar water heating first appealed to them as a way to take advantage of the sunlight that fell on their property. For example, a Central Valley interviewee said: “It’s hotter than blazes here. There’s so much sunlight. We gotta do something”. In rural Sweden, an owner of a micro wind turbine has the same willingness to use the resources of his surroundings: “Since I have my own land with extensive access to wind and sun, then, to me, it seems sensible to produce my own electricity. It’s sort of like catching your own fish or growing your own potatoes. I find that awesome! It would make me more self-sufficient” (Tengvard & Palm, 2009: 1710).

The rural households we interviewed expressed interest in self-sufficiency and independence from grid-delivered energy. One mentioned that if their power went out, it could be out for a few days, versus the historically quick restoration expected in urbanized areas. In fact, most solar water heating systems in California depend on the centralized electricity grid to pump water. Still, in providing hot water that is relatively independent of natural gas and electricity, and often an extra reservoir of water as well, solar water heating systems fit into a self-sufficiency mindset.

Saving

Interviewers talked to households about how much they thought they were saving with their solar water heater. Many indicated that even if they wanted to estimate actual financial savings, it would take effort to do. For PV, utilities usually provide quantitative information on solar generation and how it translates to savings. There is no such provision for solar water heating. Household estimates of how much fuel or money they saved with their solar water heater were usually impressionistic, though some had done actual calculations based on utility bills—by comparing summer natural gas bills with solar water heating to those before they installed the system. Perhaps more than savings per se, low bills were a compelling reward. Households spoke with pleasure about monthly natural gas bills

of a few dollars during the summer, paying only the connection fee and perhaps minor costs for cooking and clothes drying. One interviewee who also had PV said:

I like not getting an energy bill. You know that when you're saving 30 dollars a month on average the math just doesn't work, because you have to live in the house so many years to recover the repair costs.

One rural household said they installed the solar hot water system specifically to save on their water heating bills, which they said were high due to a small business on the property. Others mentioned that it would reduce worry in using hot water as liberally as they wanted. Most interviewees did not think they had high natural gas bills prior to installing their solar water heating system, whether because of conservative practices, small households, or the low cost of natural gas.

I did do a fair amount of research on that and how much we would have. But frankly natural gas is dirt cheap. I don't think this system would even pay for itself. Our natural gas bill in the summer was like \$10 to \$15 a month for in the summer, for stove and hot water, and maybe \$20 a month in the winter... We had to move our water heater, so we thought, for a few thousand dollars extra we can get water from the sun, so I guess it was more about the principal than the economics. ...It was a bad investment...not because I'm disappointed with the system at all, but having a natural gas water heater is better...from an economics point of view.

The explanations and stories from interviewees show the varied pathways, thought processes, and actions that we would expect from humans.

Learning About the System

Many of the non-low-income households interviewed had someone in the household with either a technical education, technical job or hands-on experience, and knowledge about home projects and maintenance—including a real estate agent, a water industry engineer, and someone who had done a study unit on solar water heaters in high school decades

earlier. Those who had used highly experienced installers were satisfied with the explanations of how things worked. Good conversations with technology-savvy company staff during the decision and installation process may be quite influential in shaping how households use and understand their systems (Gill et al., 2015).

Only two of those who had questions about how the system worked said that they had attempted to read the technical manual provided with the system; most said they hadn't looked at it. User interfaces for the solar water heaters were not necessarily self-evident:

This panel thing with LEDs... I've never really looked at that or taken the time to understand what's going on there. And there is a like a big fat booklet of how to understand these things, but I've never touched it.

One who did consult a manual had inherited a 1980s system in a planned solar community where they were common. She got the manual from her neighbour:

The manual was useful because the control box was very confusing. You know there was a whole control system and then there was the pump and the tank, and when I first moved in it was just weird because the pipes were all on the side of the house and it sounded like a waterfall going through the wall. ... I mean we were talking 1982 so it wasn't real sophisticated. So yeah I felt better having the manual.

It is even possible to have a solar water heating system and not know if the solar portion is working well or at all, since the backup natural gas system would still deliver hot water. One interviewee said that even the maintenance person she called in couldn't tell. Some households may hardly ever look at their bills, especially if they are on autopayment. Those who do look may be hard-pressed to explain cost variation from month to month. In fact, even a well-executed sensor-based performance measurement study might not give satisfactory answers (Moezzi et al., 2019).

A few interviewed households understood their systems quite well. But for many households, understanding the system and adjusting to it is not

intuitive or easy, as has been seen in other studies. For example, Australian households who tried to adjust their usage toward optimizing the efficiency of the system were the least satisfied with their solar water heating systems (Gill et al., 2015). The authors attribute this to lack of knowledge in how to adjust their usage, lack of clear feedback to facilitate these adjustments, and the strain and costs of having to adjust usage patterns.

Finding Installers and Repair Services

Solar water heating installers are concentrated geographically; some of the households we spoke to said it was difficult to find contractors reasonably nearby who could give competing bids for installing a system. Several also said that installers did not return phone calls or the contractor never showed up for an appointment. Even during the 10-year course of the incentive program, many contractors left the solar water heating business.

There seemed to be a notable difference in maintenance and repair issues between older and newer systems. The older systems included bigger tanks on the roof, which causes stress on the roof and potentially serious damage if there were a leak. Households with older systems said it was difficult to find contractors who were willing to help. Some of these older systems also required a fair amount of maintenance, such as draining and refilling the system once a year, or monitoring to avoid freezing problems. After enduring one or more failures, we heard, people gave up. One interviewee said:

I wish all homes were built with solar and then there would be businesses in every community that would service those things, just like there's people that repair furnaces and stuff. ... There's no reason why the furnace people couldn't be trained to repair solar.

While most people let the installer decide what type of system (of the many available options) to install, some did the research and knew what they wanted:

I love the system and I did get my passive system. You can go for the smart systems but ... they're more complicated and they're less reliable. I just love the simplicity of this system. There's nothing to break.

The latter quote points to an important dynamic in prospects for expanded solar water heating: the efforts to make “smarter” appliances with more advanced technology seem to promise more efficient operation and a better user experience. But—at least until these advances are perfected—this gives more opportunity for failure and requires skilled professionals to repair, sometimes on repeat, in turn increasing hassle and costs. The complexity distances the technology from the user, whereas the most positive experiences with solar water heating may come from households that have the capacity and interest in interacting with them (see, e.g., Ornetzeder & Rohracher, 2006).

The CSI-T programme specified detailed requirements for systems to qualify for the incentive. Working within these parameters, one installer designed a general configuration of a tankless (on-demand) backup system with two collector options that exactly met the incentive level for the low-income programme (\$4388, half the cost of the systems predominantly installed early in the programme), leaving no financial costs to the system owner. The contractor, a late entrant to the solar water heating industry, installed 52% of all the single-family water heating systems in the programme, predominately in one of these two configurations, clustered in a few zip codes, and in the last few years of the 11-year program. The second-most prolific installer accounted for only 7% of programme installations. Incentives thus were presumably very influential in bringing in this new entrant, and in turn to what technical configurations were installed. How these systems perform may have major implications for solar water heating's reputation, but this performance has not yet been studied.

Beyond energy savings and environmental interests, some interviewees said that they were partly motivated to install a solar water heater in order to create more space in their home, such as moving the hot water tank from their kitchen to the roof. Some older solar water heating systems had huge tanks with a reputation of being clunky and ugly:

[The older systems] took up, if you took a car and you put it on its end. So it was vertical instead of horizontal then the tank was about the size of a compact car. They were huge. And so when those things would leak the water would go all over your garage. The drywall would get wet so they'd have to replace the drywall.

Talking with Others

Rooftop PV installation has been shown to have a contagion effect, with visibility among neighbours and peers encouraging higher rates of installation (Irwin, 2021). For example, around 2010, in Belgium, PV panels “appear to be an asset for displaying higher economic and symbolic capital” whereas at the same time, in Portugal, they “are seen as smart gadgets and as a source of prestige only among small groups of well-informed people”. (Bartiaux et al., 2016: 417, 420). Solar water heating seems to generate less discussion. Most of those we talked to did not seem interested in demonstrating their environmental credentials or technological adventurousism to neighbours and were content with having their system out of sight—sometimes preferring it that way, given that solar water heating systems seem to have had a widespread reputation (rooted in history) of being ugly and clunky, as noted above; some mentioned that the looks of the system and its effects on the home's curb appeal had been a matter of family debates.

While some interviewees said that their neighbours were interested in their solar water heating system when it was first installed, that interest tailed off and the system sparked no further discussion or interest. In California's energy transition planning, rooftop PV looms large as a key element of smart grid where household “prosumers” generate and sometimes store electricity for the grid. Solar thermal water heating has no such role. One interviewee described how he did try to talk up his solar water heater but failed to get traction:

I tend to try ... evangelize a bit on all this stuff, but I find that my neighbours are fairly old in general, and they seem to have very little interest in this at all. Either they don't understand solar or they are put off by the pitches from various local solar companies mainly putting in PV systems in.

If hot water is ever a topic of conversation, one interviewee noted, environmentally concerned people he talked to asked about on-demand water heating, not solar energy.

Water Practices

We analysed two types of interrelated practices among solar water heating owners: monitoring practices, and daily hot water use. Monitoring the solar contribution to the hot water consumed is difficult because of the coordination between the water inflow from the solar hot water system and the gas backup system. Should the solar not produce, the backup kicks in, and which energy source is being used is invisible to users. However, some households said they experienced hot water surges on hot days, or lower hot water temperatures in the winter or on cloudy days. One interviewee said that they have a metre on the solar storage tank that they read every week, and a switch to turn the backup tank heating off if they believe there is ample sun. This monitoring practice is made possible by these devices and by expertise and engagement of the owners.

Even for PV, research that compares practices before and after solar installations are rare. For PV, Palm et al. (2018) note that the results of these few studies are mixed. In their own research with PV prosumers in Sweden, they found big variations across households but no general behavioural change, with households explaining that they thought the benefits of shifting their electricity load were minimal.

Most of the California households we interviewed did not immediately report changing their hot water practices much after installing or moving into a house with solar hot water. With the interviewer's empathic listening, however, answers were sometimes qualified:

Interviewer: Have you, would you say that it's changed having that solar thermal hot water, has it changed the way you use hot water in the house?

Interviewee: No, I wouldn't say... No, I just treat it as it is effectively reducing the gas bill when it's working. So, I can have as long a shower as I like.

In one case, to keep the roof panels from overheating, a household increased its hot water use by washing white laundry at high temperature. Others took advantage of the “free” hot water, including the fact that there was more of it due to the storage added when converting to solar hot water (e.g., increasing from 30 to 90 gallons, in one household’s case).

In the summer, you have plentiful hot water, and you use more of it. So there’s a benefit that doesn’t even show up in the break-even analysis that we weren’t aware of... We didn’t realize that we would have so much hot water in the summer and that you would actually change the way you behave.

So the virtually endless hot water, heated for free, could be a big if unexpected perk. The free heating also eased worries about the cost of using as much hot water as one wanted:

Now I’m not afraid to use hot water. Especially because my mother is 97 and I have to wash the sheets and everything often. ... Now I just use hot water and everything is fine.

In these cases, solar water heaters have “the potential to script behaviour” and to change daily practices, as shown for air conditioning in the U.S. South (Wilhite, 2008: 128). The changed behaviours in response to a sense of cost-free hot water made possible are interesting in terms of water use as well, especially since California increasingly finds itself under drought conditions.³

Solar water heater users have been classified as “passive” or “active” (Gill et al., 2015). Some of the most technically oriented owners were active users, often timing their use of hot water to correspond to times when there was a high solar portion of hot water, even switching the auxiliary tank off when they knew it was not needed:

Our goal was to use the hot water in the evenings like shower in the evening because you can pretty much guarantee that there’d be hot water at that time. In the morning it was less sure. But as long as the backup is working there’s generally hot water available.

The possibility of changing practices to complement the solar water heater is interesting for several reasons: it not only changes the efficiency of the water heating system, but also orients users toward coordinating with a natural rhythm—as also noted for PV panels in Norway by Winther et al. (2018)—contra the “anytime” invitation of modern fossil-fuel based energy. This touches on an important point about technological devices and users—technologies are not “used” in a singular way. Although always constrained by technical designs, “use” is also very much a process in which devices are made intelligible by users in terms of their capacities and understandings (Reckwitz, 2002), and by their needs, wants, and ethics as they see them (Hackett & Lutzenhiser, 1985). It is not surprising, then, that “conservation” may under some circumstances mean using more “free” hot water for new uses because it would otherwise be wasting it.

Overall Recommendations from Interviewees

We asked interviewees for what they would recommend to California policymakers in regard to supporting solar water heating. Virtually all who had installed a solar water heating system under the incentive programme emphasized the importance of programme incentives to their own purchase and said these would be necessary if policy aims to increase solar water heating adoption. Some mentioned their internet searches on solar water heating and gave summaries echoing those views, indicating how powerful well-written blogs and non-government information can be. Others regretted the difficulty in tracking the benefits of the solar hot water system, noting that there was no easy way to estimate how much of their hot water was heated by the sun. Another emphasized that relative to PV, there has been hardly little marketing or customer profiling of solar hot water users. Instead, the technology may retain its 1980s association with alternative energy aficionados and with a disappointingly short run. So there is need, the interviewee suggested, to rehabilitate solar water heating’s reputation if it were to achieve wider acceptance in the present.

Despite the reservations outlined above and a nearly unanimous sense that at full cost, the systems were not very cost-effective, many interviewees took pleasure in their system and often its role in homemaking and in providing true environmental benefits:

It makes you feel a little bit more environmentally friendly. (...) I think it's kind of cool to have solar power on my roof. (...) it just makes me feel a little bit more house proud (...). People want Solar, people want to feel better about themselves, especially in a way that's quite public. It's like, it's like "look at me." Like it adds benefits in that way. And I think people, especially in the [su]burbs want to have that.

Technical Conclusions

These interviews, in combination with other data gathered in the project, led us to conclude that there were favourable niches where solar water heaters may fit quite nicely, such as households in rural areas, those with high hot water needs, and those interested in solar beyond money savings. But it is hardly easy to target such niches.

Beyond the question of potential adoption levels, there is the question of whether California climate policy should bother with solar water heating: how much fossil fuel use do they displace? The answer depends on usage patterns, the technology, its installation, and how system performance evolves over time. Our provisional conclusion in the larger study, based on available data, is that solar water heaters in California usually work, but often less well and sometimes much less well than the ideals of 70%–90% displacement (Moezzi et al., 2019). Actual savings depend on multiple factors, including the actual quality of the installation and on hot water draw patterns, that is, on the distribution and volume of hot water use throughout the day, which is often quite different than those historically assumed in water heating efficiency models (Lutz et al., 2011; Maguire et al., 2013). In short, it is possible that solar water heaters in California could displace a great deal of natural gas use, but it is also possible that their performance is considerably lower than modelled ideals.

Versus the experience of technological improvements in Austria (Ornetzeder & Rohrer, 2006), the California industry has not visibly achieved a perfectly suited system. One can envision, however, revitalized engineering research to produce affordable, easily integrated solar water heating systems with a more modern aesthetic, resilient features, less need for customization, and easier to repair, all of which are different goals than perfecting theoretical efficiency. These could be designed in coordination with social science research on user practices and wishes, including for example, the aforementioned interest in measuring natural gas savings.

While these directions might have merit, in the meantime, the policy and technology landscape of California has pivoted in a way that again puts solar thermal water heating in disfavor. Municipalities continue to ban new natural gas hook-ups, and the state plans to eliminate most fossil fuel use, whether for direct use or to generate electricity, by 2045. Solar thermal water heating with natural gas backup, as studied here, does not fit with this view, especially with the 30-year expected lifetime of these systems. It perpetuates natural gas use, clashing with policy directions. In addition, the networked aspect of PV in an interactive grid, where electricity generated is at least potentially sold rather than wasted, is also far more aligned with the planned future energy system. For solar water heating, in contrast, the heating provided is wasted if not used by the household.

Research Conclusions

Academic research on energy consumption aims to improve theorizing about the dynamics of consumption. The goal of this project was not to contribute directly to that enterprise, but rather to bring the benefits of some of this theorizing closer to the problems of policy. To concretely achieve this, there were multiple challenges to overcome, including matching the outputs of consumption research to what policymaking is able to process.

The interview results sketched above spotlight households rather than technical devices in isolation. They induce a number of small stories that

can be woven into how the landscape of solar water heating and prospective development are seen. For example, we learned that rural households had different representations than more urban users of what solar water heating is about, how little curiosity solar water heating owners experienced from their neighbours, why solar thermal water heating is sometimes much more attractive than rooftop PV, how owners thought about energy savings, the appeal of endless hot water, and how the limited supply of skilled professionals impedes choosing solar water heating.

The results of these interviews are modest, in that they do not provide traditional “aha!” moments and are not easily responded to by crafting technological, policy, or marketing changes. But they do provide counterpoint to default assumptions about why people do what they do. By disrupting the concept of average households doing average things for average reasons, the interviews illustrate the variety of projects involving solar water heating systems, the diversity of opinions thereon, and the range of benefits these systems provide, including psychological and emotional ones. And while from a social science perspective these ideas are second nature, in the technology policy world, they are not. When technological solutionism predominates, people tend to be seen in caricature, as consumers whose main purpose is to buy the correct technology. The best value of alternative stories such as those told by interviewees may be their potential to contribute to changing the ways that climate policymaking sees people, where the patterns and relationships represented in the experiences they relate become useful pieces of the puzzle in forging a better energy system on the ground.

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Notes

1. Statistical data are from CEC (2021) as reported in the 2019 Residential Appliance Saturation Study Reporting Center (https://webtools.dnv.com/CA_RASS/).
2. While we applied practice theory in our research and the discussions below, we centre our vocabulary on technologies and users to retain a natural vocabulary as suited for reporting applied research.
3. Most households pay for water by volume, but the rates can be quite low.

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5

Sufficiency in China's Energy Provision: A Service Understanding of Sustainable Consumption and Production

Marius Korsnes

Introduction

China is a significant energy consumer and greenhouse gas emitter. As the world's largest primary energy consumer, China stood for almost one-quarter of the global primary energy consumption in 2019, twice the EU's (BP, 2020). Around 40 per cent of all Chinese emissions and 11 per cent of global CO₂ emissions come from Chinese coal power plants alone (Alva & Li, 2018). China's power sector has contributed to more than 45 per cent of China's total historical carbon emissions (Zhang et al., 2020b). The economic turnaround experienced in China since 1978 has increased incomes and the national gross domestic product in part through actively embracing consumerism, to the extent that we can talk about a type of 'consumer socialism' (see Hansen, 2020, this volume). Decades of environmental exploitation and widespread pollution of air, soil and water have

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accompanied the development process (Shapiro, 2012). Finding approaches to reduce the anthropogenic impact on global climate change and resource use is a real struggle. A burgeoning amount of research links this challenge with the pervasive and elusive dominance of capitalism and economic growth (e.g. Kallis et al., 2020; Wilhite, 2016), and there is growing consent that economic growth cannot be sustained long-term within planetary biophysical boundaries (see Hickel, 2020; Jackson, 2017; Raworth, 2017). Seventeen years ago, Wilhite and Norgard (2004: 991) argued that it is 'neither ethical nor even practical to argue for restrictions in overall energy growth in these [China and India] and other developing countries'. This chapter studies China's electricity demand and attempts to assess whether this point still holds today. Such an analysis is perhaps even more important after the results of the COP26 climate summit in Glasgow, where China, India and other countries remained adamant that poor countries have a comparatively low responsibility for climate mitigation. The argument made by Wilhite and Norgard (2004) was that the rich countries of the world should mainly take responsibility to reduce emissions and energy use. Developing countries such as China and India should be allowed to continue their increased energy consumption since the energy growth experienced was mainly related to 'the development of basic services and infrastructure for homes, businesses, transport, health and public services' (Wilhite & Norgard, 2004). In other words, two tenets will be addressed in this chapter: (1) is energy growth in China mainly about developing basic services and infrastructures? Furthermore, (2) is it ethical or practical to argue for restrictions in energy growth in China?

The working hypothesis of this chapter is that the main point made by Wilhite and Norgard (2004) still is valid: we need to change from efficiency thinking to *sufficiency* thinking, that is, the possibility of having *enough* of something for a particular purpose (see Darby & Fawcett, 2018), and the onus should still be on the affluent population of the world. Nevertheless, despite having a communist party at the helm, China can be called a 'socialist market economy' (Hansen et al., 2020), implying that it organises its economy according to market-based and government-guided principles and acts as a growth engine for global capitalist endeavours (e.g. Curran & Tyfield, 2020).¹ The Chinese government has been relatively successful in reducing poverty in China since 1978, and the lives of millions of poor

people have been greatly improved as a result of Xi Jinping's poverty reduction policies (Bikales, 2021). Still, inequality has grown alongside economic development in the past 40 years (Kanbur & Zhang, 2005). Although inequality today appears to be plateauing (Kanbur et al., 2021), it is still considerable. Income inequality levels in China used to be similar to the Nordic countries, but they are now getting closer to US levels (Piketty et al., 2019). In 2015, the top 10 per cent of China's population received 41 per cent of the total national income, compared to 27 per cent in 1978 (ibid.). In comparison, the bottom 50 per cent share of the population only had a 15 per cent share of incomes in 2015, down from 27 per cent in 1978 (ibid.). Although income as a metric does not give the whole picture, this inequality hints at a set of challenges connected to economic growth experienced worldwide. It is related to waste, excess and overconsumption by a small group of people at the expense of a large majority of the population. As pointed out by Wilhite (2016: 24), 'life in capitalist societies is immersed in an interlocking set of narratives, materialities and incentives that has embedded the seeds of growth and accumulation in many of the practices of everyday lives'. In other words, by looking at electricity services in China, the idea of this chapter is to identify constructions of growth and accumulation that go beyond what is considered necessary for a good life—however difficult that may be to define—and start a discussion that opens up for alternative practices fitting within an environmentally safe space (Raworth, 2017).

This chapter qualitatively explores China's current development path by presenting a social science analysis of electricity consumption and energy services. The analysis will not encompass the whole energy sector but will look mainly at the services that electricity provides domestically in an urban Chinese context. Seeing needs and demand as socially constructed and developed over time through a variety of influences (see, e.g. Rinkinen et al., 2020), the chapter analyses and assesses the services provided by electricity. Understanding service rather than input and output or supply and demand is increasingly popular in the academic and the policy world. For instance, with the increase of popularity of the sharing economy, the focus on need and ownership is central: people do not need a drill; they need a hole; they do not need a car; they need to get from A to B. Recent research focussing on mobility as a service (MaaS) is a good example of this (see, e.g. Wong

et al., 2020). Inspired by notions such as the ‘negawatt’ and the idea that people do not consume kilowatt-hours but ‘services such as hot showers, cold beer, lit rooms’ (Lovins, 1990: 21), social science scholars such as Wilhite, Shove and Lutzenhiser started focussing on the role of services instead of the energy consumed (e.g. Wilhite et al., 2000). The gist of the argument was that efficiency efforts focus too much, e.g. on how a room can be heated more efficiently per square metre, ignoring what the energy is for (keeping bodies warm), leading to higher indoor temperature or more rooms heated. In other words, needs are socially constructed, making the ‘upper boundaries’ of their supply fuzzy—are we talking about needs, wants or luxuries? (Wilhite et al., 2000). Such questions require a perspective considering broader concerns, such as how habits and routines have evolved over time (*ibid.*). For this reason, this chapter looks at services as part of domestic everyday life habits and routines. Embedded in all of this is the fact that ‘policies and processes of production, provision and consumption are saturated with incentives, infrastructures, and technologies that are designed for high and increasing energy use’ (Wilhite, 2016: 88). Thus, looking at services is not enough to suggest changes—we also need to understand the broader context that took part in the co-production of those needs in the first place (Wilhite et al., 2000).

At this point, it might be clarifying to look briefly at China’s energy status. In 2019, coal, gas, oil and biomass fuelled 69 per cent of China’s electricity mix (chinaenergyportal.org, 2020). Hydropower made up 18 per cent of the electricity mix, and solar and wind together about 8.6 per cent (*ibid.*). In only 10 years, China’s electricity consumption has doubled (Zhang et al., 2020c), and during the same period, the proportion of renewable energy in the mix has only increased (Korsnes, 2020a). Since coal is readily available and due to concentrated coal-centred efforts since 1949, China is heavily reliant on coal as its primary fuel to produce electricity (Smil, 2004). China has about 13 per cent of global coal reserves, and the reserves are diminishing quickly (Yi-chong, 2017: 30). The so-called reserves to production ratio, showing the remaining amount of the resource measured in time, is only 35 years for coal (*ibid.*). About 70 per cent of all electricity is consumed by China’s large industry sector, although growth rates currently are higher in the service sector (Zhang et al., 2017). Nevertheless, although most coal is used for electricity generation, ‘coal use

in the residential sector is also one of the top sources of air pollutant emissions due to direct combustion' (Zhang et al., 2020a: 1). Given that both emissions and electricity can be associated with China's industry sector, emissions are not only connected to domestic consumption but also exports. As Weber et al. (2008) calculated, about one-third of China's total emissions were connected to producing goods exported internationally.

The case of China accentuates the challenge that it is to provide essential services to 1.4 billion people sustainably, safely and healthily. China's electricity consumption has increased rapidly with substantial government support, as providing electricity to the Chinese people is high on the agenda of the Chinese Communist Party (see, e.g. Korsnes, 2020a). The bulk of social science research on sustainability and China has focussed on what happens on the production or the supply-side of the equation, with emphasis on issues such as innovation (e.g. Steinfeld, 2010; Tyfield, 2017), new-to-the-world products (e.g. Breznitz & Murphree, 2011) and renewable energy (e.g. Korsnes, 2020a). Although such a focus admittedly is exciting and important, social science research on sustainability that is taking a deeper look at how demand has been constituted appears to be scarce (Liu et al., 2016). This chapter aims to provide such a perspective, and the chapter is organised as follows. The following section provides more detail on understanding services and the social construction of demand as analytical concepts used here. Then, Sect. "Sustainable Consumption in China" discusses some overarching matters of concern regarding research on sustainable consumption in China. Section "Household Electricity Consumption" delves deeper into China's domestic electricity consumption. Lastly, the chapter concludes with a discussion of how—if at all—it can be argued that electricity consumption can or should be reduced in China today and in the future.

Services and the Social Construction of Demand

Wilhite and Norgard (2004) point out that a way to look at how consumption can be reduced is to study the *services* that energy or natural resources provide (Wilhite & Norgard, 2004). As already alluded to,

energy, for instance, provides light, heating, or cooling. Instead of focussing on technological efficiency, which unwittingly tends to expand our levels of comfort and convenience, a focus on services forces the question of what is needed and for what purpose (Wilhite et al., 2000). As an example, take a modern-day fridge, which is more energy-efficient. However, it is also bigger, often ending up using the same amount of energy as an older and smaller but less efficient one. Although efficiency has increased, one should stop and ask why the fridge has grown and what types of chain reaction this could lead to (e.g. increased food waste). Reasons the fridge increased in size are not only because some engineers decided it but are connected to broader questions of urban food supply such as shopping habits (e.g. frequency, online, malls) and associated concepts of freshness and safety (Rinkinen et al., 2019). Failing to question the idea of desired services in the first place leads to a reproduction of increased energy and resource-intensive ways of life (Shove, 2003). A focus on services can help to probe reductions in material and energy use without compromising life quality and well-being. Such a focus implies asking tough questions that involve negotiations between comfort and constraint. To be sure, such tough questions are not up to me as an author to answer—and it indeed is not the intention of this chapter to argue that those who already have little should continue to have little. Instead, since perspectives that move away from economic growth and always having more of something are lacking, this chapter is an academic exercise that starts poking and prodding into the social constructions of demand itself. Focusing on services is a concrete way to begin such an endeavour. In other words, ‘having little’ and ‘having enough’ are socially defined sizes that are not necessary or inevitable—human needs change and are collectively moulded, and as research has shown time and again, they could be less energy and resource intense, without compromising life quality (e.g. Guillen-Royo, 2015; Hickel, 2020).

Another reason to argue for a more nuanced policy approach is that a single measure alone will not be enough to keep impacts of energy systems within planetary boundaries (e.g. Springmann et al., 2018). Policy to address reduced environmental impacts has traditionally been

focussing on efficiency, optimised technologies and supply-side measures. For instance, the general policy recommendation in China is to improve the energy efficiency of particular household appliances and technological processes (Andrews-Speed & Ma, 2016). Such approaches fail to recognise how supply and demand are connected and that commodity chains and daily life mutually shape each other through an interconnected flow of materials, knowledges and discourses (Leslie & Reimer, 1999).

Looking at electricity, it is clear that a focus on efficiency and the supply-side still has some merit. For instance, in developing China's solar PV and wind industries, there has been a need to balance the need for industry creation and with avoiding energy and resource waste (Korsnes, 2020a). Calculations show that the solar PV industry only recently has started contributing positively to the climate: 'Despite the negative environmental effect of the PV industry in the initial stages (due to the heavily export-oriented strategy), stimulation of the domestic market resulted in effective CO₂ reduction in the most recent stage' (Shubbak, 2019: 1010). Problems of excess capacity have not only been found in the renewable energy industries but appear to be a more general element in China's technological catching-up strategy (Rock & Toman, 2015). In 2014, the overcapacity in Chinese iron and steel industries alone corresponded to the total iron and steel capacity in Europe (Rock & Toman, 2015: 250). Another example is also telling; in 2018, one-fifth of all homes in China were empty, equalling 50 million apartments (Bloomberg.com, 2018). They were largely empty because of housing speculation in second and third homes that are used very little or not at all (ibid.). Given that the construction sector in China has been found to have 'the largest impact on water-energy-food uses' (Deng et al., 2020: 9), China's real estate market is entirely out of touch with present-day demand. Much of the overcapacity problem appears to be related to so-called 'zombie firms', i.e. 'firms that would go bankrupt due to poor earnings but survive with external support from governments or financial sector' (Shen & Chen, 2017). Such examples mean that the energy supply sector can still improve. However, they also imply that demand—as co-produced by the government, the industry and originating from people—plays a central but underestimated role.

Sustainable Consumption in China

We humans have for a long time made use of natural surroundings not only for our survival but also for increased comfort. We have planted vegetables, built shelters and ensured tempered bodies. Human and animal muscles have supplied kinetic energy, while wood and crop residues supplied energy for heating and cooking (Smil, 2004). During the nineteenth century, water and wind—and soon after, coal and oil—started making a difference in mechanical energy (ibid.). The changes that followed the Industrial Revolution transformed energy conversion and the types of services that became necessary and considered ‘basic’ needs for humans. With the contemporary situation as a point of departure, this section looks at already existing literature on consumption and sustainability in China.

The only literature review on China with a perspective where services and social practices are taken into account appears to be the work done by Liu et al. (2016). They first provide their understanding of sustainability, similar to the one deployed here, and then review the literature on food, household energy and transport. The research they reviewed on household energy consumption in China covered both supply-side and demand-side perspectives, but the bulk of the research reviewed looked at the characteristics of household energy use by employing econometric analysis, census data, or surveys. As they point out, such studies helped understand the bigger picture but left internal dynamics of domestic energy consumption, instead, in the dark. For this reason, Liu, Oosterveer and Spaargaren (2016: 18) conclude that a combined analysis is necessary, looking, for instance, at ‘how to interpret the interconnections between household energy (resources and technologies) provision and household energy consumption practices’. A common denominator for the research they reviewed was that ‘individualist economic perspective[s]’ typically were employed (Liu et al., 2016: 17).

A more recent literature review on sustainable consumption in China was conducted by Shao (2019). They reviewed 121 Chinese language articles and analysed the quest for sustainable consumption with the backdrop of developing a circular economy. The results were divided into

four categories: policies and regulations, the green awareness of consumers, the circular economy, and barriers. As these four categories indicate, the study acknowledges that not all change is relegated solely to changed consumer behaviour. Nevertheless, the study does not go into detail to show how change could be achieved. This is most clear when barriers to achieving sustainable consumption behaviour are discussed, as these are mainly presented in a table, which lists regulatory barriers as the most significant barriers, followed by technical barriers, then market and finance and lastly; 'cultural barriers, information obstacles, and lack of city- and regional level practices' (Shao, 2019: 1513). It remains relatively unclear how these barriers have originated in the first place and how regulatory or technical barriers impact, shape, and interrelate with cultural barriers. Given that until recently, the Chinese government has wanted, encouraged and worked very hard to shape consumption behaviours that have a higher energy use, it is not surprising that government regulations that intended to achieve higher consumption now can be seen as barriers to sustainable consumption. As an example of this, the Chinese government has subsidised electricity prices for residential, industrial, agricultural and commercial consumers since 1978 to stimulate demand—electricity being in many ways synonymous with economic development (Pu et al., 2020). On average, but varying between provinces in China, electricity prices for households have been lower than for industry and commercial sectors (Korsnes, 2020a).

In a more in-depth study looking at how Chinese people interpret sustainability, Liu et al. (2019a) found that the leading interest for the interviewees was to ensure that future generations could live well. Another critical aspect that was reported was to promote personal *suzhi*, which roughly translates into English as 'quality' (Anagnost, 2004), but more broadly refers to 'the physical and mental condition of people, their personal ability and cultivation' (Liu et al., 2019a: 1190). The concept of *suzhi* is closely associated with the idea of a middle class, which defines what could be called a 'high' quality or character of people, implying that they have high *suzhi* (Curran & Tyfield, 2020). Those with high *suzhi* typically have a 'university education, good manners, a white-collar job and an urban residence' (Goodman & Chen, 2013: 70). Although high *suzhi* also is associated with some form of moderation and restraint (Liu

et al., 2019a), it is clear that those with high *suzhi* correspond to groups that through their middle class status have a higher level of consumption than unemployed, or uneducated, rural migrants (Goodman & Chen, 2013). Liu et al. (2019a) point out that the level of *suzhi* can be raised through education.

Nevertheless, a focus on ‘high’ and ‘low’ levels of *suzhi* can generate new and unexpected forms of inequality in China relating to what is simultaneously considered high *suzhi* and distanced from the poor and ‘uncultured’ (Curran & Tyfield, 2020). The way this would pan out in terms of sustainability would then depend entirely on what ‘high’ and ‘low’ *suzhi* means and its implication for who can take part in and mobilise such a status. For example, a recent case study of urban Nanjing looked into sustainable consumption practices and found that reducing consumption and waste was considered sustainable (Liu et al., 2019b). Values of frugality and saving (the virtue of *qinjian jieyue*, i.e. ‘being diligent and thrifty’) were found to be central, and particularly avoiding food waste appeared to be a recurring topic. Still, practices of reduced consumption and waste were competing with, even undermined by, the idea of *mianzi* (i.e. maintaining ‘face’, personal self-esteem) and the practice of *guanxi* (interpersonal connections) (ibid.). Since these norms are central to Chinese customs, it was found that they could lead to significantly wasteful behaviours. An example of food waste was highlighted, where one interviewee described a situation: ‘if you order a lot of food when you dine out or go out with friends. And you can’t finish it, but you want to save face, so you won’t wrap it up and take it away’ (ibid.: 1314). What is more, green behaviour was found to be associated with health, which in turn implied that green consumption was necessary in order to be protected ‘from [an] unhealthy food climate rather than caring for the products’ environmental performance’ (Liu et al., 2019b: 1320).

Social science research on domestic energy consumption in China focuses heavily on attitudes and behaviour compared to routines, habits and everyday life. For instance, Andrews-Speed and Ma (2016: 24) point out that current policy suggestions to improve energy efficiency in China are too technical and should instead concentrate on behavioural aspects. Their study reviews literature showing that “environmental concern and energy-saving consciousness can shape energy-saving and other ‘green’

behaviours” in China (p. 27), and they find that ‘the obstacles to changing behaviour included a general unwillingness to sacrifice comfort, the inconvenience in trying to purchase better appliances, a lack of trust in key actors, and a lack of knowledge about how to save energy’ (p. 36). Their overall conclusion is that improved information at local levels could be beneficial in increased energy saving in China. Although such information may prove effective in and of itself, it might be too narrow to only consider attitudes, behaviours and choices as variables relating to energy saving (see Shove, 2010). The problem is that focusing only on individual behaviour ignores the ways in which energy use has a history and is embedded in a large variety of habits, routines, aspirations and material arrangements that have co-evolved over time. In order to understand what can change, it is necessary to ask wider questions about socio-temporal organisation and what energy is for in the first place. This would go hand in hand with an understanding of urbanisation itself, work-life balance, mobility regimes and concepts of comfort and convenience.

To summarise, a look at the literature on sustainable consumption in China reveals that much focus has been on individualist and market-centred perspectives and policies. The studies that have gone into more detail have shown important aspects connected to the meanings associated with more sustainable consumption, such as mobilising and negotiating concepts of high status and focussing on behaviour and choices. The following section looks at household electricity consumption with a view to understand better services and demand.

Household Electricity Consumption

Since the Chinese Communist Party came to power in 1949, there has been a staggering change in how most people dwell in China. Until the end of the 1980s, there was a housing shortage due to inadequate government investments in the housing sector—rapid industrialisation was the main priority (Lee, 1988). In 1979, the rural living area per capita was 22.5 m², and the corresponding urban figure was 26.1 m² (Wang et al., 2020). Since the reform and opening up in 1978, investments in housing had increased drastically, and by 2016, the average rural living area per

capita had increased to 45.8 m² and to 36.6 m² in cities (ibid). Wall and ceiling insulation and insulated windows remain uncommon, with one survey showing that about one-third of households have installed double-glazed windows (Zheng et al., 2014). Increases in electricity demand have been driven both by industrial production and increases in domestic electricity use, and after 1978, household electricity use increased, particularly due to an increased usage of electric appliances (Smil, 2004). Before Deng Xiaoping, it was very uncommon with refrigerators, and cooking (and heating in the north of China) was done with highly inefficient coal, wood, or straw-fired stoves (ibid.). Today, more than 80 per cent of the households live in apartment buildings with less than 6 floors, and per 100 households, there are 89 refrigerators, 91 washing machines, 120 televisions and 89 computers (Zheng et al., 2014: 128). The typical apartment has a private kitchen and a toilet (Zhang et al., 2020a). Appliance penetration in urban China is similar to 'rich' countries such as the US. For instance, only 82 per cent of homes have washing machines in the US because communal washing facilities are still common. In urban China, the corresponding percentage is 81.8 (Rao & Min, 2018). When it comes to mobile phones, 93 per cent of US homes have them, compared to 100 per cent of homes in China (ibid.).

In existing research on domestic energy consumption in China, higher income levels have typically been associated with higher household energy use and GHG emissions (Feng et al., 2011). Wang et al. (2011: 3550) looked at the potential for electricity saving for Beijing residents and found that 'economic benefits, policy and social norms, and past experience may have a positive correlation with household electricity-saving behaviour, while the discomfort caused by electricity-saving activities, may exert a negative effect on it'. Another analysis using big data concluded that household energy could be reduced by introducing people to 'the relationship between their energy use and carbon emissions (or climate change), providing more specific information about their energy consumption, as well as encouraging them to replace with more efficient appliances.' (Zhou & Yang, 2016). A survey conducted by Niu et al. (2016) found that income, diversity of electrical appliances, and household size were the main factors that influenced residential electricity consumption. A more recent example points out that not only energy prices

and incomes but also household and building characteristics impact domestic energy consumption (Zhang et al., 2020a). An interesting contrast to some of these studies is the comparative analysis made by Hori et al. (2013: 361), who compared five Asian cities and found that 'energy-saving behavior is associated with social interaction'. Social interactions, such as willingness to participate in the community and returning favours to neighbours, were associated with lower energy use. In other words, those who were more socially reserved appeared to have a higher energy use. Although still somewhat superficially, the research summarised here shows that a wide variety of factors impact energy consumption. Energy use is socially and culturally embedded, and what is considered 'high' or 'low', or 'wasteful' and 'energy saving' is highly context-dependent.

Residential energy consumption represented about 11 per cent of China's total energy use in 2012 (Zhou & Yang, 2016). Electricity accounted for 15 per cent of the total household energy supply, and it was used for a variety of purposes, such as appliances and light, cooking, cooling, and heating water (Zheng et al., 2014: 131). Firewood was used for cooking and heating, and solar was mainly used for water heating (ibid.). As noted by Zheng et al. (2014: 134), a striking difference between China and other countries was the amount of energy used for cooking: 'Chinese households use a larger share of energy for cooking, accounting for 23 percent of household energy consumption versus 6 percent to nearly zero percent in other countries'. The difference was explained in two ways: one, energy used for cooking was high because the energy for other purposes was used more frugally, and two: 'living within the rich culinary culture of China, families form strong taste preferences and put relatively more time into cooking—hence using relatively more energy.' (ibid.: 134). In other words, cultural variability and the importance of certain domestic practices will explain some differences in energy use. A recent study looking at energy poverty from a Chinese point of view found that almost one-fifth of Chinese households can be considered 'energy-poor', and '46% of the energy-poor houses are in short of modern energy consumption and are sensitive to tariffs, with a level of electricity consumption lower than the basic demand' (Lin & Wang, 2020: 1). Energy-poor households were primarily located in central and western areas of China, where urbanisation and economic development

are lower (*ibid.*). With an increasingly urbanised population, domestic practices become more streamlined—and strongly shaped by material environments such as the availability of shopping malls, supermarkets, ordering take-away food, as well as domestic technologies such as vacuum cleaners, fridge-freezers and microwave ovens (see Korsnes & Liu, 2021). This will, in turn, contribute to increasingly materially and energy-intense domestic practices, which all are changing along with understandings of what it means to have a good life.

In the spirit of Hal Wilhite (2009), a brief look at space cooling is instructive. Space cooling through air conditioners (AC) is a relatively novel comfort technology that has taken hold over the mid-twentieth century (Wilhite, 2008). China today produces about 70 per cent of all AC units globally and covers about 22 per cent of the world's installed cooling capacity (IEA, 2019). Globally, the demand for space cooling has grown fastest in China in the past 20 years (*ibid.*). Ten per cent of China's total electricity growth since 2010 has been associated with the usage of ACs, and in 2017 space cooling made up 17 per cent of peak electricity loads (*ibid.*). In 2016, per 100 urban households, there were 124 AC sets, compared to 81 in 2005 (UNFCCC, 2018). Around 60 per cent of Chinese households today own ACs. As income levels and urbanisation rates increase—or as I would rather put it, as understandings of comfort escalate are reproduced and normalised—this number is expected to reach 85 per cent by 2030 (IEA, 2019). The growth of AC internationally is not necessarily connected to a need that people suddenly experience (Wilhite, 2009). Instead, it has been co-constructed over time with a range of actors, including the 'built environment (materials and designs), which in turn have been favoured by powerful commercial actors, including the energy industry, the construction industry and even the banking industry' (Wilhite, 2009: 85). A recent study by de Feijter and van Vliet (2021) shows that the Chinese government supports retrofits and energy-saving but that a range of mismatches with householders' practices make them unfit. One telling example was a householder in the city of Mianyang, who said: 'I need to use more air-conditioning in the Summer which is costly [...] my apartment has become only hotter since the trees in the public space have been removed during the retrofit' (de Feijter & van Vliet, 2021: 11). It is also easy to understand that people prefer AC

to natural ventilation given the high air pollution in many Chinese cities, which cause people to stay inside as a form of air pollution avoidance (referred to as 'inverted quarantine') (Liu et al., 2021). One could still ask why ACs and space cooling have become so fashionable in China in the past years. Since China has been a prominent actor in manufacturing AC units, the Chinese government is to some extent bound to have supported its use domestically, for instance, in constructing a large number of copy-paste high-rise apartment buildings that do not allow for passive cooling opportunities. In short, they have a built-in need for active cooling in the summer, which strongly shapes the types of cooling strategies available. This leads to a ratcheting up of material and energy-intensive practices that are interconnected in a wide array of ways, as alluded to above.

Discussion and Conclusions

There has recently been much talk about 'prosumers' within the energy world, an idea that typically involves decentralised renewable energy, that is, a rooftop solar PV panel, where electricity is used locally or sold to the grid (see e.g. Korsnes, 2017). I spent 3 years searching for the Chinese prosumer (and I never found them—for various reasons, see Korsnes, 2020a). China is today world-leading in installing decentralised rooftop and ground-mounted PV systems that generated a valuable added income to the families that had them and undoubtedly has had a positive effect on energy poverty reduction in rural parts of China (Geall & Shen, 2018; Korsnes, 2020b). Finding ways to gauge the multiple ways in which consumption and production are interconnected provides a better understanding of how demand is not only met—it is also produced (Rinkinen et al., 2020). As this chapter has shown, today's household electricity consumption levels are connected to a wide range of things such as increased incomes and urbanisation, housing, large construction projects, infrastructure, air pollution, or expectations of leading healthy lives. Connecting back to the discussion of concepts such as 'high' and 'low' *suzhi* and a growing middle class introduced earlier, the negotiations between the privilege of increased consumption and the duty of being

environmentally conscious and sustainable will likely be defining for the extent to which the Chinese urbanisation process will end up to be sustainable. A question that emerges is: how many AC units, washing machines, mobile phones, or refrigerators is enough, and how many is too much? How is this intertwined with what it means to have a good life? As pointed out above, Chinese urban homes already have the same number of washing machines as US homes—but is the number still increasing? Will it reach a level corresponding to France, or Japan, where 100 per cent of homes have washing machines (Rao & Min, 2018), or will it surge even higher? Recently China has seen counter-movements to the culture of overworking and consuming, such as the *'tang ping'* or 'lying flat' concept that advocates a passive lifestyle with reduced consumption, not having a job, not getting married, nor owning property (He & Qu, 2021). Such movements may indicate that China is becoming more and more sensitised to concepts of wellbeing and good lives instead of always needing to produce more and work harder.

Failing to ask questions of what energy is for and failing to see how it is embedded in material environments and business interests, e.g. relating to the Chinese construction sector, may make the sustainability challenge in China even greater. This realisation forms part of the answer to the questions set out in the introduction. Instead of assuming a pre-given understanding of energy needs and welfare, we can argue that 'basic services and infrastructure' is up for negotiation. On the one hand, some aspects of ensuring enough energy for the population are still about basic services and infrastructures today, particularly in western provinces that still experience shortages. On the other hand, we might have to ask if there are upper boundaries for our consumption levels that are not absolute necessities. In this way, it could be 'ethical'—but perhaps not 'practical'—to argue for restrictions in the overall energy growth of China—if it implies restrictions for those that use excessively and increases for those that have too little. Given the size of China and the number of increasingly rich people, it would certainly make sense to say that consumption that is wasteful or mainly related to luxuries, such as owning a second or third home, could be halted. In other words, although there are still segments of the Chinese population where essential services and infrastructures are needed, there may also be a segment of the population where

limits could be introduced. The argument of this chapter is not to say that limits should be imposed willy-nilly, but rather that it is time to start a discussion of what is 'too much', in addition to the existing discussion on relative poverty, which has centred on the question of what is 'too little' (e.g. Bikales, 2021).

To be sure, the Chinese Communist Party is known to take environmental hazard and climate change issues increasingly seriously (e.g. Korppoo et al., 2020). Concepts such as 'ecological civilisation', taken to the highest political levels in China with Xi Jinping, claim to achieve a harmonious relationship between economic growth, people and nature (Hansen et al., 2018). On November 11, 2021, the 'third resolution' was adopted, an agreement on how to interpret the history of the Chinese Communist Party. In this resolution, the concept of 'common prosperity' was advanced, and economic growth was addressed as a problem: 'We must never sacrifice the environment in exchange for transient economic growth'. It is argued that economic growth must slow down, and 'eco-friendly' growth should prevail—similar to the tenets of 'ecological civilisation' (Hansen et al., 2018). Nevertheless, whether it is possible to combine any form of growth with the preservation of nature is highly questionable—primarily since the problem of ever-expanding needs is not addressed. A combination of efforts that consider both efficiency and sufficiency measures is likely needed. This includes the daunting challenge of finding alternative ways of ensuring tempered homes and good lives without wreaking any more environmental havoc. The intense industrialisation efforts that China has in any new sector they enter domestically and globally, whether new apartment buildings or air-conditioning units, make such efforts much harder. Thus, the day the Chinese Communist Party can prioritise the environment and health in front of continued economic growth is when radical changes that achieve 'common prosperity' can arise.

Note

1. See also Tyfield (2017) for a more in-depth discussion on 'post-capitalism' and liberalism 2.0 (as opposed to neoliberalism) in China.

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6

Practices, Provision and Protest: Power Outages in Rural Norwegian Households

Ulrikke Wethal

Introduction

Electricity plays a vital role in everyday life. However, electricity-dependent practices are often taken for granted, and the complex infrastructure enabling them tends to be invisible (Silvast, 2013; Shove & Walker, 2014)—until the power supply is disrupted. Then, consumers change from being passive recipients and become ‘co-managers of their own practices, involving the dynamics of both supply and demand’ (Rinkinen, 2013: 3). Drawing on qualitative interviews with Norwegian rural households, this chapter uses everyday practices as starting point for

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understanding how daily life changes during power outages and how the households themselves experience the consequences of outages.

Although lengthy power outages have been rare in high-income countries, the supply of electricity is becoming increasingly vulnerable due to the growing complexity and interconnectedness with other crucial infrastructures (Heidenstrøm & Kvarnlöf, 2018). It is impossible to imagine modern life without electricity, as outages affect systems for water, waste, food, transportation and communication (Matthewman & Byrd, 2014: 6). Security of supply is also a timely issue, as the demand for electricity services will continue to increase as energy systems become decarbonised (Ghanem et al., 2016). Furthermore, both terrorism and natural disasters induced by climate change could make outages more frequent in the future (IPCC, 2012; Matthewman & Byrd, 2014; Morrissey et al., 2018). Norway has not been particularly prone to power outages, but rougher storms and heavier snowfall in recent years have demonstrated infrastructure vulnerabilities (NVE, 2018; Agder Energi, 2018), as in other high-income countries (Ghanem et al., 2016; Silvast, 2017). The 2010 World Bank analysis of energy in 30 countries in Eastern Europe and Central Asia, titled ‘Lights Out?’, predicted a severe energy crunch in the region over the next decade. Similarly, the American Society of Civil Engineers anticipates large investment gaps in electric generation, transmission and distribution in the USA, leading to unreliability in electricity supply and posing a serious threat to the national economy (ASCE, 2017).

Much of the literature on power cuts and security of supply uses a techno-economic lens that expects households to *understand* the complexity of electricity systems and *calculate* the risk of power outages (Silvast, 2013). This is particularly evident in the literature on the value of lost load (VoLL), using methods that seek to establish a monetary indicator of the value of secure electricity supply (van der Welle & van der Zwaan, 2007; Schröder & Kuckshinrichs, 2015; Shivakumar et al., 2017). The methodology relies on surveys aimed at uncovering the costs and consequences of power cuts for households, often by asking directly what they would be willing to pay to avoid or accept power cuts (London Economics International, 2013; Electricity North West, 2016). Determining a monetary indicator that directly reflects how households value secure energy supply is a challenging exercise; contradictory to the

methodological intention, some studies have found that households report their direct expenses to be higher than their willingness to pay (Samdal et al., 2002). Because of the complex combinations of material and non-material costs, 'the costs arising from interruptions in the residential electricity supply market are a blackbox' (Morrissey et al., 2018: 142). Although a qualitative approach cannot reveal how households value secure electricity supply, it can shed light on why it may be difficult to translate the consequences of power cuts into monetary terms. Further, a qualitative approach enables a deeper understanding of how power outages may shape households' attitudes towards the broader system of electrical provision, which often result in protest responses in contingent valuation studies that are simply omitted from the analysis (Meyerhoff & Liebe, 2006). With a focus on daily practices, this chapter examines how households themselves reflect on the costs and consequences of outages when describing their own experiences.

Theories of practice have emerged as a powerful lens for exploring the role of energy in daily household routines (Corsini et al., 2019). As Gram-Hanssen (2014: 94) notes, 'Energy consumption is not a practice in itself, but all the different things that people do at home which consume energy, such as cooking or washing, are practices'. Theories of practice focus on 'routine over actions, flow and sequence over discrete acts, dispositions over decisions, and practical consciousness over deliberation' (Warde, 2014: 286). Using qualitative interviews with Norwegian rural households with relatively recent experience of power outages lasting at least 24 hours, I explore how the elements comprising a practice—materials (products, technologies), competences (skills, knowledge) and meanings (ideas and beliefs)—change as households cope with power outages. The aim is to shed light on how disruption influences relations between infrastructures, practices, customers and providers. The analysis further demonstrates and discusses the level of electricity dependence in rural Norwegian households.

The Norwegian Context

Heavy investments in hydropower from the 1960s onwards provided relatively cheap electricity to Norwegian consumers and contributed to increasing their dependency on electricity. Today, some 96% of electricity production in Norway is based on hydropower (Sopha et al., 2010). Norway is one of the few countries where household energy consumption is based on electricity, with a share of 75% and 79% in the period 1991–2010 (IFE, 2013). Depending on outdoor temperatures, energy for space heating and hot water use amounts to about 75–80% of the electricity use in an average household (Statistics Norway, 2014). Average electricity consumption per household has been among the highest in the world, 16,000 kWh per year in 2012 (ibid).

Customers pay a tariff to the grid company with monopoly in their specific region (136 in total), in addition to paying a utility company of their choice (free competition) for the electricity used. Electricity prices are highly volatile and may fluctuate on a daily, monthly or yearly basis, depending on the customer's contract with the electricity supplier. This variation is market-based with no social tariffs (Winther & Bouly de Lesdain, 2013). Each individual grid company determines the grid tariff to be paid, within the framework set by the national regulator (the Norwegian Water Resources and Energy Directorate, NVE). This tariff goes to finance grid operation and maintenance and to ensure security of electricity supply; the amount paid depends on where in the system the connection point is located. Distribution tariffs among companies vary; factors like difficult natural conditions and scattered settlement patterns may result in higher transmission costs (Energy Facts Norway, 2019). The tariff system as a whole is currently under discussion, partly due to the introduction of smart metres in all households during 2019, financed through this tariff (Ballo, 2015). Although Norway was among the first to deregulate the electricity market (in 1991), this has not necessarily made Norwegian consumers into economically rational market actors (Karlstrøm, 2012). Rather, consumers continue to view electricity as a common good (Winther & Bouly de Lesdain, 2013; Westskog &

Winther, 2014), with access to abundant, reliable and relatively cheap electricity as their right (Aune, 1998; Godbolt, 2014).

Security of Supply in Norway

Power outages are not common in Norway. According to NVE (2019), the delivery reliability (related to both frequency and duration of power cuts) in 2018 was as high as 99.983%, with an average duration of outage per customer of just below 2 hours (similar to European averages) (Kraftnytt, 2018). Severe weather is the greatest threat to security of supply, followed by technical failure (Fadum, 2019). In 2018, weather events such as heavy snow, wind and flooding were the major causes of unwanted events in the electricity sector, with trees too close to grid lines posing a particular risk. This means that outages are unevenly spread geographically, and rural areas with overhead grid lines through dense vegetation are more prone to outages than urban areas with underground power supply. Chappells and Shove (2004: 137) refer to rural areas as 'cold spots' in the electricity network, particularly vulnerable to breakdowns because they are 'at the end of the line', with little scope for load substitution. In winter 2017/2018, more than 200,000 outages occurred in Norway; about 20,000 end-users experienced power cuts several times, some more than five times. Southern and Eastern areas were particularly affected, especially the Agder counties (Fadum, 2019), justifying the selection of households for this study.

Grid companies are required to report the amount of energy *not* supplied through a standardised model referred to as the CENS-model (Costs of Energy Not Supplied) (NVE, 2019). This is to be 'a measure of the calculated value of lost load for the customers' (NVE, 2015). The value is thought to be captured through various survey methods, with a majority using what households report as the amounts they are willing to pay to avoid power cuts as measurement (Samdal et al., 2002; Pöyry & SINTEF, 2012; Skjeflo et al., 2017; Skeie et al., 2018). The CENS value forms part of the revenue regulations between NVE, grid companies and the transmission systems operator (Statnett): it is deducted from the grid companies' allowed revenue and is meant to ensure that

grid companies account for the delivery reliability of the grid when building, operating and maintaining the grid. Here I do not discuss the quality of these surveys, but seek to shed light on some of the difficulties involved in trying to reduce the complex consequences of power outages to monetary value. Such surveys often account for the items and technologies that stop working during a blackout—but they say very little about how households deal with the absence of electricity during an outage.

Qualitative Studies, Households and Power Outages

Most qualitative studies of households and power outages focus on preparedness: ‘the process of developing a response and management capability before an emergency occurs in order to anticipate and address potential hazards so that needed resources are in place’ (Diekman et al., 2007: 494). Traditionally, preparedness has been approached in terms of the ability of government agencies and emergency responders to provide assistance during emergencies, but households have emerged as an increasingly important part of national preparedness strategies. Qualitative approaches have been developed in response to the limitations of formal, normative and top–down ways of measuring household preparedness based on the quantities of emergency supplies stored for use during a disaster (Heidenstrøm & Kvarnlöf, 2018). Lists of available items reveal very little about how and why these items were stocked, or whether they are used during an emergency. By contrast, qualitative studies focus on what people actually do during power outages. This literature has been particularly useful in directing attention towards how households themselves view their own preparedness and how they act during an emergency. From Sweden, Palm (2009) has shown how the responsibilities between households, municipalities and grid companies become blurred during power outages; Guldåker (2009) has studied households as part of crisis management in the aftermath of a heavy storm. Several studies have focused on what people have done during power outages in various

European contexts (Silvast, 2013; Rinkinen, 2013; Ghanem et al., 2016; Heidenstrøm & Kvarnlöf, 2018). Generally, these studies contradict the findings from studies focused on formal, top-down definitions of preparedness, and show that households can be prepared and cope well without having formally or consciously prepared for a power outage. Building on these studies, this chapter seeks to understand how daily life changes during power cuts and how the households themselves assess the consequences. I also discuss how power outages shape attitudes towards electricity providers.

Infrastructures, Practice and Provision

During the early 2000s, *theories of practice* re-emerged in consumption studies, critiquing the highly individualistic and economic accounts of consumption that stress rational choice, utilitarian models of sovereign consumers, and cultural approaches to consumption that emphasise cultural expressivism through style, taste and identity (Warde, 2014). The focus shifts to understanding how and why people act as they do—through routines, habits and daily life. A ‘practice’ can be defined as:

a routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. (Reckwitz, 2002, 249)

Given the everyday nature of energy-dependent consumption, theories of practice have become increasingly influential in the field of energy-consumption studies (Shove, 2003; Wilhite, 2008; Gram-Hanssen, 2014). Energy consumption is understood primarily as a social phenomenon, and social life as performed through practices. Practice approaches seek to provide ‘a more holistic and grounded perspective on behaviour change processes as they occur in situ’ (Hargreaves, 2011, 79). Electricity consumption is studied through people’s electricity-dependent routines and practices. When making practice the focal point, focus shifts from measuring what

stops working during a power outage, to what people actually do to continue their daily lives without electricity.

How to link everyday practices with disruption in power supply? This requires further conceptualisation of the connections between infrastructures (such as the electricity network) and the practices to which they relate. These connections are not fixed: they are fluid and relational, with infrastructures and practices mutually influencing each other:

rather than simply meeting pre-existing needs, infrastructures shape relations between practice, material artefacts and related concepts of service (e.g. of comfort, convenience) in time and space; reciprocally, established practices shape and sustain specific infrastructural configurations (Coutard & Shove, 2019: 11).

Central to practice theories is the idea that practices are performed through the connection of various material and social elements. There is no clear agreement among researchers on what these elements are (Wilhite, 2008, Gram-Hanssen, 2014; this analysis uses Shove et al.'s (2012) conceptualisation of *materials*, *competences* and *meanings*. This has become known as the 'three elements model', where the three are understood as constitutive of practices and used to understand 'what it takes to accomplish a practice in a given moment and place' (Shove et al., 2015: 278). As connections among these three are made, sustained or broken, practices may emerge, persist, shift or disappear (Shove et al., 2012). The *material* element refers to items, technologies, tools, hardware, tangible physical entities and the stuff of which objects are made. This element becomes particularly complex with electricity, as intricate infrastructures and concrete appliances are considered part of the material. Households do not use electricity per se, but items like televisions, vacuum cleaners and cookers require electricity to function. In turn, households rely on these and other items in order to perform daily routines—indeed, such appliances may even come to define or change certain practices. Here it is useful to distinguish between 'first-order' socio-technical systems, such as infrastructures, which are material configurations in the background, often taken for granted, and 'second-order' devices depending on them in a given practice (Smits, 2018, 41). Shove employs a similar distinction;

either materiality that is directly mobilised and actively manipulated, or materiality that is necessary in order to conduct a practice, but is not engaged with directly. The latter category has an ‘infrastructural relation’ to practice (Shove, 2017: 156).

The connections between infrastructures and practices have emerged as central topics (Shove & Trentmann, 2019). This centrality can be explained through four distinct features. First, infrastructures are connective, linking different places and sites of practices. For electricity, this connectivity moves across space and scale, connecting heat in, say, one specific living-room to the national grid. Second, infrastructures have a multiple aspect—they typically sustain a range of different practices at the same time. This is a consequence of their ‘location in the background of social action’ (Shove et al., 2015: 7). Hence, when infrastructures fail, they may disrupt many practices simultaneously. A third feature is the collectiveness of infrastructures: they tend to provide services for more than one user. Consequently, they are both subject to and the outcome of deliberate planning and intervention by companies and governments at different levels. This feature connects practices, infrastructures and system providers, underlining the importance of paying attention to the relation between consumers and relevant institutions and systems of provision (Coutard & Shove, 2019). Useful here is Fine and Leopold’s (1993) term ‘systems of provision’, referring to ‘the inclusive chain of activity that attaches consumption to the production that makes it possible’ (Fine, 2002: 79). Infrastructures are not neutral arrangements, but the result of contests over places, resources and rights (Shove et al., 2019: 5), and between different interests (Shove et al., 2015). Those involved in planning and designing infrastructures are thus directly involved in enabling, shaping or even limiting peoples’ practices (ibid). In this chapter, I use the provisioning aspect to shed light on the relations between households and grid companies. And lastly, infrastructures are obdurate: they often require major interventions in the environment, heavy investments, and ‘embody and carry historically specific ideas about normal and appropriate ways of living, effectively transporting these from one generation to the next’ (ibid, 7). Combined, these features make infrastructures resilient in the face of changing and disappearing practices.

The material element is central to understanding the connections between practice and infrastructure failure, but materials cannot be mobilised without knowing how, when and for what. This connects the material to the second element of practice: *competence*. Competence includes skills, know-how and technique—knowing in the sense of being able to evaluate performance, and of having the necessary skills. Skills are both shared and reproduced in the doing of a practice—immediately and in the long-term as practices evolve (Shove et al., 2015). Competence also includes embodied or tacit knowledge, where competences may lie dormant for years without being activated (Heidenström & Kvarnlöf, 2018). The element of competence is used to understand the knowledge households build on (and continue to build) when practices are altered during power outages. The final element, *meaning*, refers to symbolic meanings, ideas and aspirations: ‘the social and symbolic significance of participation at any one moment’ (Shove et al., 2012: 23). This element is used to understand how households make sense of their practices without electricity and what ideas and meanings they attach to performing them. Together, the three elements are used to explain what happens when the linkages between them dissolve during power outages, and how households seek to continue their practices by connecting different materials, competences and meanings.

With power outages, the issue of reliability of supply becomes important. When electricity systems increase in reliability and become taken for granted, the uses of the system expand and new appliances become connected. As people’s daily practices become more reliant on electric supply, dependency increases (Coutard & Shove, 2019); when an electricity system is *unreliable*, that will also have an effect on household practices. As put by Chappells and Trentmann (2019: 198), ‘disruption give us short, momentary glimpses of the fabric of “normality” as it is fraying and reveal the patterns in which practices and infrastructures are woven together’. My analysis focuses on how power cuts shape the elements of practice and the connection between them, and the relations between infrastructures, practices, users and providers.

Methodology

The analysis is based on 17 qualitative interviews with rural Norwegian households which had experienced outages of more than 24 hours during winter 2017/2018 (see Table 6.1 for a summary of household characteristics). Qualitative interviewing was chosen to allow investigation of how daily practices change during power outages, and the consequences of interruptions for households, during outages and in longer-term practices of preparedness. As practices are more about doing than saying,

Table 6.1 Characteristics of interviewed households

	Household description, with ages	Informant	Years living in current house	Area
1	Couple, 56 and 53	Male	7	Agder
2	Family of four: 43, 42, children aged 10 and 15	Male	11	Agder
3	Couple, 75 and 82	Both	14	Agder
4	Family of seven: 2 adults in their 40s, children aged 17, 15, 12 and 6	Female	14	Agder
5	Woman (widow), 92	Female	>25	Agder
6	Couple, 69 and 71	Both	>25	Agder
7	Man, 35	Male	8	Nordmarka
8	Family of three: adults in their 40s, child aged 16	Male	21	Nordmarka
9	Couple, 60s, with younger relative of 18	Both	15	Nordmarka
10	Woman, 80s	Female	>25	Nordmarka
11	Family of three: adults in their 40s, child aged 15	All	1	Agder
12	Family of six: 48, 49, children aged 9, 11, 14 and 18	Female	>25	Agder
13	Family of seven: 44, 55, children aged 9–17	Female and children	18	Agder
14	Family of three: 33, 33, child aged 2	Female	10	Agder
15	Family of four: 42, 43, children aged 8 and 11	Male	8	Agder
16	Woman (widow), 70	Female	>25	Agder
17	Couple, 70s	Male	>25	Agder

observation is often seen as the ideal study method. Rather than providing accurate descriptions of how practices change during power cuts, data collected through interviews reflect how people *reconstruct* the influence of power cuts on practice and habits (Silvast, 2013). Informants may have forgotten some aspects or wish to highlight what went particularly well; however, in-depth interviews also allow for reflection and explanations about how habits were interrupted and resumed—points that might have been missed if other research methods were used. Additionally, informants may be able to place incidents during one power cut in a broader historical and cultural context.

The study-households were located in Agder district in the far south of Norway (13 households), and in the Nordmarka woodlands (four households) outside Oslo, recruited by local community chairmen, or self-recruited following an email from the grid company or through an announcement in the local newspaper. Each household received NOK 500 (approx. €51) as compensation. All households were living in detached homes in rural localities. There were eight families with children, six households of retirees, two middle-aged couples and one 35-year-old bachelor. All except one household had been living in their current home for more than 5 years—13 for more than 10 years (see Table 6.1 for further details). This gave them solid experience regarding the frequency of power outages in the area, and their influence on daily life. One household was interviewed by phone; the remaining interviews took place in the family homes. That offered a closer understanding of the geographical areas in question, with observation of the homes and the material objects used in daily life as well as during power outages. With all households except one, the lengthy power outages had affected a larger geographical area. Table 6.2 (below) summarises alternative materials and technologies for selected practices in the households interviewed.

Interviews were semi-structured, and included questions about background information such as household composition and employment, the extent to which daily routines involved electricity, available alternatives to electricity, and experiences with outages. Main themes were the socio-material aspects of how practices change during lengthy power outages and the specific consequences. The interview guide included open questions and specific ones covering daily practices to reveal what

Table 6.2 Alternative materials and available technologies

Heating	Cooking	Lighting	Toilet and hygiene	Generator
Households				
1 Wood stove	Have: charcoal grill, campfire pan Used: wood stove	Candles, hand-torches, LED -lights	Traditional outdoor toilet	No (under consideration)
2 Wood stove	Wood stove	Have: hand-torches Used: candles, kerosene lamp	Waste water from the well	Yes (not used)
3 Wood stove, gas-driven stove	Wood stove	Hand torches	Used stored water, fetched water from nearby stream	No
4 No, but slowness in the system (central heating system driven by wood and electricity)	Gas grill (portable)	Used: head torched, candles	Used stored water	Yes (not used)
5 ^a Wood stove	Wood stove	Chargeable battery-driven	Kept water access	No
6 Wood stove	Have: Gas grill Used: Wood stove	Candles, hand-torches	Waste water on tap in basement	No (under consideration)
7 Wood stove	Used: primus, bought prepared food	Candles, hand-torches	Used stored water, melted snow	No (under consideration)
8 Wood stove and fireplace	Gas flare	Some driven by generator, head-torches, candles	Generator-driven, chargeable dishwasher	Yes
9 Wood stove	Have: Wood stove, primus Used: only cold food	Head-torches, candles	Used stored water	Yes (not used)

(continued)

Table 6.2 (continued)

Heating	Cooking	Lighting	Toilet and hygiene	Generator
10 Wood stove	Campfire pan and wood stove	Head-torches, candles	Traditional outdoor toilet	No
11 Wood stove	Hotplate with propane and wood stove	Candles, hand-torches, battery lighting bought during blackout	Bought water, melted snow	Yes (but broke down first evening)
12 Have: Gas oven Used: Wood stove	Primus	LED-lights, hand-torches, candles	Connected directly to well	Yes (used only for TV one day)
13 Wood stove	Wood stove	Hand-torches, candles	Melted snow, used muck cellar in stable as toilet	No
14 Wood stove	Did not cook warm meals	Hand-torches, candles, battery-driven lamps	Waste water from the well	No
15 Generator-driven heating	Gas flare	Hand-torches, candles	Kept water access, heater driven by generator	Yes
16 Wood stove	Camping stove	Hand-torches	Kept water access	Yes (not used)
17 Wood stove and fireplace	Gas flare	LED-lamps, hand-torches	Kept water access	No

^aStayed at a nursing home during the outage

households had actually done during the outage. Informants were also asked directly about translating the consequences of power cuts into economic terms. The latter is not the main focus of the analysis, but is discussed briefly and reflected upon in the conclusion. The interviews were recorded, transcribed and later coded in Nvivo. All quotes have been translated from Norwegian to English by the author.

Coping with the Consequences of Outages: Restructuring the Elements of Practice

During a power cut, our dependence on electricity is foregrounded and the vulnerability of everyday practices revealed. Lights go out, as does the background sound of electric appliances in use. On a winter afternoon in rural Norway, this means total darkness and silence, except perhaps from cell phones in use. Electric heating, electric cookers, water heaters—all stop working. As noted, Norwegian households are particularly dependent on electricity for most daily practices (Winther & Bell, 2018). As put by one informant (household 6, man 35):

All your routines are changed. Normally, you're 100% dependent on electricity all the time, nearly everything you do and touch involves electricity, so you have no routines anymore.

The centrality of infrastructures to practice becomes evident during a blackout: electrical infrastructure serves as the 'backbone' to most devices used daily, and to our understanding of what it means to live a modern, normal life in a high-income country.

What then happens during a power outage? What becomes the major focus of households during disruption? While the moment of disruption brought the dissolution of previous routines for the study-households (some described this as 'a state of emergency'), they still managed to adapt quite quickly. As one informant put it, 'it's about getting into a rhythm...it's not a problem, it just means more work' (13, family of seven). They focused on keeping the wheels turning by trying to maintain daily routines and practices—which illustrates the

centrality of practices in seeking to understand social life. As Ghanem et al. (2016: 173) note:

The power outage presents a situation where the linkages between the elements of the practice are broken, albeit temporarily. However, for normal everyday life to continue, existing practices need to be modified, new linkages need to be made incorporating new technologies and artefacts, and would require knowledge and competence for the practice to be performed in a power outage situation.

Maintaining daily practices entails re-organising the elements that normally shape them. In the following, I present and discuss how household practices change during power cuts: using different materials, invoking other competencies, attaching new meanings to practices.

The Material Matter(s)

As noted, the material element involves ‘first-order’ or ‘background’ materiality, such as infrastructures, and ‘second-order’ devices that are directly used by households during power cuts (Smits, 2018). A power outage severely affects the background materiality, as electric infrastructure often intersects with other complex infrastructures. For many of the rural households interviewed here, this meant the water system and communications. For 8 of the 17 households, water supply stopped immediately after the power disappeared, and this became the chief consequence for those households. In 2017, about 85% of the Norwegian population was connected to municipal water supplies (Statistics Norway, 2018). Those supplies were not affected by power outages—households without water supply during power outages were thus among the unconnected 15%. Their normal water supply comes from wells, conducted into the house by means of electric pumps. As the estimated daily consumption of water per person in Norway is 179 litres (Statistics Norway, 2018), a full stop in water supply means a considerable disruption of everyday routines. The households found various ways of keeping their water-dependent practices going. Several had foreseen the consequences, and

had filled buckets, bottles and bathtubs with water in advance. For others, this involved the lengthy process of melting snow/ice on the (wood) stove (household 1), fetching water from the nearest stream (household 3), or driving to buy water (household 2 and 11). Regardless, losing the water supply entailed a major shift in the workload connected with daily practices of cooking and hygiene—cumbersome and time-consuming. During two 38-hour power outages, one elderly couple fetched all the water they needed from a small stream about 30 metres from the house, using a bucket. And a family with five children had to use the muck cellar in the stables as a toilet for almost four days.

Regarding the communications system, the battery backup on base stations for households' mobile technology lasted only for some hours. Nine of the 17 households interviewed soon had no way of communicating with the outside world for the remainder of the outage. This was considered risky, especially in combination with the harsh winter weather with heavy snowfall and fallen trees blocking the roads. One household reported that a neighbour had died of a heart attack during the power outage, as his wife had no way of contacting the ambulance services. That episode became a major talking point in the community. The lack of communications represents materiality that is not easily compensated, especially since telephone landline use has decreased steadily in recent decades: from 2009 to 2018, the number of landline subscriptions fell, from 1.8 million to about 563,000 (Ekostatistikken, n.d.). This also poses a major danger to more general emergency preparedness—without a communications network, households cannot call for help:

We had to keep our hopes up, but of course we were all thinking 'what if something happen when all the systems are down'. No trains, nothing, and the roads blocked by snow. You might as well be locked in a bunker, waiting for someone to come and get you out. You don't know anything – and that is not a good feeling. (household 1, middle-aged couple)

As to second-order devices, households had to mobilise materials in new ways in order to maintain daily practices.¹ For some, this meant obtaining new materials, but for most, it meant using available materials in new ways, drawing on an existing backup system of dormant materials

(Rinkinen, 2013). Because material arrangements ‘simply exist’ (Shove and Walker, 2014), various materials can be included in numerous different practices (Gram-Hanssen et al., 2017). Hence, how a practice is performed is influenced by both the availability of things and whether and how households make use of them.

Although electricity is the main source of heating for the majority of Norwegian households, all but one household had alternative technology in the form of wood-burning stoves. In fact, 86% of detached houses in Norway have wood-burning alternatives (Statistics Norway, n.d). Wood has remained central in heating systems in Scandinavia (Rinkinen, 2019), and several households interviewed here saw their wood-burning stove as the main heating source. The one household without a wood-burning stove normally used a central heating system powered by wood and electricity. Inertia in the system meant that the house kept some of the heat during the 48-hour blackout. Households reported utilising other types of ‘materials’ to keep warm, such as wearing thermal underwear indoors (household 4, family of seven), in addition to various types of outerwear and blankets:

The fact that it got really cold was uncomfortable, but then we had warm bed-sheets, and extra duvets, and these woollen blankets, you know the kind you keep in the house and never throw away but never really use either. (household 13, family of seven)

From a provisioning perspective, using wood for heating makes sense considering the instability in the electricity infrastructure and the fact that many of the households had easy access to wood locally; some owned forest themselves. While keeping warm was seldom mentioned as the most challenging aspect of the outage, heating with wood required substantially more work, as well as different daily rhythms with fetching wood and keeping the house warm (Rinkinen, 2019).

For practices like cooking, materials were removed from their predetermined role and relation to other materials—often referred to as the ‘script’ of a technology (Akrich, 1992)—and used in new and innovative ways. The garden BBQ grill, the campfire pan, a camping stove or wood-stoves became main materials involved in cooking dinner:

We had a gas grill, in the kitchen. I'm glad that I'd bought it – had never used it before, but it came in handy now. ... Actually, it was meant for holiday trips; it was such a small one that we could just put it on the table. (household 4, family of seven)

The quote above shows how the material used had not necessarily been acquired for use during an outage. Otherwise, the snowdrifts outside were used to store food from the refrigerator; pots of snow were used as cooling elements inside the refrigerator. Candles and pocket torches, normally used for outside trips in the dark, became the main lighting source indoors; head-torches allowed the continuation of certain activities, like reading (household 12 and 14), eating dinner (household 9) or doing handicrafts (household 10).

Several households were innovative in their use of existing materials, but uncertainty about the duration of the power cut became a key factor regarding what materials were employed. This is again connected to the failure of the communications system, demonstrating the interlinkages between infrastructures and appliances. Without any contact with the grid companies to learn about the scope of the outage and repair schedule, planning became difficult. As also Palm (2009) found, not knowing when the power supply will return can have a paralysing effect on households, as they are unable to decide what efforts to undertake:

... you have no idea whether it [the power] will return tonight or tomorrow. You begin to think, should I start melting snow, which will take at least an hour, if the power will be back tonight? (household 13, family of seven)

My main frustration was about information, and being able to plan. Being in the dark – literally speaking – and not knowing... that is extremely frustrating. (household 17, middle-aged couple)

Without information about the probable duration, people kept hoping for the power to return and refrained from mobilising materials that could be useful but would require considerable effort. For example, four households had generators, but chose not to use them, weighing the amount of work required against the possibility of the electricity returning.

Although the household economy is an integral element in material arrangements (Westskog et al., 2011), financial issues were not brought up as central aspects. When asked specifically about direct costs in relation to the power outage, informants downplayed this aspect:

I really don't want to focus much on costs, they aren't the sort of thing I think about in relation to outages. (household 7, man 35)

Most households had incurred direct expenses from the outages, but very little was considered monetary loss. The use of pre-existing stockpiles of wood, batteries or candles was not considered an extra expense, but an integral element in household practices. For most households in this study, outages were not about economic costs, but about the difficulty of leading a normal life without a steady supply of electricity.

Building Competence

According to Rininen (2013: 7), 'disruption invoke[es] a set of physical, social and mental skills required during the power cut'. These different skill sets can be linked to the element of competence (Shove et al., 2012). While available materials are crucial, these cannot be mobilised without knowing what to mobilise and how—which demonstrates the interlinkage between competence and materials. For many households, these competences were connected to previous experiences with power outages, constantly building and informing new practices. Heidenstrøm and Kvarnlöf (2018) found that previous experiences with blackouts became a tacit form of knowledge embodied in peoples' daily lives that became activated before or during disruptions. Such embodiment results from two forms of social learning: either by being exposed to others' performances in the same socio-cultural context, or through 'purposive training', as when learning sports or a craft (Wilhite, 2012: 89). Some household members had grown up learning such coping mechanisms from family and community:

(..) when we hear the weather forecast and know there will be snow, we assume that the power will be cut. I've have been taught that ever since I was a little kid. (household 2, family of four)

Others had achieved this competence through repeated experiences of power cuts. For some, that year's hard winter became an important learning arena:

But people learned, I heard that from the other kids' parents; they'd filled buckets of water, 10 to 20 litres, to have on hand, expecting more outages. With the first power cut, you're pretty helpless, but with the next one, you've realised that there are things you can do yourself. (household 12, family of six)

Discussing the effect of different types of disruptions, Chappells and Trentmann (2019) found that people continuously build competence and shape practices through various experiences with disruptions. Disruption and normality feed into each other and contribute to shaping the flexibility of infrastructures and practices. This was evident in the households' descriptions of how they prepared, particularly linked to competence in reading the weather signs that instinctively triggered a set of activities:

When such weather sets in, we always start filling buckets (...) water for cooking, and then we need to think about the toilet as well. (household 3, elderly couple)

Well, we knew that there'd be heavy snowfall, so I finished preparing dinner and baked a cake for the next day, because I thought that I wouldn't be able to do that later. (household 4, family of seven).

Other types of competences were activated during the outages. For nearly all the households, knowing the storage life of food in the freezer was talked about in a common-sensical matter:

The freezer, you just keep the lid closed, and then things will last for several days at least. (household 12, family of six)

You just don't open the freezer, and things will stay cold for days. (household 9, middle-aged couple).

Experiences with outages, and the building of specific competence related to this, also meant that the households had created routine for dealing with future outages. This included storing water, having food that could be prepared easily, having a supply of candles, batteries and firewood, and pre-arranged places for pocket torches and matches:

We always have them [pocket torches] ready just in case, and we always have batteries, that's something I always make sure of. (household 1, middle-aged couple)

Actually, we have water out there now. I always keep a little bit, for sometimes things happen so fast that we don't even have time to turn around... (household 3, elderly couple)

Several informants also mentioned how they were reluctant to upgrade or modernise some appliances, because this would make them less prepared for power cuts. For instance, one informant (household 2, family of four) explained how it was necessary to keep the old pots and pans, because the modern ones, like those used for induction cookers, were no good on a woodstove. And people kept woodstoves centrally placed, knowing how essential they could become:

There are very few here who, for example, discard their old woodstoves. People normally keep one or two just in case, even if they otherwise heat with heat pumps or something similar. (household 12, family of six)

Such findings are in line with the research of Ghanem et al. (2016) on how previous experience with outages can inform household choices. For instance, several households had opted to keep their traditional outdoor toilet for use as backup during outages (households 1, 10, 11), or their telephone landline in case the cell-net disappeared (households 10, 17). This shows how competence and materiality are intrinsically interlinked.

However, unfamiliarity with using available materials could become a barrier. As mentioned, several households chose not to use their generator

during the long outage, not least because getting it started was such a hassle. One household had considered getting the water pump connected to the generator, but had put off doing this because it would require outside assistance. Another informant simply said that it had always been the responsibility of her late husband—she herself did not know how to use it.

Making Sense of Practice During Power Outages

Experiences with power disruptions, on a regular basis for some households, also involved meaning-making—the third element of practice (Shove et al., 2012). This centred on the sense of achievement connected to being able to cope with the power outages, and became part of identity-building processes for the households involved. Several informants pointed out that they themselves had chosen to live relatively isolated, and therefore could not expect the same security of supply available to city-dwellers. When talking about what a good life meant to them, nearly all informants linked that to living in rural areas, removed from the stresses of urban life. This choice was thus used in explaining that they were more prone to power cuts than elsewhere, and the feeling of their not being first priority:

We realise that we live in an area where there may be power outages a couple of times a year, and if we lose power one, two, three, four hours, that's no crisis for us – it's just annoying. That's how it is, we can't expect to have the same service as the city, where the power system runs underground. (household 1, middle-aged couple)

...[the grid companies] of course prioritise where there are most people living – that goes without saying; when you live out here in the woods you just have to understand that. (household 2, family of four)

Such an understanding of their own rural location and the effect on security of supply seemed to invoke a particular identity constructed around being able to cope with power outages, often as opposed to 'city-people':

I think people out here are more flexible, better at adapting when something happens. We're more used to it, and generally speaking we're pretty

independent of many things that people in the cities have come to rely on. (household 13, family of seven)

I get really annoyed by those people who get so paralysed by power outages. It doesn't have to be long, but they're completely unable to act: they don't go to work, don't send their kids to kindergarten, they just sit at home and wait. I am truly shocked that people are so helpless. (household 12, family of six)

Similarly, Silvast (2013) found that Finnish households explained how capable people can manage without electricity, by being responsible and prepared for outages. Several of my informants were keen to show me their firewood stockpiles, or stressed the flexibility of their daily routines also during outages:

Yes, we kept things easy, we had tacos for instance. It's easy to cook the minced meat on the camping stove, and that was it. And we probably wouldn't have had tacos on a regular weekday if it wasn't for the outage, so no wonder they [the kids] were happy. (household 12, family of six)

We didn't heat up the whole house for it to be as comfortable as always. We didn't put in a major effort for everyone to be able to sit in their own rooms. We kept to a minimum – this is good enough – and we'll survive very well with that. (household 13, family of seven)

Widespread electric heating has made it possible to heat up entire houses, thus also contributing to changing what is considered to be comfortable and normal home conditions (Shove, 2003). Wood heating is different, as a fire is lit only when and where heat is needed (Rinkinen, 2019). During the power cuts, afternoon activities would centre around the heat, bringing an extra sense of togetherness during the power outage; families spent more time together. This was deepened by the lack of mobile communication, with a stronger felt need to keep the family together, and the lack of working electronics that otherwise facilitated separate leisure activities.

While the above demonstrates the interlinkages between materiality and meanings, others illustrated the connections between competence and meanings. For several households, managing to cope with the power

outages gave a sense of autonomy, proving that they could be self-sufficient:

I do feel in a way that we're a little like an old-fashioned homestead here (...) a bit by ourselves out here, we simply have to manage on our own – that's what we've chosen. (household 15, family of four)

This was often extended to the community level. One household explained how the neighbours came to borrow their toilet as one of the few with water access; another mentioned letting the neighbours charge their phones from his generator. Several described a community feeling where everyone would help out, especially in making sure that the elderly had what they needed. Other studies have also shown how disruption can intensify social cooperation and bonding (Trentmann 2009). However, stories about those who did not manage so well during the power outages demonstrated how my informants expected responsible households to take the necessary precautions and not simply lean on the community:

Then they came and asked nicely if they could borrow some [wood] ... or buy some from me. Good Lord [laughing], here I was, seventy years old, splitting wood all summer long, splitting away, while they went off with their picnic baskets and butterfly nets. And then they come to me and ask for wood. I felt embarrassed for them. (household 16, elderly woman).

It would have been so embarrassing if we ran out of firewood, we couldn't have told any of the neighbours... so I don't think we'd have heard about it if someone had been stupid enough to run out of wood. (household 13, family of seven)

Provision and Protest When Infrastructures Fail

Although social learning through outages shapes future expectations of service and response capacities (Chappells & Trentmann, 2019), this does not mean that my informants accepted the failure in service provision as such. While the households felt that they managed quite well in terms of routines and keeping the wheels of daily life turning, it also

became evident that repeated power outages strongly affected the relation between customers (the households) and providers (grid companies).

While part of the competence involved in coping with outages concerned understanding weather signs, the responsibility and explanation for recurrent outages was still placed on the grid companies, as the main actors that customers deal with in connection with power outages. The relationship between customers and providers is shaped by direct and indirect interactions, which in turn shape customers' views and concerns (Winther 2012). Discussions about the grid companies often evoked emotions of anger, bitterness and frustration. The households did not feel like the grid companies had their interests at heart, but rather that they were distanced and staffed by city-people ignorant of realities in the countryside. This led to inadequate electricity line clearance, contributing to the severity and length of power cuts:

All the trees that fell over this time – they were too close to the electricity lines. The grid companies have to spend more [money], that's their responsibility ... With better maintenance, I think much of the trouble could have been avoided. (household 11, family of three).

For us who are used to being out in the woods and fields, and able to use our heads a bit [...] we see that this doesn't work ... they trim and fell trees in a way that is completely idiotic; it doesn't help to clear the line three meters on each side when there is a 15-meter tree on the one, right? The old line-clearers knew this, but they've all been replaced now... (household 2, family of four)

Other studies also note the importance of trust in the grid companies and their understanding of the local context. Palm's study in Sweden found that 'if the household thought the company lacked such local awareness trust in it quickly evaporated. [...] a certain bitterness that the company did not regard rural customers as equally important as urban customers' (Palm, 2009: 59). A similar feeling was evident in several of the households interviewed. This bitterness was exacerbated by the general feeling that the grid companies focused not on security of supply, but on keeping costs down, deliberately misleading their customers in the never-ending search for profit. Informants saw power outages as an effect of the privatisation and liberalisation of the electricity market:

It's provocative to read about their [the grid companies'] surplus of NOK 1.2 billion, and then be told that if upgrades are to be made, if they are to do something about the electricity line, that will cost each household NOK 20–30,000 kroner a year... that *we* should foot the bill for the greed culture that's developed in those companies. (household 1, middle-aged couple)

The reason why they don't upgrade into [*area name*] is that they won't recoup that investment. But when they take over something from the state and become privatised and get the opportunity to make money, then they should also have to spend some money, they can't just make profits everywhere. (household 8, family of three)

Here, the households seem not to criticise electric provision as a large and complex infrastructure that occasionally fails, but as a profit-seeking actor that places its own concerns before those of the customers (Silvast, 2013). According to Winther and Ericson (2013: 382), 'people pre-assess the information contextually with respect to who the sender is and what its underlying motives are presumed to be'. Several households used the fact that they themselves had to record the duration of the outages and fill out forms in order to receive compensation after lengthy power cuts as an example of this profit-seeking mentality—the grid companies obviously had this information already.

Generally, the households had low confidence in, and negative attitudes towards, the grid companies. This could be linked to a 'Norwegian energy culture', where electricity is seen as a common good, not a tradable commodity (Godbolt, 2014). As mentioned, Norwegian consumers seem to expect a steady supply of electricity and feel entitled to access it at reasonably low prices. This is at odds with how the Norwegian electricity market expects households to be economically conscious actors who apply market logic (Karlstrøm, 2012). Consequently, customer outlooks and expectations are not met, and distrust towards the system may develop (Karlstrøm & Ryghaug, 2012; Godbolt, 2014; Aune et al., 2016). While the households acknowledged that they lived in vulnerable locations in terms of service provisioning, several highlighted that they already paid substantial amounts in grid tariffs that should have secured a steady supply of electricity.

Conclusions: Between Dependency and Flexibility

Drawing on qualitative interviews with Norwegian rural households, this chapter has analysed how the households themselves experience the consequences of power outages when their practices are disrupted and they have to continue without electricity. The analysis has shown that, although outages represent a major interference in daily routines, rural Norwegian households appear well-prepared for power outages. They tend to have alternative heating sources and can find alternative means of lighting, cooking and storing food. Although most households interviewed had some direct costs in relation to the power cut (unusable food or devices, expenses for batteries, candles, firewood, food), these were not thought of as important consequences. The major challenges concerned the lack of broader infrastructures, such as water supply and communications network. The latter was considered particularly serious, since it could not easily be substituted by other technologies or appliances. Informants stressed that they managed quite well during extended outages, they found ways of adapting, especially in comparison to urban areas. However, they still considered power cuts a major disturbance in everyday life and felt unjustly under-prioritised by the grid companies.

This study of power failure reveals the ways in which practices and infrastructures are intertwined in shaping the daily life. Infrastructures enable many practices at the same time and have come to define many of our habits and routines. Thus, when they fail, much of what we consider daily life has to be reorganised. Placing the three elements—the material, competences, and meanings—at the centre of the analysis allows us to explain how power failure temporarily breaks the linkages between elements in electricity-dependent practices, and to understand the ways in which households go about forging linkages between other things and technologies, embodied knowledge and competences, and new meanings, in order to continue everyday life. This reassembling of elements in practices reveals the complexity of consequences of power cuts and explains how rural Norwegian households can cope relatively well with lengthy power outages.

The analysis illustrates the many layers of materiality involved in performing daily practices, often taken for granted in a functioning system of electricity provision—for instance, how electricity intersects with water supply and communication networks. The findings also shed light on how infrastructures and practices co-shape each other: how experiences with unreliable power supply lead people to take necessary precautions, in turn enabling them to cope better during a power outage. As put by Chappells and Trentmann (2019: 198), ‘disruptions over time shape expectations of a “normal life”’. Electricity, water and communication infrastructures have become crucial for the performance of many daily practices. However, as this interview material has shown, previous experiences with recurrent failure in supply contribute to shaping households’ future practices, creating shadow-practices involving a different set of elements. Households kept stocks of wood, batteries, and water and chose to keep outdated or traditional materials for use during power cuts. That did not mean they necessarily accepted their position in the ‘cold spots’ of electricity networks, as expressed in how they related to the electricity providers. The grid companies were expected to deliver electricity in every location, even in challenging weather conditions. Their inability to do so resulted in low customer confidence in the grid companies’ abilities and intentions. Households tended to see the grid companies as profit-seeking actors that placed their own concerns above those of their customers. As noted, Norwegian consumers still tend to consider electricity a common good.

The analysis has also shown how economic aspects play a marginal role when households must cope with lengthy outages—which could be one of the reasons why it is difficult to transform the consequences of power outages into quantifiable monetary values. While commonly used methods for estimating the value of secure electricity supply seem to assume that those who experience power cuts calculate the consequences into quantifiable costs, these findings indicate that this is not necessarily the case for the rural Norwegian households in this study. They focus on maintaining the routines of daily life—by mobilising alternative materials, evoking dormant competences, and attaching new ideas and meanings to modified practices. Although their ability to adapt and change their electricity-dependent practices during outages demonstrates a

relatively high level of preparedness, this does not mean that these households do not value secure power supplies. Their daily practices are heavily dependent on electricity, but also flexible enough to respond to recurrent failures in the electricity provisioning system.

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Note

1. See also Table 6.2 for a summary of alternative materials and technologies for selected practices.

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Part III

Consuming Mobility



7

A 'People's Car' Without a People? Mobility, Aspirations and Status in 'New India'

Kenneth Bo Nielsen and Harold Wilhite

In 2008, the Indian automobile company Tata Motors launched its new Tata Nano car.¹ Branded and massively promoted as an Indian version of 'the people's car', and priced at a very affordable 100,000 Indian Rupees (INR), the launch of the Nano made headlines not just across India, but across the world. Not only did it promise to bring car ownership within reach of Indian middle-class families; it also demonstrated India's unique capacity for innovation and engineering. Yet only a decade after the spectacular launch, the production of the Nano was quietly being phased out, and by 2020 both production and sales were officially discontinued.

Drawing on social theories of consumption, this chapter analyses the rise and eventual decline of the Nano, from the drawing board to the

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paradoxical situation where the car that was aggressively marketed for the 'Indian people' found itself without a people, that is, without a significant consumer base. Based on this chronological account, we argue that cars and their reception as a particular consumer good feed into historically constituted linkages between objects and social status displays in India. These linkages, we suggest, are mediated in new ways in a context of accelerated global economic integration and trade, an increasingly globalised media, and changing consumer aspirations.

We first locate the story of the Nano in the trajectory of the car in post-colonial India, before presenting our account of the rise and fall of the Nano. We argue that the Nano failed neither because it was a mediocre car, nor because it remained economically out of reach for most Indians. Rather, we suggest that its insertion into the lower ranks of a powerful status hierarchy of identity-defining objects precluded it from adequately tapping into new and hegemonic forms of middle-class aspiration in 'New India'. The rejection of the Nano among Indian consumers was therefore not directed only at the car itself, but at the image of 'the Indian middle-class consumer' that the car conjured up. To substantiate this argument, we engage substantially with the literature on consumption, India's 'new middle class', and the discourse of a 'New India' in which the nation is projected as rapidly entering into a new world of global possibilities.

The Car in India

Soon after India became independent in 1947, the Indian government banned the import of completely built cars, and from 1953 it refused permission to Indian manufacturers to assemble imported vehicles without increasing local content. This would mean that domestic manufacturers such as Hindustan Motors—who produced the iconic Ambassador car—and Premier Automobiles consolidated their grip on production (D'Costa, 2005: 82), constituting a duopoly in the Indian car industry which would last until the 1970s.

Because the car industry was tightly regulated and cars treated as luxury products subject to price controls (D'Costa, 2005), the Ambassador

remained out of reach for most Indians. It was the car of ministers and a small segment of the upper middle class, a well-established marker of social status and distinction (Wilhite, 2008: 123). In the 1970s, however, Prime Minister Indira Gandhi's son Sanjay Gandhi promoted the idea of domestic production of an Indian 'people's car'. In 1971, Sanjay Gandhi started a car manufacturing company of his own, Maruti Limited (Guha, 2007: 469–470), vowing that his company would soon produce a car that would come to dominate the market. But when Sanjay Gandhi died in a plane crash in 1980, Maruti had not produced a single vehicle (D'Costa, 2005: 85), and only in 1983 did the company—through a joint venture with Suzuki—release its 'Maruti 800' model, the first car within the affordable range for the Indian middle class.

The Maruti 800 was more than just a car. It would also be the vanguard of a new consumption-driven Indian political economy. India's Prime Minister from 1984 to 1989, Rajiv Gandhi, shifted the economic development emphasis from production to consumption and 'to the possibility of commodities that would tap into the tastes and consumption practices of the urban middle classes' (Fernandes, 2000: 613). In this context, the Maruti 800 constituted an 'aesthetically pleasing and economically attractive' vehicle from the point of view of 'a consuming class accustomed to expensive and shoddy products' (D'Costa, 2005: 91). Nonetheless, in the 1980s there was still a lingering element of the long-standing social valuation of frugality in Indian middle-class consumption, and in this early phase of the birth of the consumption economy, products were still designed to be practical, functional and durable. This included the successive versions of the Maruti 800 that would remain fairly standardised with interchangeable parts, allowing owners to harvest social approval by making their car last while keeping it in mint condition.

As Wilhite (2008: 123) reports from Kerala, in the 1980s the Ambassador and the Maruti 800 combined to constitute a fixed and stable social hierarchy: the rich drove Ambassadors, while the rest (of those who could afford a car) drove a Maruti. Yet this began to change after 1991 and the opening of India to foreign models, manufacturers and investments. The passenger car segment was completely de-licensed in 1993 (D'Costa, 2005: 103), following which the auto industry has rapidly internationalised, forming a market with a great variety of car models. This has coincided with high, if

erratic, rates of economic growth over many years so that more Indians than ever before now aspire to the expanding comforts of middle-class life. This includes air-conditioned homes, a number of household electric appliances such as washing machines and microwave ovens, and new home entertainment technologies, as well as an explosion in the ownership of smartphones (Tenhunen, 2018). Car ownership forms an important ingredient in this comfort regime, emerging as ‘totems’ or ‘marker assets’ of upper-middle-class status (Krishna & Bajpai, 2015: 71).

The availability of a multiplicity of cars and models unfolded in a context in which frugality was waning as a positive factor in social performance. The rush for new consumer goods that followed after liberalisation soon displaced this older ethos (Krishna & Bajpai, 2015), indexing how the unfolding politics of state-led economic liberalisation and the formation of new, conspicuous or ‘aspirational’ (Mazzarella, 2003) consumption practices among India’s new middle class have been mutually constitutive and reinforcing (Fernandes, 2009). As new products and new models of household appliances and cars of differing price and quality became available, holding onto older commodities was gradually associated with an inability ‘to keep up’.

As discussed in the introduction to this volume, Veblen’s (1899) work shows how people in socially stratified societies use commodities to emulate the consumption of the elite. In the 1980s, the vast difference in cost between the Ambassador and the Maruti made this form for emulation impossible for most middle-class Indians. However, by the 1990s the consumption landscape had changed. Foreign cars, SUVs and other kinds of quasi-luxury cars now came within reach, making the car—highly visible in driveways and on the roads—a perfect means to project a family’s social identity. Already more than a decade ago, Saavala (2010) noted how a family that bought a car did not do so simply for practical purposes, but also to position themselves in relation to people who ‘only’ had a motorbike.

As shown in Bourdieu’s (1984) work, in societies where class distinctions are blurred and consumption choices vastly elaborated, consumption not only signals a move upward through social hierarchy, but rather through an articulated social space consisting of multiple identities. As Brosius (2010) shows for India, the intangible and fuzzy nature of the middle-class

category makes the social performance of taste and preferences through consumption practices particularly important in the production of class distinctions. The proliferation of automobile models since 1991 created a new, dynamic consumption landscape in which new models, and thus new potential social identities, were being produced at a high rate. This brought about a virtual collapse of the earlier bi-polar Ambassador-Maruti social hierarchy, through the incorporation of an ever-greater variety of vehicles. This increasingly rendered the Ambassador a charming but outdated car of 'Old India', leading to the suspension of its production in 2014. The production of the Maruti 800 stopped the same year.

The Making of the Nano

To understand the rise and decline of the Tata Nano, it is important to be mindful of how its prolonged planning, design and production process played out in this rapidly changing consumption landscape. The idea of producing a genuinely inexpensive car for 'the people' took shape in the early 2000s. Having observed how mass transport in India is often not available or is of poor quality and that two-wheelers are an unsafe mode of transportation for a family, Ratan Tata, the chairman of the Tata Group at the time, was motivated to create a safer alternative for Indian families.

Tata's vision was shared among industrialists and politicians. During his inaugural address at the 2004 Auto Expo in New Delhi, the then Deputy Prime Minister, L.K. Advani, had stressed the importance for the nation of exploring new ways to produce and promote affordable transportation for the great Indian multitude. Advani had asked rhetorically: 'If only we had a people's car costing no more than INR 100,000, how many millions of people would be queuing up to buy it?' (quoted in *The Economic Times*, 2004).

While most auto manufacturers questioned the feasibility of producing a car priced at only INR 100,000, Ratan Tata boldly responded to the Deputy Prime Minister's statement by declaring that 'the one *lakh* car is under development' (quoted in rediff.com, 2004), reassuring critics that it would be a real car, not a simple four-wheeled auto rickshaw or 'a car with plastic curtains and no roof' (quoted in Tiwari, 2009: 106). Clouded in secrecy, the penultimate design of the car was ready in 2005, and by

2006 the design was ‘frozen’. The fact that the car was kept behind a curtain of impenetrable security (Freiberg et al., 2011: 205) added to the mystique and excitement that surrounded the Nano prior to and during its launch in January 2008 when it officially received the name ‘Nano’.

Approaching the Launch

In the years leading up to the launch, the Nano was the target of considerable public attention. The establishment of a new Nano factory in West Bengal embroiled Tata Motors in one of the most controversial instances of coercive land acquisition for an industrial project in the 2000s (Nielsen, 2010, 2018), generating a measure of negative press. Yet when the focus was on the car itself, the public mood was upbeat. The Nano was described by some as ‘the most awaited car in the world’ (Hutton, 2009), and its success was virtually guaranteed since, as one journal wrote, Tata Motors had a history of being ‘adept at learning not just the needs but the hopes and desires of their customer base in this, “the most optimistic country in the world”’ (Bennett, 2008). And it continued: ‘Indians are very status-conscious, and the move to a four-wheeled vehicle is considered a huge event ... even a little USD 2,500 four-door can be a dream machine, a freedom machine’ (Bennett, 2008). A similar enthusiastic anticipation would mark the reception of the Nano at the launch itself, during which the media and the public had its first view of the new vehicle. As *Der Spiegel* observed, the Nano ‘grabbed more attention than anything shown at the North America International Auto Show in Detroit held the same month’ (Rowley & Srivastava, 2008).

Nano, Nation, ‘New India’

The enthusiasm and effervescence surrounding the Nano are, we suggest, not just about the car itself, but about the nation and national identity. As Edensor (2004) has shown, automobility and national identity are deeply intertwined and often mediated by so-called ‘iconic vehicles’ to the extent that certain cars can, like the Ambassador until the 1980s,

signify national identity. Cars are, in other words, loaded with national significance (2004: 102–104), and manufacturers and advertisers often seek to encode their vehicles with these symbolic national significations. In this regard, the Nano was no exception. On the one hand, it was aggressively promoted and branded as *the* car of 'the Indian people', a car for everyone. This 'connect' with the people was, for example, stressed on the Nano's official webpage that featured a section called 'Nano Diaries'. Here Nano owners would relate their personal experiences with driving the Nano, often on longer journeys traversing various corners of the country, thus inscribing the Nano onto the nation's physical geography.² On the other hand, the Nano also sought to symbolise the nation in other, more spectacular ways. In 2011, a special version called the Tata Nano Goldplus went on a 6-month tour of India, stopping at 29 Tata-owned Goldplus jewellery stores across the country. The Nano Goldplus was covered in 80 kg of gold, 15 kg of silver, and inlaid with 10,000 semi-precious stones and gems, including a jewel-encrusted peacock (India's national bird) on the front bumper, its design combining traditions of craftsmanship from different Indian regions. This car, worth an estimated USD 4.5 million, not only exuded affluence; it celebrated a famous yet diverse national tradition of skilled craftsmanship and tied the nation together by traversing its length and breadth for half a year.

Such marketing strategies, of course, beg the question: what 'people' and which nation are being signified? In our view, what is conveyed through the Nano is the idea of 'New India', an idea that at one level indexes the socio-political and economic realities that characterise India today, after decades of liberalising economic reforms and the increasing consolidation of capitalist markets of commodity production and consumption (Kaur, 2020). While one could potentially dismiss 'New India' as little more than a hyperreal construct, we here draw inspiration from Kaur (2012, 2020) in examining the significance of 'New India' precisely at the representational level, that is, as a symbolic construct that mobilises particular identities, desires and aspirations, and ideas about 'the people'.

'New India' sees India as 'a new world of enterprise, techno-mobility, consumption and fresh market opportunities' (Kaur & Hansen, 2016: 2) as embodied in its globally renown IT and ITES industry; its impressive

rates of economic growth during the first decade of this millennium; its global soft power spearheaded by Bollywood and its film stars; its capacity for attracting corporate praise and foreign investment; and not least its consumer-oriented new middle class that has been measured and celebrated precisely on the basis of its capacity and desire for consumption (Fernandes, 2009; Brosius, 2010; Saavala, 2010). And it is this new middle class that has increasingly come to stand in for 'the people' insofar as it has 'come to define and represent the nation as a whole' (Upadhy, 2011: 169–170). 'New India', in other words, is an India that wants to divest itself of its image as a developing country, emerging instead as an important actor on the global scene. The Nano, we suggest, was intended to tap into, and become iconic of, the ideas, desires, and aspirations of 'New India' in a fourfold manner.

First, the Nano was represented as a triumph of the determined, individual entrepreneurial spirit of Ratan Tata. Not only had this brought the Nano into being. It had seemingly also earned its rightful place in the global history of automobility, alongside other iconic 'people's cars' of the past such as the Ford T, the Beetle, and the Mini. In addition, Ratan Tata's personal success placed him alongside other new business 'icons' (particularly within the IT industry) who have garnered 'immense symbolic power for the aspiring middle classes' (Upadhy, 2011: 190) because they embody what an individual can, in theory, achieve not through inherited or ascribed social status, but through personal vision, acquired merit and hard work.

Secondly, the Nano firmly placed 'New India' on the global map as innovative nation capable of astounding engineering feats. Just how astounding this 'feat' appeared can be seen if we compare the price of India's 'people's car' to those other legendary 'people's cars' produced elsewhere: Adjusting prices to 2009 USD, Ford's Model T would have cost USD 21,000 and the Volkswagen Beetle USD 11,000 when first put on the market. The Nano was priced at only USD 2100 (Freiberg et al., 2011: 214), that is, one-tenth of the price of a Ford T. The Nano's affordability, in turn, allowed for a re-articulation with the traditional Indian valuation of frugality, albeit in new form. Both inside and outside of India, the Nano was hailed as the outcome of a distinctly Indian form of 'Gandhian' or 'frugal' engineering that aims to 'get more from less'.

Sometimes subsumed under the Hindi word *jugaad*—a term initially used to describe jury-rigged, self-repaired bricolage vehicles—such frugal engineering re-articulated within global business and marketing jargon comes to denote a special kind of shrewd, entrepreneurial, improvisational Indian *savoir-faire*, a sense of Indian genius that makes the most out of limited resources (Birtchnell, 2011; Jeffrey & Young, 2014).³

Thirdly, the Nano was represented as an emancipatory invention, simultaneously playing a key role in national development, *and* holding out the promise of democratising automobility by making a new and affordable form of personalised transportation available to 'the people'. In this context, it is significant that the Tata Group has a carefully crafted public image as a business conglomerate imbued with a larger social purpose, known for its nation-building ethos and philanthropy. The popular rhetoric surrounding the Nano thus resonated strongly with dominant tropes of national development and upliftment, and with the Tata Group's historical contribution to these.

Fourthly, and most importantly, from the point of view of sales, the Nano was represented as appealing directly to middle-class aspirations and desires for personal mobility and social status. The 'people' indexed by 'the people's car' was thus in key respects the new middle class. From the vantage point of the middle class, the Nano had obvious practical advantages compared to other forms of mobility. The choice of when, why and for how long to travel is, with a car, no longer subject to the vagaries of often crowded and uncomfortable public transportation; one is spared unpleasant situations of close, physical proximity with society's lower orders on crowded busses (Saavala, 2010: 117–118); one is less impeded by the monsoon rains that makes travel by bicycle or motorbike difficult; and in a car, one is sheltered from the high rates of air pollution and suspended particulate matter that plague major Indian cities. But as Ananya Roy (2011: 267) has argued, the crucial appeal of the Nano was its capacity for symbolically becoming a 'phantasmagoria of middle-class consumption', as she puts it: an elusive and malleable object that could embody shifting desires and aspirations for physical and social mobility, status, comfort and affluence among 'New India's' middle class (see also Hansen et al., 2016).

In this fourfold way, then, the iconic Nano powerfully synthesised key characteristics associated with ‘New India’ at the level of the nation and the people, but also at the level of the family and the individual: personal achievement through individual merit and determination; the realisation of middle-class consumerist aspirations; mobility for the people, both spatial and social; national development; and a global reputation for creative innovation. Yet in practice, this synthesis would be difficult to sustain over time.

Hitting the Road

The first Nano only hit the road in mid-2009. The initial demand was so great that Tata Motors decided to institute a lottery to decide the owners of the first 100,000 cars among more than 200,000 orders, and second-hand models were soon reported to cost up to 30 per cent more than the original price—such was the demand that consumers were willing to pay more for a used model rather than wait a few months extra for a new car.

By most accounts, the Nano was an efficient, manoeuvrable and reliable car. Equipped with a 624 cc, twin-cylinder engine with a 35 HP output, the small car of around three metres in length easily accommodated four passengers. And with a maximum speed at around 100 kilometres per hour, it had no difficulties keeping up with larger vehicles. Many expert test drives reviewed the Nano relatively favourably, identifying its affordability, fuel efficiency and utility in cramped urban traffic as its main strengths. The UK-based *Autocar*, for instance, described it as ‘an amazing car’ and a truly Indian contribution to ‘the new world of motoring’.

However, the initial flurry of euphoria soon subsided. This was partly due to engineering problems that caused a number of Nanos to spontaneously combust. Several cases of faulty electrical switches that caused smoke and melted plastic components were also reported, alongside a number of other production problems, delays and technical snags. These contributed to plunging Nano sales: despite a production capacity (and projected sales rate) of more than 20,000 vehicles per month, Nano sales would generally hover between 3000 and 8000 per month. It would very

rarely exceed 10,000 per month, but would often drop to around 1000 or even less. For a car that (admittedly over-optimistic) estimates had suggested would expand the Indian car market by upwards of 65 per cent (Tiwari, 2009: 107), these were very modest sales figures indeed.

According to Carl-Peter Forster (interviewed in *The Economist*, 2011) who took over as head of Tata Motors in February 2010, engineering problems were not the sole reason for the Nano's poor performance. When the car was launched there was no real national distribution scheme, very little marketing and advertising, and no effective system of consumer finance. The large majority of the Indian people therefore never got to hear about or have the opportunity to see the car that would ostensibly transform their lives. A significant part of Nano's marketing problems in fact began with its product positioning. The *real* price of the car—including taxes, etc.—was around INR 140,000, putting it out of reach of first-time buyers with no access to formal credit. In an ironic way, then, the Nano's status as iconic of 'New India' was refracted through the prism of an 'Old India' in which 'technical snags' in production; poorly targeted marketing and advertising; lacklustre infrastructure; inefficient distribution; the lack of dealers in small towns and rural areas; and a lack of institutional credit prevented 'the people's car' from actually reaching 'the people'. Yet, in addition, India's shifting consumption landscape that we described above also crucially shaped the reception of the Nano.

From Affordable Car to 'Cheap' Car

As stated above, people use cars to make statements about themselves and their families (Wilhite, 2008: 127). As mobile symbols, the car 'materialises personality' (Sheller, 2004: 225) and projects to the public how we like to see ourselves, and how we would like others to see us. They convey and connote images of status, wealth and social standing in public spaces in a manner in which no other commodity can (Hansen, 2017). But, in this domain of status and social standing, the line separating frugality from cupidity; moderation from excess; and not least affordability and cheapness is a fine one that is prone to shift.

The Nano had been made affordable by keeping production costs low. This was a source of pride and achievement for Tata Motors insofar as it documented unprecedented innovation skills on the part of Tata's designers and subcontractors. But, from the point of view of consumers, the insistence on keeping the price low meant doing away with the potential to symbolise something more than the buyer barely managing the economics of a move to four wheels. In short, the low production costs meant that there was nothing to brag about. Indeed, as one reviewer lamented, the base Nano was pure minimalism: a manual gearbox with four speeds; no power steering; no ABS, no vacuum booster for the four-wheel drum brakes; only one windshield wiper and one side mirror; only one gauge (the central speedometer); no heater and no ventilation system (Hutton, 2009); and thinly padded nonadjustable seats. The Nano, in other words, exuded frugality. But these values had by the time the Nano hit the road increasingly reseeded from the broader register of social performance among the new middle class, among whom bigger vehicles and a comfortable and lush interior design were now much more significant (Tetzlaff, 2013).

Ratan Tata had evidently been well aware of the delicate balance between cutting costs to ensure affordability, and the risk of projecting an image of 'cheapness'. Designing the Nano, he admitted, had involved 'saving money on every single bit of the car'. Yet Tata Motors had still believed that it would nonetheless be possible to produce the Nano without any quality stigma attaching to the Nano: 'One thing we were clear about: This was never going to be a half-car. Nobody wants a car that is less than everybody else's car', Ratan Tata had said (quoted in Noronha, 2008).

Yet in practice, the stigma of being a car that was in fact 'less than everybody else's car' soon attached itself to the Nano. As Hormazd Sorabjee, editor of *Autocar India*, put it: 'In communications, it's gone out as the world's cheapest car ... there's a kind of stigma attached to it, as though you can't afford anything else' (quoted in Dhume, 2011). Similar sentiments were reported in *Der Spiegel* in an interview with the prospective Nano owner Rajesh Malhotra in 2008 (Rowley & Srivastava, 2008). Malhotra had been contemplating exchanging his USD 1400 motorbike for a Nano but had started having second thoughts. Once

taxes and insurance costs were added, the price of the entry-level Nano would rise to just over USD 3000. For an extra USD 500, Malhotra claimed he could buy a decent used car with a more powerful engine and air conditioning, luxuries that the Nano did not have. He was therefore personally inclined to 'wait and see what others think' before going ahead with the purchase. In this, Malhotra was not alone. The stigma attached to the Nano alienated several categories of potential buyers and, as Tata's Managing Director said (quoted in Philip, 2013) in 2013 when the Nano's lack of popular appeal was evident, scooter drivers were not attracted to it because others 'don't think I'm buying a car, they think I'm buying something between a two-wheeler and a car'. Comparably, people who already *had* a car would not want to buy a Nano either, because 'it was supposed to be a two-wheeler replacement'.

In other words, comfort and engine power were not all that mattered to potential buyers. Public opinion and taste embedded in the broader consumption landscape were also crucially significant. As we have argued, this landscape is fluid, and the commercialised cultural markers that are used to define class status—or to distinguish affordable from cheap, or frugality from cupidity—may change very frequently. Yet within this fluid landscape, a particular 'dominant fraction' within the new Indian middle class arguably exerts a greater influence in terms of defining the standards against which the aspirations of other fractions of the same class and within the same landscape are measured (Fernandes & Heller, 2008; Brosius, 2010). Fernandes and Heller (2008: 150) argue that the dominant fraction of the middle class is engaged in a hegemonic project rooted in a politics of consumption that simultaneously holds out 'the promise of inclusion to other aspiring social segments even as it reconstitutes the subtle hierarchies and exclusions that anchor its class position'. The pursuit of this 'promise of inclusion' via consumption by those social groups aspiring to middle-class status has been described as a 'new sanskritisation' (Krishna & Bajpai, 2015: 74) whereby the emulation of elite practices reaffirm and reproduce hierarchy and distinction, even as these are transformed. As the case of the Nano shows, cars and car ownership figure crucially in these subtle processes of reconstructing distinction and exclusion. Here, the Nano has ended up at the lower rungs: It did not succeed in establishing itself as 'the people's car' because it was not and could not be incorporated

into the hegemonic project of the dominant fraction of the middle class; it rather acquired the tag as the car of that segment of the middle class who 'can't afford anything else', as Hormazd Sorabjee put it (quoted in Dhume, 2011). In this sense, ownership of a Nano came to be indexical of an incomplete or adverse inclusion into the new Indian middle class, and 'Nano rejection' in favour of other models conversely an aspirational refusal to occupy the subject position of an 'incomplete' Indian middle-class consumer subject that the Nano conjures up.

This rejection of the basic Nano and all that it entailed is brought out not simply by low sales across the board. It is also evident from how most early Nano-owners in fact preferred to buy the more expensive 'CX' or 'LX' models (Wells, 2010: 6) that came with extra features and conveniences such as air conditioning or an integrated music system. And, not least, it is evident in how Tata Motors soon began to rebrand the Nano in new ways to erase its stigma. This rebranding exercise and its attendant advertising campaigns show how Tata Motors has sought to manipulate brand desire by establishing a different kind of aspirational resonance with a new category of consumers: the cool people.

The Nano as 'The Cool People's Car'

By mid-2015, the 'basic' Nano had been removed from the Tata Nano webpage, which limited itself to promoting the three latest versions of the car.⁴ One was the compressed natural gas (CNG) powered Nano emax with bi-fuel facility, boasting what was at the time claimed to be the best-in-class CNG mileage at 36 km/kg. Launched in late 2013, the emax was projected as environmentally friendly, and as the smart, intelligent, and green choice for knowledgeable consumers conscious about their ecological footprint. Priced from INR 2.5 *lakh* upwards, it cost two and a half times as much as the basic Nano.

The second new Nano that emerged from the rebranding exercise was the Nano Twist, launched in early 2014. Described as a 'new smart city car' with 'cool, young and trendy features', the Nano Twist was, in the words of the President of Tata Motors' Passenger Vehicle Business Unit, created to cater 'to the dynamic desires of our growing customer base of

young, trendy urbanites' (Tata Motors Media Centre, 2014). The Nano Twist was available in a range of 'trendy' colours and came with a stereo and AC, as well as hubcaps and chrome trim. The price was comparable to the emax. The third new Nano to emerge from the rebranding initiative was the GenX Nano, a 'compact hatch' with automatic transmission, power steering, and new technology to facilitate bumper to bumper driving in dense urban traffic. Launched in mid-2015, prices ranged from INR 2 to 3 *lakh*.

The shift from branding the Nano as 'the people's car' to 'the cool people's car' was equally evident in the many promotional videos focused on the Nano Twist. These videos celebrated the 'awesomeness, youngness, kickassness, zigzaggness, cityness and magicness' of the Nano. They exclusively portrayed young, trendy urbanites having a good time, and highlighted the Nano's ability to manoeuvre effectively in urban traffic, as well as the ease of parking because of the car's compactness. Increasingly, then, the Nano came to be rebranded and redesigned to appeal to younger buyers looking for a car that was 'a little more aspirational' (McLain, 2013) than the basic Nano. Alongside this, it was also, albeit more discretely, rebranded as a family's ideal second or third car, a car for the 'youngster in the house', on the hopeful assumption that Nano ownership might thereby come to index a family capable of affording multiple cars. These new marketing and branding strategies, and the different consumer subjectivities and aspirations they appeal to—being environmentally conscious; a trendy urbanite; part of an affluent family; etc.—are undoubtedly more attuned to the real social location of the dominant fraction of the middle class that claims to speak for 'New India' and 'its people' as a whole. But the consequence of this repositioning of the Nano and its attendant increase in purchasing price was that the Nano's claim to being an affordable 'people's car' in the conventional sense was progressively undermined. The new key consumer group, the new people in 'the cool people's car', is far removed from the vision of 'the people' that originally inspired Ratan Tata to build the car, namely an average Indian family of four cramped onto a single two-wheeler.

In the event, Tata Motors' attempted repositioning of the Nano made little impact as sales continued to decline. By 2018, a mere 518 models were sold in the entire year, averaging a mere 43 cars per month. With

new and stricter Indian safety regulations and emission norms coming into effect in 2019 and 2020—with which existing Nano models did not comply—the company announced its decision to discontinue production, thereby signalling the end of the road for the people's car.⁵

Conclusion

Our account of the rise and fall of the Tata Nano has covered a period of close to two decades during which important shifts have occurred in India's globalised consumption landscape. This landscape is defined by an increasingly consolidated social dynamic in which commodities are seen as positive social identifiers, and where visible, aspirational consumption has become a key signifier of middle-class status. Here, the car is arguably one of the most important objects for conveying images of status, wealth and social standing. Parked in front of the house or transporting its owner and family through urban geographies, the car has become the perfect vehicle for and symbol of the 'new' Indian middle-class family (Saavala, 2010).

Prior to the launch, the massive hype surrounding the Nano indicated that the small car was expected to both tap into the tastes and desires of the 'New India' *and* to contribute to 'New India's' realisation, growth and expansion. 'New India' as idea, image or brand (Kaur, 2012, 2016, 2020) sees the nation as an emerging actor on the global stage, 'eager to make its presence felt in the global community' (Kaur, 2016: 14). The Nano aimed to both capitalise on and fortify this positive image through innovative, world-class engineering, appealing in the process to a thrifty and consumerist new Indian middle class, with the aim of outcompeting more expensive and luxurious foreign and domestic models. But as the termination of production shows, the Nano failed. A key explanation for this, we argue, is that in conception, design, and partly also in marketing, the Nano largely appealed to an older ethos of frugality and simplicity as positive social signifiers, an ethos which had, by the time the car was finally on the market, increasingly lost its positive connotations. Tata's design and innovation discourse, in other words, failed to engage sufficiently with important shifts in the possession and social positioning of

key consumer goods such as cars. More specifically, it failed to speak sufficiently to the aspirations of dominant fractions of the middle class who set the consumption standards against which the aspirations of other fractions of the same class are measured. The result was that the Nano came to acquire a dual set of negative identity connotations, signifying adverse or incomplete inclusion into the new middle class, and a consumer identity whose desires and aspirations could be fulfilled by a simple, cheap vehicle. The fact that the frugal Nano was incompatible with the aspirational consumerist desires and practices of 'New India's' middle class effectively deprived the people's car of 'a people'.

Notes

1. This chapter draws on Nielsen and Wilhite (2015) to which Hal Wilhite contributed significantly. He did not, however, have the opportunity to review or add to this chapter.
2. See <http://www.tatanano.com/worldofawesomeness/nano-diaries-submit/>
3. For a laudatory version of this argument, see for example Freiberg et al. (2011).
4. See www.tatanano.com
5. In early 2022, as this chapter was being completed, Tata Motors were ostensibly planning to launch an electric car based on the Nano, but details were scarce.

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8

Practical Aeromobilities: Making Sense of Environmentalist Air-Travel

Johannes Volden and Arve Hansen

Introduction

As a fundamental part of modern cultural and social life, air-travel is deeply embedded within global capitalism (Baer, 2018) and integral to worldwide mobility (Young et al., 2014). However, increased attention to the environmental impacts of aeromobility has made flying a form of what Keller and Halkier (2014) call ‘contested consumption’, well illustrated by the popular term ‘flying shame’ (Gössling, 2020).

The environmental costs of aviation are significant. Aviation is responsible for 2.5% of global CO₂ emissions, but the environmental ramifications are more complex.¹ Evaluating the climate effects of global aviation

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between 2000 and 2018, Lee et al. (2021: 13) conclude that ‘aviation emissions are currently warming the climate at approximately three times the rate of that associated with aviation CO₂ emissions alone’. All the emissions embodied in production and infrastructure add to these numbers. Despite this complexity, the aviation industry’s efforts to ensure sustainability rest on the speculative ‘promise of technology breakthroughs’ (Higham et al., 2019: 536) and a reliance on carbon offsetting schemes (Baer, 2018: 302). Until 2020, emissions reductions from improved technological efficiency gains have been cancelled out by increased demand and overall industry growth (e.g. Graver et al., 2019). It took a global pandemic of the magnitude of Covid-19 to break the long-term trend of massive and continuous growth in air-travel across the world, as travel restrictions and other infection control measures reduced global mobility and halted the aviation industry.

Most of the emissions from commercial aviation are the consequence of the mobilities of a relatively small group of ‘frequent flyers’, and air-travel is still reserved for the ‘kinetic elite’ (Cresswell, 2006: 240) of the world. In a recent study of global air-travellers, Gössling and Humpe (2020) note that, in 2018, only 11% of the global population travelled by air, and a mere 4% took international flights. More notable still is their conclusion that the most frequent flyers, which amount to 1% or less of the world population, are responsible for more than half of passenger air-travel emissions. These numbers illustrate the inequality of consumption-related environmental footprints and act as a reminder of the high-carbon lifestyles of wealthy consumers.

In recent years, air-travel has become a heated topic for public and academic debate, and anti-flying initiatives have proliferated. As one of the most emissions-intensive modes of commercial transport—only challenged by cruise ships²—a few flights alone may greatly affect the environmental footprint of individual consumers. Indeed, the positive environmental effects of an otherwise ‘green’ lifestyle are easily cancelled out by emissions from occasional flights (Higham et al., 2014). Yet research indicates that self-proclaimed ‘green’ consumers often continue to fly (McDonald et al., 2015) and that ‘pro-environmental attitudes’ have less effect on aeromobility than on routine practices (e.g. Alcock et al., 2017).

The apparent paradox has been explained as part of ‘the flyer’s dilemma’, defined by Higham et al. (2014: 462) as ‘the tension that exists between the perceived personal benefits of deeply embedded air travel practices and the collective climate change consequences of such practices’. This body of literature has tended to operationalise value-action gaps and cognitive dissonance to understand the consumption of air-travel (e.g. Hales & Caton, 2017) while paying less attention to the socio-structural conditions through which frequent flying takes place (Young et al., 2014). The aeromobilities literature has however demonstrated the deep societal embeddedness of aviation (Cwerner et al., 2009). As argued by Adey (2008: 1319) affluent societies are in many ways ‘made and constituted by air travel’. Indeed, the societal embeddedness of travel and movement, as well as how ‘the spatialities of social life’ presuppose movement, has been a central concern for the mobilities turn (Sheller & Urry, 2006: 208). Yet, as argued by Lin and Harris (2020: 604), the increasingly global reach of air-travel implies that ‘the need to understand how mobile lives are organised through aviation has only become more acute’.

In this chapter, we respond to this call and build on insights from the new mobilities paradigm (Sheller & Urry, 2006) to investigate aeromobilities from a sustainable consumption perspective. We are interested in understanding barriers to making mobility more sustainable, which would imply flying less. In doing so, we focus on Norway, a country with rugged landscapes where geography and infrastructure have contributed to making aviation a common means of domestic transportation (see Fig. 8.1). Indeed, Norwegians are among the most frequent flyers in the world.³ Specifically, in order to disentangle the societal embeddedness and stubbornness of unsustainable mobility patterns, we focus on the aeromobilities of a particular group of Norwegian consumers: those who are motivated to contribute meaningfully to combat climate change and protect the environment, and hence are acutely aware of the environmental ramifications of air-travels.

As a proxy for this motivation, we base our empirical investigation on interviews with 13 individuals actively engaged in environmental work through an environmental organisation, here labelled as *environmentalists*. We draw on a combination of mobilities and social practice approaches (see Verbeek & Mommaas, 2008; Hansen, 2017; Rau & Sattlegger, 2018)

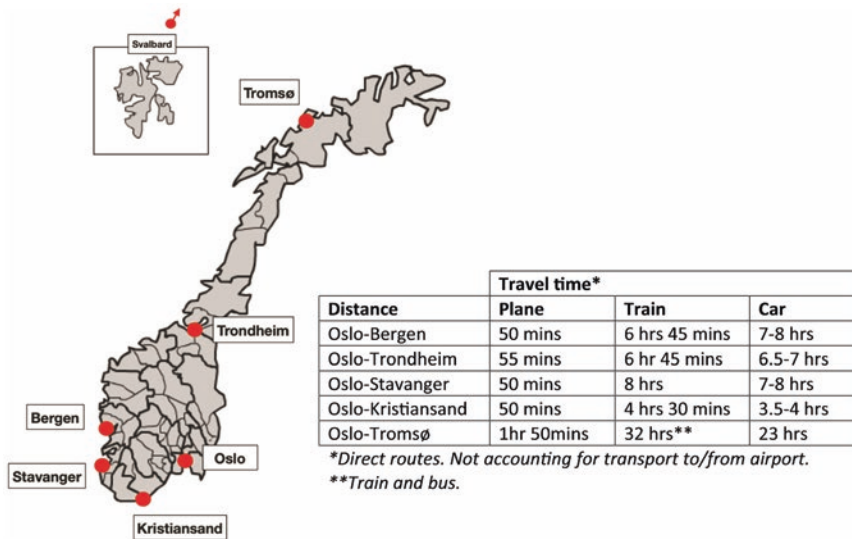


Fig. 8.1 Norway map and travel times. Note: The illustrative map is reworked by the authors. The original illustration is under the public domain. Source: Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Blank_Norway_district_map.png)

to explore environmentalist aeromobilities. Proposing a geographical approach to our understanding of practices, in which the spatial and temporal boundaries of practices are in focus, we argue that aeromobility contributes to the tempo-spatial expansion of many practices, changing their contents, meanings, and the contexts in which they unfold. With a case study of consumers that to various degrees attempted to limit air-travel in a highly aeromobile society, the chapter contributes to the mobilities literature with new insights to the barriers to sustainable mobility. More concretely, we add new insights to how ethical concerns inform mobility practices, by showing the active negotiations and dilemmas our participants engage in and the complex ways in which environmental convictions weave through practices but ‘compete’ with a wide range of other concerns, expectations, and requirements. By applying social practice theory to analyse the environmentalists’ aeromobilities we seek to bypass the prevailing dichotomy between structure and agency in the debates on

aeromobility consumption. Relatedly, the chapter contributes to the ongoing debates on the (bounded) agency of individual consumers as participants in social practices (Nicolini, 2012; Keller & Halkier, 2014; Gram-Hanssen, 2021).

In the following section, we explain our theoretical framework for analysing (environmentalists') air-travel in terms of social practices and their geographies, before presenting the chapter's methodology. We then turn to our findings, framed around the environmentalists' practices of, and sense-making tied to, aeromobility, before discussing the embeddedness of the environmentalists' aeromobilities within dynamic but temporally and spatially contingent practices.

Environmentalist (Aero)Mobility Practices

Practices and Aeromobility

Flying has clear 'practical' dimensions: First, while air-travel can be defined as an integrative practice in its own right, with its own sets of 'understandings, know-how and teleo-affective structures' (Warde, 2005: 150), it importantly forms part of and connects a wide range of other practices. Second, and relatedly, because air-travel allows for cheaper, longer (Pels, 2008), safer (Savage, 2013), and more frequent (Storme et al., 2017) and efficient travels, it opens up new avenues for carbon-intensive lifestyles and practices—as well as practice geographies—which in turn reinforce the dependence on flying. Moreover, as Adey et al. (2007: 774) have noted, much like how driving a car has become a dominant means of personal mobility, flying has become the 'normal international mode of travelling'.

The recognition of these 'practical' dimensions of aeromobility serves as a starting point for our inquiry into environmentalist aeromobilities. As such, the unit of analysis is not air-travels per se, but the overarching social practices of which these become part (Randles & Mander, 2009). Theories of practice come in many forms (see Welch & Warde, 2015 for an overview). We do not rely on a specific reiteration of social practice

theory but draw on a range of conceptual ‘tools’ from the social practices literature to make sense of aeromobility’s practical dimensions. Social practices are mediated through practitioners’ lifeworlds and the contextual backdrop of a situation anchored in a specific time-space. In other words, practices are ‘routinised type[s] of behaviour’ (Reckwitz, 2002: 249) producing ‘activities situated in time and space and shared by groups of people as part of their everyday life’ (Verbeek & Mommaas, 2008: 634). Central here is the ontological position—common across practice theories—that agency is ‘distributed’ between different material and immaterial elements (Sahakian & Wilhite, 2014).

According to Wilhite (2013: 62), the essential claim of practice theories is that actions have imbued in them ‘sociomaterial histories’. Practices are situated performances which must always be framed in light of their broader context (Reckwitz, 2002: 249) to be fully understood. While practices usually refer to specific ‘doings’ (such as queuing, boarding, sitting in the plane), practices might also be abstracted into general phenomena (such as ‘flying’; see Reckwitz, 2002: 249). In other words, practices can be either ‘integrated’ or ‘dispersed’ (Schatzki, 1996).

The embeddedness of aeromobilities in other practices is aptly summarised by Gössling and Nilsson (2010: 242), who note that ‘Air travel is becoming an ever more important agent of change in the development of increasingly mobile, globalized worlds, in that it shapes new perceptions of distance, space, and time, creating new ways of dwelling, travelling, and socializing in aeromobilized time-spaces’. With this deep embeddedness in mind, we are particularly interested in the *geographies* of practices—or more specifically how ‘time-space’ becomes socially constructed through practices (Simonsen, 2007)—and how these are changed and (re)produced through aeromobility. Attending to these geographies requires us to ‘zoom’ in and out between ‘the accomplishments of practice’ and ‘their relationships in space and time’ (Nicolini, 2012: 16).

Flying Environmentalists

Though frequently discussed in analyses of (un)sustainable consumer behaviour, ‘environmentalism’ is inconsistently applied and often not

defined. There are many ‘ideal’ versions of different environmentalisms: while their normative goal of protecting the environment is common across these, their proposed steps towards achieving sustainability may vary (e.g. Clapp & Dauvergne, 2005). Considering the growing awareness around environmental issues, including air-travel (Gössling, 2020), a wide group of consumers may self-identify with ‘environmentalist’ values. In this chapter, we have sought to bypass simply attitudinal accounts by focusing on individuals who are actively engaged in work oriented towards environmental protection and/or climate change mitigation. We henceforth label this niche group of consumers environmentalists.

The relatively active position of the practitioner in mediating aeromobility makes air-travel a fruitful avenue for practice-theoretical scrutiny. Theorising ‘the reflexive individual’ has been framed as a lacuna in the development of practice theory (Welch et al., 2020). We conceptualise environmentalists as practitioners with a particular propensity towards introspection and self-reflexivity pertaining to certain environmentally dubious consumer practices—such as, in this case, air-travel. While processes of deliberate ‘thinking and reflection’ are generally thought of as ‘mental and individualist’ and thus downplayed in practice approaches, they are ‘features of activity- in-practices’ which contribute to transforming practices over time (Hui et al., 2017: 6). As Halkier (2020: 1) notes, practices may be both mundane and routinised, on the one hand, and yet ‘discursively questioned’, on the other. Moreover, there are elements of symbolism and cultural expression in practices (Warde, 2005; Welch et al., 2020). The growing contestation around air-travel may thus affect practices, as consumers draw on public discourse to handle contested consumption and related normative expectations through what Keller and Halkier (2014) conceptualise as ‘performance positionings’. As such, although agency certainly is bounded and distributed, we ought not lose sight of the practitioners’ motivations (Reckwitz, 2017: 120) as *reflexive* actors within collective practices.

Although all consumers can be construed as reflexive practitioners (Halkier, 2020), we may assume that environmentalists are more reflexive about their air-travel habits—and other carbon intensive practices—than the average consumer. Analysing how these consumers deal with and

negotiate one of the most environmentally destructive part of their consumption patterns, and the barriers they encounter in trying to reduce air-travel, can thus provide novel insights into the stubbornness of unsustainable consumption patterns.

Conceptualising Environmentalism in Practice

Social practice theory has been widely applied to study the tacit and pre-reflexive nature of many everyday practices such as showering and cooking (e.g. Shove, 2003). The ways in which such mundane practices are performed depends largely on what Schatzki (1996) refers to as their ‘practical understandings’—that is, various ways of proceeding with, responding to, and going on with a given practice anchored in its unique socio-material context (Welch & Warde, 2017). While practical understanding belongs to the practice in question, practitioners draw on their ‘practical intelligibility’ when performing specific practices. To account for the ways in which environmentalism may affect practitioners’ more reflexive engagement with certain practices, however, we further rely on two other of Schatzki’s (2002) fundamental components of practices: ‘general understandings’ and ‘teleoaffective structures’.

‘General understanding’ is relevant when considering how environmentalism, in all its forms, may impact the performance of specific social practices. This concept refers to ‘normatively ordered arrays of ends, orientations, and associated affective engagements’ across practices (Welch et al., 2020: 326). General understandings cannot directly explain action (Gram-Hanssen, 2021: 10) but help us consider ‘the relation between culture and action’ in practices (Welch & Warde, 2017: 191), including both discursive and pre-reflexive aspects of this relation (ibid; Welch et al., 2020). ‘Conditioning’ practical intelligibility and the norms that underpin it, general understandings thus have an ‘organising’ or ‘integrating’ function in practices (Welch & Warde, 2017: 195). Environmentalism consists of certain ethics, and Gram-Hanssen (2021: 13) argues that ‘ethics’, as a form of general understanding, is ‘threading through many different practices, depending on the specific context and situation’.

In discussing how to understand ethical consumption through social practices, Gram-Hanssen (2021) furthermore argues that ‘teleoaffectivity’ is the defining aspect of practices. While general understandings (e.g. environmental ethics) cut across and ‘normatively condition’ (Welch et al., 2020: 76) many practices, teleoaffectivity infuses practices with a ‘purposive element’ (Warde, 2016: 40). In essence, the concept describes the ways in which practices (e.g. air-travel) are oriented towards certain ends or fulfilling certain goals, and how affect and emotion play a part in this orientation (Welch et al., 2020: 64). Each practice thus has a ‘teleoaffective structure’. As summarized by Warde (2016: 40), ‘teleoaffective structures’ represent ‘the purposive element of practices, the ends towards which engagement in the practice is oriented’. Engaging with the concepts of teleoaffectivity and general understandings help us consider the participants’ complex motivations for practicing aeromobility.

Methodology

To conduct this study, a sample of environmentally conscious/motivated individuals was required. Recognising the elusive nature of the ‘green’ or ‘environmentally conscious’ consumer segment, we decided to specifically target individuals who worked in, or had an active and committing engagement with, an environmental organisation.⁴ This way, we sought to avoid self-report bias: those self-identifying as being concerned with environmental issues, and more passive ‘support’ members of environmental organisations, were filtered out by default. The expected prerequisite knowledge of sustainable consumption and the environmental ramifications of air-travel among this group of particularly reflexive consumers enable insights into the stubbornness of social practices and the barriers to sustainable change in consumption patterns.

Thus, in-depth interviews with 13 Norwegians working for environmental organisation make up the empirical data for this study (Table 8.1). The participants did not represent the respective organisations with which they were affiliated. Participants were chosen through a non-probability, purposive sample, which was also to some extent based on snowballing. Participants were recruited by e-mailing several environmental

Table 8.1 Overview of sample

Participant	Gender	Age range	Life situation
Jarle	Male	25–30	Single, no children
Siri	Female	18–25	Single, no children
Egon	Male	51–60	Divorced, children
Mina	Female	25–30	Cohabitant, no children
Endre	Male	18–25	Single, no children
Julia	Female	31–40	Married, children
Silje	Female	31–40	Cohabitant, children
Frida	Female	31–40	Married, children
Maja	Female	25–30	Single, no children
Nils	Male	31–40	Cohabitant, children
Roald	Male	31–40	Cohabitant, children
Tine	Female	18–25	No children
Mikkel	Male	25–30	Single, no children

organisations with offices in Oslo, Norway. Eleven interviews were conducted in-person, and two on video call, in the late autumn and winter of 2018/2019. The interviews lasted up to 90 minutes and were recorded and transcribed in Norwegian. Quotes and expressions have been translated to English and all participants have been given pseudonyms. The research has followed the guidelines of the National Committee for Research Ethics in the Social Sciences and the Humanities and was reported to and ethically approved by the Norwegian Centre for Research Data.

In advance of the interviews, the participants filled in a questionnaire asking for simple, descriptive data such as name, age range, and household status, and more evaluative questions aiming to uncover the extent to which they engaged in certain activities relating to aeromobility. The questionnaire helped us ‘map’ the participants’ aeromobilities and develop appropriate interview guides. They were, for instance, asked how many flights they had taken in the past year. The questionnaire served as a prompt for the participants to reflect on relevant themes in advance of the interviews.

We conducted ‘semi-structured life-world interviews’ (Kvale & Brinkmann, 2009: 27), resembling informal conversations loosely aided by the interview guide. Through the interviews, we questioned what kinds of (aero)mobility practices the participants engaged with, and the reasons for this. The goal of the interviews was to both explain and evaluate the participants’ aeromobilities. In terms of evaluation, we sought not

merely to map aeromobilities, but to question how mobilities were negotiated by the participants. While participants were allowed to speak relatively freely, the interviews were guided by questions tied to, for example, reasons and motivations for (not) flying in different contexts, general travel practices, and their broader reflections on consumption and environmentalism. The interviews were first coded inductively, with a focus on themes brought up by the participants, and subsequently deductively, based on the elements of practices as described above. Through this process, analytical themes were organically construed from the data.

While there is some potential tension between a theoretical framework informed by social practice theories and their focus on ‘doings’ and a methodological approach best able to capture the ‘sayings’ of individual interviewees (see Halkier & Jensen, 2011), we subscribe to the notion that, to quote Hitchings (2012: 61), ‘People can talk about their practices’. The usefulness of interviews is furthermore obvious when discussing contested forms of consumption, as letting interviewees explain performances and understandings is necessary for understanding the negotiations and positionings they engage in.

Why (Not) Fly? Making Sense of Aeromobility Practices

In this section, we uncover how aeromobility was embedded into participants’ practices and their geographies. The environmentalists in this study displayed significant knowledge about their own environmental footprints. In different ways, and to different extents, they ‘discursively questioned’ (Halkier, 2020: 1) their practices and brought environmentalism into their performances. While they made efforts to maintain low aeromobility, all had taken one or more flights in the year prior to the interviews. Reasons for flying were many and layered, often revolving around maintaining social relations with distant friends, relatives, and peers in a daily life where time and money were limited resources.

Dealing with Distance: Aeromobility as a Solution to Geographical Constraints

The geographies of social relations had implications for the participants' aeromobility. As several participants had friends and family in different parts of the country—and, in some cases, the world—aeromobility played an important role in facilitating co-presence and maintaining social relations. Often cheaper and significantly faster than alternative modes, flying allowed the participants to visit loved ones relatively frequently, conveniently, and affordably. The spatial complexity and consequent mobility demand of modern life is well captured in Julia's account of trying to uphold relations with family not only in Northern Norway, but also across continents:

[Flying] ... it's important to our lives ... we have family in India too, and we don't have the option to go there very often, but now there's a wedding and stuff which makes us feel the need to go there, and we wish for our children to have a relationship with India ... an alternative is maybe to see the family less often, and we're maybe not willing to do that.

Similarly, Siri strictly moderated her aeromobility but found no alternative to air-travel when visiting her sister abroad: 'if you're going to Zimbabwe you have to fly'. She had also flown to save time when visiting family in Denmark: 'instead of ... a whole day it took an hour by plane'. These examples of the dispersal and stretching out of social ties demonstrate how aeromobility helps facilitate the maintenance of globalised social relations. Offering the possibility of physical co-presence across geographies, aeromobility reinforces 'linked lives', that is, the collective entanglement of practitioner-biographies (Rau & Sattlegger, 2018) and the broader intersecting of practice trajectories and geographies.

Research suggests that leisure activities have become increasingly travel-based in Norway (Aall et al., 2011). While seeing family was generally thought of as a necessity, the holiday—which is emblematic of leisure travel—presented a greater dilemma for the participants. Most participants had taken steps to reduce holiday practices which relied on air-travel. They sought to travel less often and less far. When travelling, they

considered the ‘necessity’ for (air-)travel (Gössling et al., 2019). Comparing her leisure trips with more purposeful travels, Siri explained that ‘I was ... on a little vacation in Scotland, and ... *that one* I felt bad about ... because it was kind of just a stupid little holiday’. Most participants sought to avoid typical ‘beach holidays’, framed as unsustainable and excessive. While Julia was unwilling to forego flights to visit family, she explained that ‘cutting out the beach [*Syden*] travels ... that’s much easier for me’. Yet Mikkel cherished his beach holiday. Incorporated into his yearly routine, this type of trip served a broader purpose than mere leisure. For Mikkel, it provided escape from the cold and dark Norwegian winter:

Holiday is important ... to, well, maintain motivation the rest of the year ... a reward or something (...) in periods when you’re fatigued and tired of Norway and snow, you want to relax ... about once a year, you have to get away, and in winter ... you might have to go so far that train travel is not an option.

The ‘beach holiday’ practice (*sydentur*) holds a certain cultural significance in Norway. The combination of a cold climate, dark winters, and an affluent population has made annual beach holidays a ritual for many Norwegians (Døving, 2011). It also serves as a clear example of the spatial expansion of Norwegian holidays to the extent that going abroad had become close to an expected part of summer holidays until the Covid-19 pandemic locked people into local and domestic travel, indicating a potential change in general understandings related to holidaying.

In sum, aeromobility expanded the possible geographies of practices tied to social connectivity and leisure. We now turn to how aeromobility affected the possible time-spaces in everyday life.

Convenient Aeromobilities: Competing Practices and Contested Temporalities

Changing expectations to convenience and comfort have been important drivers for the standardisation and normalisation of increasingly

resource-intensive consumer practices (Shove, 2003). Given mobility's situatedness within different social practices, convenience was particularly important when travelling. For the participants, convenience related to the extent to which the mobility fitted in with the broader practices of which it was part—and this was often about minimising time spent on mobility. The convenience of air-travel was thus attributed to the *speed of travel* that it offered, coupled with its reliability in terms of availability and affordable pricing. For instance, Tine explained that she had wanted to take the train home on Christmas Eve once but was persuaded by her father to fly to save time. Against the backdrop of everyday life, flying thus enabled flexibility compared to other modes of travel.

The participants described experiences of 'time-squeeze' in daily life, feeling that they had 'little time to begin with' (Egon). Having access to a high level of personal mobility—offered in large by air-travel—thus allowed for the 'shifting components of practices within time in ways that generated greater flexibility in personal schedules' (Southerton, 2009: 57). Shove (2009: 19) has proposed the term 'practice compression' to describe how time spending decreases; both in terms of specific practices and in terms of the intervals between these practices. Flying enabled 'compressing' practices to fit within designated timeslots. For instance, affordable tickets and short travel times allowed Jarle—the most frequent flyer in the sample—to spend 'several weekends a month' in his hometown: 'if it's a Saturday night—to be alone here or at a party [there] ... I'll choose the party ... as long as flights are cheap'. By shaping expectations and experiences of time in everyday life in this manner, practices not only consume but effectively produce time.

Conversely, maintaining low aeromobility oftentimes meant accepting reduced flexibility. In contrast to the flexible geographies of Jarle's social life, Maja's strict no-flying policy worked as a barrier for her to spend time with her family in another city. The train journey took upwards of seven hours, making weekend trips impractical. She explained that 'my mom ... wishes I would come more often ... so now she and my sister are coming [to Oslo instead] ... they fly, just to be here one day for my sake'. Maja's reluctance to fly in this case led to two people flying rather than one. Flying enabled 'compressing' the social visit to only one day or a couple of days because little time was spent on the move while at the same time expanding

the possible geographies of such an event. As with Jarle's example above, this made the weekend a viable time 'slot' for reunion, enabling connectivity without challenging the institutionalised schedule and rhythm separating (work) week from weekend (Southerton, 2009).

While flying *enabled* flexibility, avoiding air-travel required already *having* some level of flexibility. Some participants actively resisted air-travel in favour of other mobility modes. Spending more time on the move implied having to 'fit' other practices around the mobility. Siri travelled by train to and from Northern Norway in the summer to volunteer at a festival. When travelling home to Tromsø for holidays, Tine and some fellow colleagues would organise a train trip together to make a social event of the journey. Engaging 'slow travel' (Dickinson et al., 2011) in this way thus required some level of freedom and flexibility in orchestrating practice configurations which was not necessarily afforded those with tighter schedules or family matters to consider. It also, more often than not, required financial flexibility because alternative transport modes were generally more expensive. In addition to matters of travel speed, the relative costs of different transport modes reinforced aviation as a 'default' against which alternative modes were considered: 'so long as flying is cheaper ... people will choose that' (Tine).

The convenience of air-travel compared to other modes of transport was particularly revealing in the intersection between work and personal life. The interviews reveal a dynamic and interconnected relationship between work travel and daily practice, particularly for those in households with children. When travelling for work, flying was often seen as the most practical option. Air-travel was generally the most time-effective means of mobility, meaning that the participants could free up time for other, often family related, activities. Several female participants talked about the adaptations they had to make for work-travel to fit with family obligations:

If it's an alternative to take the train, and it doesn't take too long, I kind of want to choose that, but it has to do with travel time, because you have to make work and family go together (Frida).

[The] train takes longer time, and if it was just about me I wouldn't care about that, but I have a family who ... determines my [transport] choice (Silje).

As with leisure and holiday travels exemplified above, these examples of how family dynamics affect mobilities illustrate how practices compete for time and how their trajectories may overlap.⁵ Such practical negotiations of travel mode are pertinent examples of how 'social' and 'personal' temporalities intersect and reproduce each other through practices (Southerton, 2009).

While air-travel offered flexibility and speed, participants found flying to be 'uncomfortable' (Mikkel), 'cumbersome' (Nils), 'ineffective' (Egon), and 'a hassle' (Frida). Aeromobility was associated with a set of compartmentalised practices extending far beyond flying itself:

first you have to take the train to the airport, check in luggage, take your belt off, scan stuff, hang out in a sweaty waiting area, cramped, bad seats—and the same thing again when you land (Mikkel).

you spend a lot of time waiting, queuing, being controlled; then you transport yourself in a very cramped metal box with a lot of people and bad air (Egon).

In comparison, train-travel was thought of as a comfortable experience, characterised by a more seamless process: 'It's faster to fly ... but ... you can sit down on the train and *then you're there*' (Mina). Having previously lived abroad, Jarle had often opted for train instead of flying when travelling for holidays 'because it was more convenient'. He explained that 'the Eurostar train travels at 200 km/h and it takes two hours to get [from London] to downtown Paris'. These reflections reinforce the notion that efficiency of travel is central when consumers negotiate mobilities in daily life, and illustrate how expectations to the speed of travel change along with expanding practice geographies.

Flexible Aeromobilities: General Understandings and Environmentalism

In the previous two sections, we have shown how air-travel enabled geographical and temporal flexibility and allowed the participants to meet the tempo-spatial requirements of certain practices. Often, mobility mode was adapted to fit with broader practice requirements and not vice-versa. Inspired by Gram-Hanssen's (2021) work on theorising ethics within social practices, we now turn to how the participants 'made sense' of their engagements with aeromobilities as they negotiated mobility requirements in light of their environmentalism in different ways.

Having established that aeromobility served various functions in participants' lives, they nonetheless had different ways to position aeromobility in light of their environmentalism. This was reflected in the ways they described their relation to air-travel. Several participants felt they should fly as little as possible, underscoring some level of personal responsibility. Others emphasised that the environmental impacts of air-travel were not a zero-sum game:

[Being] part of contemporary society while working to improve this and that, I don't think those are opposing categories. Relatively speaking, I drive quite a lot; that, too, is a little odd, right, but it so happens that that's just how it is ... we still can't entirely escape the car in the same way that we can't entirely escape the plane (Nils).

The importance of air-travel in their work and personal lives was also emphasised: Mikkel underscored the role that aeromobility played in 'maintaining the motivation to continue fighting' for the environment through his work, and Frida argued that the weight of her work on environmental policy had larger impacts than her personal consumption practices. Jarle pointed to the potential socio-economic impacts of him falling into a depression and not being able to carry out his work due to his (aero)mobility being restricted. When flying, however, some described concrete strategies to alleviate impacts of their own aeromobilities, either by *compromising*—combining trips (Roald), flying one way (Maja, Silje), or prioritising certain trips over others (Mina)—or by

compensating—eating more vegetarian food (Siri), shopping less (Mikkel), or lobbying for more sustainable travel in the work setting (Frida). Such strategies offered compromise between performing sustainable consumption whilst ultimately engaging in aeromobility.

By ‘singling out what to do in specific situations’, variation in general understanding was reflected in varying ‘intelligibilities’ among participants for different mobility options or trajectories for practices requiring mobility (Gram-Hanssen, 2021: 13). In interviews, this was evident through participants’ considerations of the ‘viability’ of different mobilities in different contexts. Whether or not flying was seen as viable—‘within the limits of reason’, as Nils put it—compared to other modes depended on how practice elements were configured in each situation. ‘Viability’ was highly subjective, depending not only on the available infrastructures, or material settings, but on the meanings and competences applied to them by the participants (Shove et al., 2012).

In terms of specific travel arrangements, length and duration of a given trip as well as availability of alternative modes were considered. Although long-haul travellers have high environmental footprints (Böhler et al., 2006), the participants indicated that flying might be warranted to a greater extent when travelling longer distances (cf. McDonald et al., 2015)—for example, instead of spending ‘three days in a car’ (Nils) to travel to Northern Norway. However, what was considered a ‘short’ or ‘long’ journey was subjective: Tine and Maja would opt for ground travel from Oslo to Tromsø while Jarle and Frida both referred to a roughly four-hour train journey as a typical ‘cut-off’ distance for travelling on the ground. As noted, external factors such as travelling with others or dealing with expectations from friends and family affected what was considered the appropriate mode. ‘Viability’ in this context, then, does not merely describe a material condition but an expectation to, or contestation of, the (relational) temporal profile of practices.

However, they also qualitatively evaluated a given trip’s purpose. Flying for the purpose of upholding social relations was for instance seen as more justifiable than ‘flying on holiday to Tenerife to lay and daze in the sun’ or ‘flying to London to buy a purse’ (Nils): ‘if flying is the solution to maintaining a friendship, I won’t judge that ... more encourage,

perhaps; I think I might have been actively supportive, like, *yeah I think you should take that trip*' (Mikkel).

Attending funerals or visiting sick or elderly relatives was a recurring example of unforeseen situations for which environmentalism became less relevant altogether—any environmental concerns might be easily overshadowed by the 'urge' for being present (Storme et al., 2017). In such situations, not only were the mobilities experienced to be beyond the control of the participants but they were guided by strong affects. Relatively stable mobility practices could thus be disrupted (Rau & Sattlegger, 2018). On the prospect of attending a faraway funeral, Endre reflected

I think ... [sometimes you're in a] situation where you feel you have to go there, that you can't think like that ... you're a little, like, in the moment ... and then you think, I could've taken the train, but ... I wanted to sit one hour on the plane, and you don't save a lot of time, but you save a little, and right at that point, it was worth it for me.

Describing aeromobility as a means to an end, the participants underscored the 'purposive element' (Warde, 2016: 40) in certain air-travels. When working for an environmental organisation, flying was thought of as a 'necessary evil' and a 'tool for doing the job' (Nils), sometimes required 'to meet people in person' (Mikkel) or to 'make things go around' (Endre). There was a general sentiment that air-travel might be worth it if the long-term consequences of doing so likely constitute a net environmental gain (see Baer, 2018; Hales & Caton, 2017; Storme et al., 2017). Moreover, work flights were perceived to be the employer's responsibility as much as their own, as illustrated by expressions like 'it's for work, so I don't quite consider it *my* flying' (Nils) and 'privately I don't fly ...' (Egon). Having recently travelled to a country of the Global South for a work project, Mina explained that 'It's like I no longer think of it as air-travel ... I think of it as work ... as something important'. This compartmentalisation illustrates further how mobilities become integrated elements in broader practices, and how this affects both attitudes and recruitment to aeromobility.

In some instances, affect had a stronger mediating effect on participants' aeromobilities than any specific goal-orientation. While

consumers are able to identify past travels as unnecessary or unwarranted (Gössling et al., 2019), practices may not be characterised by this level of reflexive deliberation at the time of enactment. Several participants admitted to at times engaging in environmentally reckless, unjustifiable, or hypocritical travel practices. These were impulsively/spontaneously borne out of, in participants' own terms, 'fuck it' moments⁶: 'To say "fuck it", that's something I do from time to time, because, well, let's say I have some friends going on a weekend trip. It's like *OK I actually really want to join*, and then it's like—well ... *fuck it, I guess I'm joining*' (Silje). Talking about his beach holidays, Mikkel said that 'If [I need to defend my choice for] anyone ... it's myself ... you know it's wrong, but *fuck it this time*'. These scenarios describe moments in which participants with varying degrees of reflexive deliberation 'gave in' to the mobile expectations and possibilities created by specific practices and infrastructural arrangements. Self-reflection on personal aeromobility was thus mediated through what Molander and Hartmann (2018: 376) term 'teleoaffective episodes'—that is, moments in which participation in a given practice is negotiated based on expected, perceived, or experienced emotional and teleological outcomes—whether they occurred in anticipation of travel, during travel, or in assessing past travels.

In this context, while environmentalism certainly informed the participants' mobilities, it could not offer any direct explanation of them. The acceptance of aeromobility was contextually contingent, also affected by the 'teleoaffectivities' of different practices. This indicates that general understandings were affected not only by environmentalism(s) but also other practice elements. The participants employed various strategies to achieve mobility whilst reducing environmental impact. On these grounds, we may argue that 'viability' must be understood as constructed at the level of mobilities as practices and not simply attitudes or specific behaviours. Acknowledging this requires further attention to practices themselves, which we turn to in the discussion below.

Aeromobility and the Changing Geographies of Practices

The participants in the present study translated environmentalism into changes in consumption patterns—for example, by reducing or shifting mobility consumption—in different ways and to different extents. Similar to, for example, eating less meat, reducing personal aeromobility is in principle a rather straight-forward strategy for consumers to govern their environmental footprints. But although reduction in aeromobility may yield discernible results in some individuals' carbon footprint, our analysis indicates that reducing or shifting consumption at the level of the individual practitioner seems to have a limited potential to counteract the trend of expanding practice geographies and accompanying mobility requirements. Participants' aeromobilities were understood as incorporated into, and making possible, broader practices. Therefore, the environmentalists' aeromobilities must be understood in light of not only the particular practices that required flying, but also the changing geographies of practices in general. In this discussion, we therefore begin by 'zooming in' on specific aeromobile practices before 'zooming out' to consider broader practice geographies.⁷

Although all participants sought to reduce their own aeromobilities, which aeromobile practices they were willing to forego and which they felt warranted flying varied. While leisure air-travel was generally framed as an excessive consumption of aeromobility, flying was warranted when it contributed to some specified personal fulfilment—whether this was 'getting away' or gaining insightful cultural experiences. Moreover, in support of approaching contested consumption as part of 'a multiplicity of intersecting practices' (Keller & Halkier, 2014: 38), the participants' mobilities were 'filtered through' the needs and requirements from other practices and other people (see Warde, 2016). This was most evident in terms of work travel and fitting travel in with family obligations. Simply put, *not flying* often involved breaking with norms and expectations.

Given their interest in environmental issues, the participants engaged in a range of 'dispersed practices' (Schatzki, 1996) related to aeromobility: questioning, reflecting, examining, evaluating, and so on. Predicated

on self-reflexivity and self-awareness, these may be informed by environmentalism and other forms of general understanding. But air-travel, and activities that may require air-travel, are ‘integrated’ practices in which both general and practical understandings shape practice outcomes. We note a frequent tension between broad, ‘general understandings’ and particular ‘practical understandings’ of aeromobility; the latter rooted in the situational contexts of practitioners’ lifeworlds (Welch & Warde, 2017: 185), at times framed as practical obstacles for the objective of reducing aeromobility. While environmentalism, understood here as a form of general understanding, certainly feeds into the teleoaffective structures of aeromobility, so do other understandings related to convenience, sociality, temporality, and so forth.

While environmentalism might imply learning to resist unsustainable practices and to challenge shared conventions, the analysis thus suggests that broader social practices—and contextually dependent practical understandings in these—impacted environmentalists’ negotiation of their aeromobility. To use Ortner’s (2006) terminology, aeromobility enabled engaging and enacting with different ‘projects’ in the lives of the participants and their peers. Those who still flew often, emphasised the sacrifices they were unwilling to make, while those who flew very little emphasised how this affected their practices, mobilities, and everyday lives in general. Even those who felt a strong sense of personal responsibility were affected by external pressures to fly. And so, flying *in general* may be seen as an environmentally harmful overindulgence on the one hand, while flying *in the context of a specific practice*—for example, incorporated into a social event with friends—becomes a necessary element in that practice. Although one may arrive at the conclusion that a given trip was somehow ‘unnecessary’ through post hoc evaluation (Gössling et al., 2019), such discursive reflexivity in ‘hindsight’ may foreground ideological positions while neglecting in situ practice requirements.

More broadly, our analysis underscores that time-space is integral to social practices and illustrates how intensified aeromobility has contributed to changing tempo-spatial relations and perceptions of distance (Gössling & Nilsson, 2010: 242). In an increasingly mobile world, the famous ‘time-space compression’ (Harvey, 1989) of globalisation speeds up and spreads out practices and geographically stretches out social

relations (Massey, 1991). The demands for mobility ‘ratchet’ (Shove, 2003: 3) upwards: Consumers expect to be more mobile—to move from point A to point B faster, quicker, and more affordably—as different practices become stretched out in scale and meshed together. By making this mobility possible, air-travel opens up new avenues for participation in practices involving moving long distances in a short amount of time. In this sense, changing geographies and temporalities of practices are integral to the experience of societal ‘acceleration’ in modernity (Rosa, 2003).

A crucial point here is that temporal ‘data’ are encoded into practices. In this sense, practices *make* time (Shove, 2009). Embedded in practices are ‘conventions of duration, sequence and timing associated with the competent performance of a practice’—what Shove (2009: 25) terms ‘practice-time profiles’. Once air-travel has established a ‘baseline’ for temporal distance, this baseline becomes the standard with which other mobilities’ temporalities are measured. This was reflected by the separation between weekends and holidays—cemented in normatively organised institutional schedules—which affected the time-spending allowed for travelling between places.

While our analysis has emphasised how (aero)mobility is embedded in social practices through their changing ‘normative’ time-spaces, attention must also be put on the mobility infrastructures which make flying the quickest and often cheapest form of transport. Practices do not become ‘aeromobile’ because *flying* is paramount to the competent performance of that practice, but because air-travel may be the only mode of mobility which satisfies certain temporal requirements of practices. After all, even Jarle, who was a self-proclaimed flight enthusiast, had opted for the train when it was convenient for him whilst living elsewhere in Europe. Flying for work, social visits, or holidays can all be thought of as practices assembled through certain ‘infrastructure-practice configurations’ making ‘some trajectories more likely or seemingly more viable than others’ (Coutard & Shove, 2018: 21). Such configurations may be resilient and long-lasting. But new infrastructures can help reconfigure some of these practices. The year 2021 was nicknamed the ‘European Year of Rail’, as train infrastructures—including high-speed rails and overnight connections—are being built out across Europe (Smith, 2021), which may

accommodate for globalised practices to a greater extent without aeromobility. As none of the newly planned connections will reach Norway, however, aeromobility may still be easily incorporated into Norwegians' participation in a range of practices.

In sum, the geographies of practices change along with their temporal and spatial 'boundaries', that is, the normative or accepted ranges for time-spending and distance covered in specific practices. The timeslots reserved for practices are shrinking, while the spatial 'reach' of practices has been widening. Recognising this qualitative evolution in practice geographies is necessary to understand the stubbornness of aeromobility beyond matters of individual consumer agency or superimposed material structures. When also seen in context of existing transport dynamics and infrastructures, we argue, air-travel becomes a highly stubborn domain of consumption—even for environmentalists.

Conclusions

In this chapter, we have applied a social practices perspective to better understand Norwegian environmentalists' air-travels. By seeing consumption as defined by the practices within which it takes place, rather than as the outcome of the deliberations of rational consumers, the deep embeddedness of aeromobility in contemporary Norwegian society is exposed. As a central and often standardised aspect of contemporary global infrastructure, air-travel affects the organising of societal expectations of mobility as well as perceptions of tempo-spatial relations. Though environmentalists employ a significant level of reflexivity in their negotiations of (air-)travel practices, the chapter demonstrates that they, too, are not exempt from this embeddedness. As sustainability and environmental ethics become more established in general understandings of aeromobility it may also affect the teleoaffective structures of air-travel. However, as we have pointed to, the teleoaffective structure of air-travel was in various ways normatively 'conditioned' (Welch et al., 2020) by environmentalism as a general understanding, but other practical and general understandings affected the participants' aeromobilities. There are, in other words, competing general understandings as well as a myriad of

practical understandings of aeromobility which still makes air-travel a highly 'viable' form of mobility. Acknowledging this does mean underplaying the potential impact of environmentalist ideologies on personal consumption patterns, but rather reminds us yet again of the crucial role social and material forces play in mediating practice outcomes—which may be beyond the control of the individual practitioner.

By 'zooming out' (Nicolini, 2012) from the individual air-travel practice to also consider the broader practice geographies, we have showed how aeromobility has allowed an expansion of the tempo-spatial boundaries of many practices, which, in turn, contributes to changing the meanings, contexts, and tempo-spatial requirements of these practices. We have shown how air-travel allows participation in practices which require swift movement over long distances, and which are normalised and standardised into Norwegian society in different ways. While air-travel can be thought of as a practice in its own right, our qualitative analysis illustrates that it is, perhaps more importantly, a part of many other practices. We argue that many practices, though not necessarily *requiring* air-travel, come to operate at aeromobilised scales, within 'aeromobilised time-spaces' (Gössling & Nilsson, 2010: 242), as societal events speed up, spread out, and compress. Unlike other forms of unsustainable consumption—for example, meat—there are often few immediate alternatives. Thus, we argue, we cannot focus solely on air-travel but need to pay attention to the aeromobile practices which are part of the fabric of contemporary societies. This illustrates how mobilities and geographies reproduce one another: aeromobility has created new baselines for viable travels, which in turn create new practice geographies and mobile lifestyles.

A decade ago, Urry (2012) asked whether mobile lives have a future. Our findings show that there at least are significant barriers to sustainable mobility. First, stubborn practice geographies may present a 'lock-in' to high (aero)mobility—also, to some extent, for environmentally concerned consumers. Second, the challenge of confronting aeromobility requires more than appealing to the morality of individuals. On these grounds, neither technological fixes nor consumer campaigns seem capable of sufficiently reducing the total environmental impacts of aviation. Change may be achieved through policy measures,

however, as Norwegians have been found to be comparatively approving of government intervention to restrict air-travel consumption (Higham et al., 2016).

Our analysis indicates that reaching this normative goal will require acknowledging—and further investigating *how* and *to what extent*—changing geographies of practices affect demand for mobility. Developing an understanding of the mobility requirements of practices may aid the process of facilitating alternative practices with lower mobility requirements as well as thinking through how more sustainable transport infrastructures can be leveraged in practices currently performed through aeromobility. In this pursuit, the mobilities research agenda can benefit from insights from the sustainable consumption field, in particular when it comes to the bounded agency of consumers and the negotiations they engage in as participants in mobility practices.

In closing, we note that, although geographical *expansion* of practices has been the norm, the Covid-19 pandemic has demonstrated that a geographical *retraction* is also possible. By making slow, local, and digital (im)mobility the new norm for many consumers across the world (Cresswell, 2021; Adey et al., 2021), the Covid-19 pandemic may have already initiated the process of re-thinking mobility requirements of practices.

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Notes

1. For example, water vapour, nitrogen oxide, sulphate aerosols, and soot from the plane further trap heat within the atmosphere (Ritchie, 2020a).
2. See, for example, <https://grist.org/living/you-thought-planes-burned-a-lot-of-carbon-say-hello-to-cruise-ships/> (accessed 25 June 2021).
3. Based on 2018 data, Norway ranks number 13 on the list of countries in the world with the highest per capita emissions from aviation, and as number 3 for domestic flights (Ritchie, 2020b).

4. Note that the participants had different connotations to the term environmentalism, and thus the extent to the ways in which they *self-identified* as environmentalists (Norwegian: *miljøforkjemper*) varied. However, by working in environmental organisations they met our criteria for selection.
5. Research suggests that women in particular suffer from the overlap between work-related travel and the informal ‘work’ tied to the household (Southerton, 2009).
6. Both this English term and a Norwegian equivalent were used.
7. The concept of ‘zooming in and out’ of practices is borrowed from Nicolini (2012).

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Part IV

Wellbeing and Sustainable Consumption



9

Everyday Life and How It Changes: Studying ‘Sustainable Wellbeing’ with Students During a Pandemic

Marlyne Sahakian

Introduction

Semi-confinement measures around the COVID-19 pandemic led to disruptions in everyday lives, in particular when it comes to reconfiguring habitual and routinized ways of doing things—a central theme in a social practice approach to understanding consumption (Shove, 2012; Southerton, 2013; Sahakian & Wilhite, 2014). For those who were not on the front lines delivering necessary services, the home became a space where multiple daily activities unfolded, leading to experimentations with new ways of doing that challenged established practices. How changes in social practices relate to sustainable consumption outcomes is a growing field of inquiry. The starting point for such studies is often-times focused on specific resources and related consumption domains, such as the energy used for thermal comfort, lighting or laundry (Wilk & Wilhite, 1985; Wilhite et al., 2000; Wilhite, 2009, 2013; Sahakian,

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2014; Hansen et al., 2016; Godin et al., 2020; Sahakian, Rau, & Wallenborn, 2020). In more recent years, there have been attempts to bring a second normative aim into consumption studies: that of sustainable wellbeing or what it means to live the good life with respect for earth system dynamics and social justice issues (Wilhite, 2015; Guillen-Royo & Wilhite, 2015; Jackson, 2017; Fuchs et al., 2021). The aim of this contribution is to answer the question, how can a practice-theory approach to the study of everyday life during a pandemic tell us something about opportunities for more ‘sustainable wellbeing’?

Because the pandemic also led to disruptions in how classes were taught in the spring of 2020, 110 students in an undergraduate Sociology of Consumption class at the University of Geneva began to attend classes virtually about half-way into their semester. The data on which this study is based draws from the select journal entries of these students who spent the remaining part of the semester reflecting on how their everyday practices were changing, in relation to sustainable wellbeing. In the sections that follow, the conceptual framework of the project is presented, on how social practices satisfy human needs, and why social practice theory is relevant for uncovering everyday life dynamics. Second, the methods are introduced in relation to journal entries and the pedagogical approach. Third, an analysis of the data focuses on two main aspects: what changes took place in everyday life in relation to resource consumption, and how these changes can be related to sustainable wellbeing. Some of the main findings are discussed in the conclusion, along with reflections on how this study contributes to understanding change, in times of uncertainty and beyond.

Conceptual Framework

Sustainable consumption is an established field of research, teaching and action, that recognizes the roles of people—understood as consumers and citizens—in social change processes towards forms of consumption that are more environmentally sound and socially just. While the dominant understanding of change in the policy arena and among more behavioural approaches to consumption continues to be based on

information deficit models, whereby individuals need only be better informed to make the 'right' choices, a critical agenda has emerged in recent years, suggesting that the over-individualization of responsibility and forms of 'green', 'scapegoat' consumerism are insufficient towards the scale of change needed (Maniates, 2001; Akenji, 2014; Fuchs et al., 2015; Anantharaman, 2018). The appeal of individuals making better choices simply through receiving better information has been critiqued as oversimplistic and in-effective, in that it fails to recognize patterns of meanings, such as collective conventions, and existing material arrangements, such as infrastructures and technologies, that have a hold on how everyday life plays out (Shove, 2010). Further, much of the literature in sustainable consumption has started from the issue of resource constraints or environmental impacts—for example, through the identification of high environmental impact consumption domains, such as meat-based food, fossil-fuelled forms of mobility, and (over-) heated homes, in relation to energy and material resources. While this approach has generated important insights, it tends to consider consumption domains as silos, such as food, mobility, energy, albeit with much work uncovering the inter-relations between these domains.

There are two notable trends in sustainable consumption studies that act as a counter-balance to these issues. In the sociology of consumption, social practice theories have emerged as a growing field of inquiry, building on works by theorists such as Schatzki (2002) and Reckwitz (2002), and applied to consumption studies by scholars such as Shove (2003), Wilhite (2016), and Warde (2017), among others. In an attempt to overcome the structure-actor dichotomy in social sciences, this approach "moves the focus from cognitive and rationalist theories of action to embrace a theory of agency in which past experiences and the things with which the individual interacts are regarded as important to current and future actions" (Wilhite, 2016). Attention is given to the routinized and habitual nature of many consumption activities that may be 'in-conspicuous', but nonetheless significant in environmental terms (Shove & Warde, 2002). The complexities of everyday life—in relation to social norms and other meanings; material arrangements and things; and skills and competencies of 'practitioners'—are central elements in understanding how practices play out, building on Shove

and Pantzar (2005). A social practice approach seeks to describe everyday life, how it might have changed over time, but also how new practices might emerge or be revived in the future. Practices—such as shopping, preparing a meal or getting around—become the central line of inquiry, with a recognition for the natural resources on which they depend, but also their systems of provision, involving infrastructures and institutions (Fine et al., 2018). Thus, a social practice approach to consumption has emerged in an important body of research in relation to the topic of sustainable consumption.

The second promising trend relates to reflections on wellbeing in sustainable consumption studies, or what could be termed a salutogenic approach to sustainability—or an approach that supports wellbeing and prosperity, rather than avoiding harm, beginning with Jackson's seminal work (2017, second edition), and continuing with works by Di Giulio and Fuchs (2014), Guillen-Royo and Wilhite (2015), Brand-Correa and Steinberger (2017), Sahakian, Fuchs, et al. (2021) and Fuchs et al. (2021), among others. These approaches recognize that the environmental and social dimensions of sustainability require some reflection on what is the good life for all within limits. Limits are understood as biophysical, in relation to planetary boundaries for example, but also social, such as limits to time, space or capital; limits are not set by some external force or as an objective scientific truth, but rather result from societal processes and deliberations (Brand et al., 2021; Kallis, 2019). The notion of 'the good life' draws on the vast literature on human wellbeing, ranging from Nussbaum's capability approach to Max-Neef's needs based approach, or more hedonistic approaches based on happiness and life satisfaction that underpin World Happiness Reports. In particular, theories of human needs have been applied to the question of sustainable consumption and climate change (e.g., Gough, 2017; Brand-Correa & Steinberger, 2017, and Guillen-Royo, 2010). For Doyal and Gough (1991), human health, participation and autonomy form three 'basic needs'; for Di Giulio and Defila (2020), a list of nine needs have the potential to be 'protected', in that they can be assured by collectivities; for Max-Neef (1991), nine fundamental needs range from subsistence, protection and affection, to creation, identity and freedom. While these lists vary, they each aim at

identifying needs that humans must have in order to live a good life, without any hierarchical assumption as to what need should be satisfied first.

Of relevance to achieving the normative goal of 'sustainable wellbeing' is the significance of 'satisfiers' for meeting needs, or the means necessary towards achieving the goal of the good life. If human needs—such as being healthy in body and mind, or participating in society—have the potential to be shared by all humans, the means of need satisfaction are always dependent on social and historical contexts (Max-Neef, 1991). Sahakian and Anantharaman (2020) argue that it is through understanding the social practices of everyday life that 'need satisfaction' can be achieved. More than systems of provision, the enactment of practices—with associated material arrangements, skills and competencies and social meanings—is necessary to allow for any form of need satisfaction. The implications of this distinction are that collectivities could plan for the need satisfaction for more people, while limiting resource usage—what Jackson (2005) has termed the double dividend in sustainable consumption. Some promising developments towards this aim can be seen in efforts to develop sustainable wellbeing indicators at the level of a city or region, which emerge from citizen deliberations (Ottaviani, 2018).

While establishing goals and indicators towards sustainable wellbeing is useful, uncovering how established ways of doing might need to change is also necessary, or how and in what way practices associated with moments of consumption—such as buying food, riding a bicycle or the consumption of space in visiting a park—can be oriented towards sustainable wellbeing as a normative aim. Such changes can take place in moments of disruption, as was the case during confinement measures around the COVID-19 pandemic. At such moments, emerging practices can be further promoted, established practices might fade away or older practices might need to be revived. What learnings can be drawn from the pandemic towards supporting change in other, non-crisis instances? For this contribution, we apply social practice theory to understand how everyday life during a pandemic was changing for students, and what this means for more sustainable forms of consumption and human wellbeing.

Methods

The journal entry exercise was designed as a collaborative effort between scholars at nine universities in six countries, all of whom happened to be women, as a response to the challenge of teaching remotely during the COVID-19 pandemic (see Sahakian et al., 2022 for an overview of this exercise and an analysis of results across three countries). Students at the bachelor and master levels, at different universities, were invited to participate and asked to give informed consent for the anonymized use of their data.¹ For the University of Geneva study, the course material at the start of the semester had already brought into dialogue several fictive ‘personas’ representing varying theoretical approaches to consumption in a sociological tradition, inspired by the work of Gravey et al. (2017). Dorothea Distinction was used to represent consumption as a form of distinction, building on works from Veblen (1994/1899) to Bourdieu (1979). Carla Critical introduced critical theories to uncover how and why consumption occurs, with an emphasis on the role of production systems, from Adorno and Horkheimer (1944/1993) to Ritzer (1993/2000), while Penelope Practices was used to represent more recent developments in the sociology of consumption as it relates to social practice theory drawing on the works of Shove (2003), Warde (2005) and Sahakian and Wilhite (2014), among others. These personas (Fig. 9.1) allowed students to engage directly with different theories of consumption, recognizing that “There is no single, composite theory that works for all types of consumption in the home” (Wilhite, 2008: 3).² Students were invited to see the differences between approaches, any overlaps as well as any dissonance between authors within a same personification.

In the first virtual classroom after the semi-confinement measures were announced in Geneva, one student asked if it would be possible to work on how consumption was changing during the pandemic. We responded to this request and immediately reformulated the course programme around a journal entry exercise that would extend over the rest of the semester, and coordinated between several teachers in different countries. For the first phase, students reflected on how their everyday practices were changing during the semi-confinement measures. For the second

Dorothee Distinction



Carla Critique



P en lope Pratiques



Fig. 9.1 Different fictive personas representing conceptual approaches to understanding consumption (in French). *Note: drawings by Eva Leona Luvisotto, bachelor student, 2020*

phase, students were asked to engage with a list of human needs, selecting from among two: Max-Neef's matrix with nine needs and satisfiers (1991) (see Annex) and Di Giulio and Defila's (2020) list of nine Protected Needs. They were also introduced theories of needs. Students in Geneva went on to submit journals in two phases: first, they submitted three weekly journals on changing practices, and a second, three weekly journals on need satisfaction. Students were then given the option of exchanging with other students, based on the international network that was created for this teaching offer. The exercise culminated in group work between students at the University of Geneva, as a third assignment; students read each other's journals to identify commonalities and differences in their experiences, reflecting on the different socio-material settings they were based in.

Journal entries as a method allow for spontaneous expression and render changes over time more tangible, and are used notably to study the everyday (Gershuny, 2002; Kenten, 2010). They can express personal testimonies, everyday events, chronological details, contextual details, introspection (Hyers, 2018). Unlike daily journals, these solicited weekly journals included a series of questions that acted as prompts for student

reflections. For example, students were asked to describe how their consumption-related practices were changing in relation to specific domains (e.g., food, mobility, clothing and fashion), and to relate this to different dimensions of sustainability (e.g., environmental impacts and social justice). In a second phase, new questions were introduced on individual and collective wellbeing, with 'wellbeing' defined in relation to human needs theories. This exercise was thus a form of co-construction of knowledge between researchers, teachers and students, which aimed at encouraging reflexivity (Elliott, 2017; Kenten, 2010).

Two biases must be accounted for: first, the students were aware that their journals would be shared, with the course instructor and assistant, but also with fellow students, which could have hindered what they were willing to share in written form. That being said, we found that the journals revealed quite poignant testimonies and that students might have used them as a form of release during a difficult period. The group work was also graded, which may have influenced their participation. Students were informed that they could withdraw their consent to share anonymized and de-identified journals after grades were submitted. In all, 110 students participated, and 95 gave their consent to be included in the study. Most of the students were based in Switzerland, but some were living in neighbouring France during the quarantine period, a country that experienced more restrictive confinement measures. Some students were living in co-housing situations, others with their parents. In terms of gender, about two-thirds of the students self-identify as women, with most students in their 20s. The focus on a student population must be considered in the interpretation of the data, as many students do not have financial autonomy, may not have reached the life stage of car acquisition and are mostly not living alone nor with small children. Because the journals were structured around a series of questions, analysing the data across entries was facilitated; in addition to analysing the journals, an analysis of the group work was also useful towards assessing similarities and differences between everyday life dynamics among students.

Results: Changes in Everyday Life in Relation to 'Sustainable Wellbeing'

First, changes to everyday life in relation to sustainability is discussed, followed with an analysis of the second set of journal entries, on wellbeing and sustainability. To set the stage, Switzerland announced semi-confinement measures in early March 2020, which involved a recommendation to 'stay at home' as much as possible, as well as a limit of five people for any meetings, indoors or outdoors, and the closing down of primary schools and physical classrooms at universities. Unlike the confinement experienced in neighbouring France, staying home was an individual responsibility more than a mandate and people living in Geneva could go out for walks and for transit, without any need for justification. Shops identified as offering 'basic necessities' also remained open, such as supermarkets and pharmacies.

Changes to Everyday Life in Relation to 'Sustainability'

Journal entries during semi-confinement measures served to make visible the routine practices that were rarely questioned in the everyday lives of students. Three main trends were identified in relation to 'sustainability', which students understood mainly in terms of resource usage and related environmental impacts. First, much attention was paid to thrift and frugality, both in relation to managing financial resources, but also natural resources such as energy and water. Second, the journals revealed the ways in which students contested established norms, or how the confinement period led to new meanings, with different implications in terms of sustainability. Finally (and unsurprisingly, due to physical distancing measures in place), the journals stressed the importance of social relations in everyday life, which can be linked to the notion of wellbeing. These three main findings are detailed below.

Thrift is a common theme in the sociology of consumption, recognizing how shoppers value spending and saving in different moments of purchase (Miller, 1998). Yet, thriftiness can also be applied to other moments, in relation to the production of food waste, for example, or repair activities (Evans, 2011; Holmes, 2019). In their journal entries, students

expressed concern about thrift when it came to their financial expenditures, and took stock of their spending habits through the journals. For some students, an increase in consumption in some areas (such as more food) was offset by a decrease in spending in others (fewer leisure-oriented outings, or no transportation costs). A small number of students indicated the difficult financial situation they were facing, due to the loss of student jobs, and with insufficient support from their families. This led some students to closely monitor their food expenses. Food consumption was a central theme, as it was considered to be an unavoidable activity that took up more resources than usual in the context of confinement—in terms of time and money. Homemade food was prepared more regularly, whether living alone, with parents or with flat mates. Students who usually benefited from ‘grocery shopping tourism’ in neighbouring France were no longer able to benefit from the cheaper prices across the border.

Notions of thriftiness and frugality extended beyond financial concerns, to energy and water usage in particular. This was also due to questions in the journal exercise that prompted students to reflect on the ‘sustainability’ impacts of changing practices. Students recognized that consumption practices typically conducted outside of the home now generated more usage of water and electricity, and more food waste, inside of the home. Several students began to count how many trash bags they would generate in a given week, particularly in shared flats. Consuming in the home rendered resources and related waste more visible and more immediate. There were also insights on the links between public and private consumption, and how these change in different spaces, from school to home: some students realized that they used to charge their phones or refill water bottles, or discard food waste, on campus, and were now exclusively using home-based resources and generating much more non-food waste (packaging, mostly). Students also recognized changes in their own use of resources in the home: for some, showers and washing clothes became less frequent; for others, doing daily physical exercises at home meant more washing.

The meanings tied up with practices also changed for some students, particularly in relation to the occasions for which you dress, in adhering to what might be apprehended as ‘fashionable’. Students commented on how they dress differently, whether they are in a real or virtual classroom,

or whether they are alone or with others. Many students reported staying in the same comfortable clothes for the duration of the semi-confinement period, noting that they no longer needed to 'dress up' to go to work or university. The separation of work-space from home-space, in the past, seemed to justify changes in clothing and thus 'working from home' for some allowed them to reconsider this habit, and perhaps break with a more consumerist approach to everyday life (i.e., different outfits for varying activities and social settings). On the other hand, several journal entries mention dressing 'as usual' as a way of staying motivated and focused on their course work. Dressing up at home gave them a sense of purpose and normality, a sense of routine. Given the lack of material separation between private and work-space, and the more frequent disturbances to their work rhythm at home, a change of clothing allowed them to recreate a symbolic and embodied separation between leisure and work time: they would wear their 'street' clothes at home for work during the day, then change into 'home' clothes to mark the start of leisure time. This led to reflections for some on the sustainability of fashion-related practices: how they only needed a few essential items in their wardrobe, for example, or could make do without buying new clothes, but repairing what they had. Many students sorted through their clothes and reflected on what items were necessary and what were superfluous.

With more time on their hands and through this process of sorting, students also picked up new hobbies, or revived old habits. Here also, the quest for new and novel experiences—tied up with a more consumerist approach—is set aside, in favour of reviving old consumption habits and appreciating things that one already has (rather than purchasing anew). As in the example of this student, who explains ³:

In sorting through my stuff this week, I found old video games which, in normal times, might have ended up in the trash. But finally, when I turned them on again, I discovered the same pleasure I had when I was playing with as a kid, and playing these games has become a good pass time right now.

Food took on a new meaning as a hobby for many, in terms of enjoying more time to experiment with new recipes, but also eating food as a

pleasant moment in the day. For a minority of students, food was also a source of anxiety at times, as there could be long lines for accessing supermarkets, and preparing food more regularly in the home was seen as a chore. In a previous study in Switzerland, a clear distinction can be made between preparing food for special occasions, which can be seen as enjoyable, as opposed to the chore of preparing one or several daily meals (Godin & Sahakian, 2018). Some students presented photographs of the meals they had prepared in their journals, mentioning the new recipes they had mastered during the confinement period. Whether this led to more meat consumption or resulted in more food waste is not ascertained; based on the qualitative data, students were generally careful about what they spent on food, and on how they managed leftovers—claiming that in some instances, they had reduced food waste to a minimum.

The significance of social relations was a dominant theme, or how to maintain such relations from a distance and through virtual means. For many students, this was a source of anxiety and frustration, experienced as social deprivation. Several mentioned chatting with friends through windows giving onto the street, or visiting grandparents to share signs of affection from a distance, while avoiding physical contact and the trespassing of physical boundaries. As can be expected, students were highly connected through information and communication technologies (ICTs), although they also expressed a waning interest in social media channels, and frustrations around managing the multiplication of platforms for supporting social relations, from virtual classrooms, to online course materials, to social media tools, for communicating with teachers, peers or family members. The environmental consequences of increased ICT usage, for maintaining social relations but also for schooling and entertainment, meant a shift in burden from public spaces, such as classrooms and cinemas, to private spaces.

The degree of physical distancing depended very much on where students were based: for those who were in confinement in more isolated Swiss villages and after a period of quarantine, there were opportunities to see friends who lived nearby (the self-imposed quarantine period was seen as an opportunity to limit risks of contagion). Others, especially in the city, avoided seeing people in person for longer periods of time, which

was even more the case on the French side of the border, where stricter confinement measures were experienced. While for others still, the mandate to 'stay at home' was digressed with detailed explanations of why and in what way they justified physical proximity, for example, visiting family members, but staying at a distance and keeping windows open. All of the examples above point to the significance of social interactions in practices, as discussed by Halkier (2020), involving what is socially do-able in relation to others and how this was re-negotiated when restrictions were imposed by others.

In relation to sustainability, students were able to discuss reductions in consumption—of flights and fashion clothing, to cite the most common examples—as favourable to the environment. They were heartened by images in the media of nature taking over cities, but were also deeply touched by questions related to social injustice, another dimension of sustainability. An oft cited example was that of a free food-distribution service provided by a charity in Geneva, which made the headlines in international newspapers. It was surprising and even shocking for some students to recognize that people living in the prosperous city of Geneva would stand in a queue for hours, to access a free food basket valued at approximately 15 euros (minimum wage in Geneva is approximately 20 euros per hour, in a city which also boasts one of the highest costs of living in the world).

Relating Changing Practices to Sustainable Wellbeing

A first finding is that all students were able to engage with a list of human needs, and relate this list to their everyday lives; this is heartening, as bachelor students were only given one class on human needs theories, but then asked to reflect on one of two lists of needs (see Annexe A for the Max-Neef example). Three main insights can be gathered from an analysis of the data: first, students were able to detail what different activities lead to need satisfaction; second, they were able to distinguish between needs as something different from desires; and third, their insights led to reflections on individual and collective need satisfaction. I now present these insights in relation to the notion of 'sustainable wellbeing'.

Changes in practices across consumption categories—such as mobility, fashion or food—lead to need satisfaction in different ways; as one student put it, while their needs may not have changed, the means of satisfying needs certainly did. Students created new routines, such as going for walks in nature or preparing elaborate meals, as well as new moments of relaxation, through music, drawing or cooking. The physical distancing measures in Switzerland were experienced as a loss of mobility for some, who had to find alternatives for exercising, either at home or in their surrounding neighbourhoods. The borders between Switzerland and France, usually so fluid and open, had suddenly become visibly closed to protect people from some invisible enemy (Fall, 2020). One student who lives in a shared apartment with other students explained how a new routine was established, as a way to ‘perform activities that were valuable to them’ (protected need number 6, Di Giulio and Defila list) or a sense of ‘participation’ and ‘freedom’ from the Max-Neef list:

We started doing sports downstairs from our building, in the basement and in front of a communal space, with my flat mates. One of my flat mates decided to be our fitness and cross fit coach, it really did us good to move around a bit.

Having some sense of routine seemed to contribute to wellbeing. Thus, getting dressed, even if this meant staying home, was still important for many students—who lost the motivation to keep up their school work if they stayed in their pyjamas all day, as discussed above. Shopping for clothes was a habit certain people had prior to the confinement, and was a habit that could continue through online shopping for some. As another student put it, *“I noticed that my mother and some of my friends now buy clothes from the Internet to fill the void of shopping they feel because all the clothing stores are closed”*. A Swiss report on Swiss commerce in 2021 noted that the overall value of merchandise ordered online and at a distance increased by 25.8% in 2020, representing a three-fold increase compared to previous years (Wölflle & Leimstoll, 2021). But given the financial constraints, ‘shopping’ was performed somewhat differently: one student reported the thrill of shopping online and adding different items to a virtual basket, only to then skip the last stage of payment and

acquisition. Shopping, for some, certainly provides positive emotions, such as feelings of excitement or happiness, and can satisfy human needs, such as creativity, a sense of belonging, or living the life as you see fit. And yet some students also noted that shopping was not meeting essential needs, but rather more fleeting desires. This underscores an essential distinction that some students were able to make, between needs as something satiable and finite, and desires as something that seems insatiable and endless.

Contact with nature was important to many as a form of need satisfaction—as also uncovered in a recent study on wellbeing in green public spaces in Asian cities (Sahakian, Anantharaman, et al., 2020)—which involved visiting parks or taking walks in the countryside around Geneva. Some students also spent their confinement in more rural areas, such as their parents' secondary homes in the mountains, and were grateful to be out of the city and closer to nature. Many students noted the importance of public spaces and some form of connection with natural environments. While some felt that they were privileged to be in a secure and stable environment (in their words, based on their representation of what it means to live in Switzerland), and felt grateful to be able to continue with their studies, others found it very destabilizing to conform to new forms of discipline and security measures. As discussed above, some lost their student jobs and means of livelihood, which was a further source of stress. The need for affection and close physical relations was lacking for many. While social ties were maintained through new rituals, such as video calls with family members or group sports activities, many students developed a love-hate relationship with the technologies that facilitated their social relations but remained a poor proxy for physical proximity. Students craved for physical contact with nature, and with others.

In the literature on human needs theories in relation to sustainability, the distinction between needs and satisfiers is critical. Students were able to make this distinction in their journal entries; they could clearly identify the need for personal freedom and contact with others, noting how ICTs were one way of satisfying those needs. A good internet connection was essential for many students, but also access to computers and electrical power. ICTs, or more generally the socio-technical systems, that underpin connected devices, sports activities and cooking were noted as

‘synergic’ satisfiers for some students, in that they can satisfy multiple needs. They recognized their dependence on technological objects, however, and noted how reducing their usage of ICTs could also increase their wellbeing. Thus, as discussed in other studies (Guillen-Royo, 2020), ICT is ambivalent when it comes to need satisfaction and wellbeing: such devices can satisfy needs in some cases, but can also lead to harm in other cases, when used excessively. The students also mentioned the competences needed to not only manage new socio-technical interfaces, such as online classes, but also skills for managing their workload autonomously.

The analysis on the difference between needs and satisfiers also shed light on how the students understood collective and individual wellbeing. For many students, staying at home was more than just a change in routine: it created a sense of stress and anxiety, in the moment of writing journals and in how they represented the future in their entries. At the same time, many had reflections on how their situation compared to that of others, with sentiments of strong solidarity—both in terms of how the national government was handling the pandemic ⁴ and in relation to small gestures of solidarity that they either read about in the media or experienced at the level of their buildings and communities. Many students put their situation in perspective with what they deemed to be other, less favourable situations, pointing out their access to a garden or other natural environment as an advantage, as well as spacious accommodation, access to a computer and connectivity or family support, depending on the case. Even for students living in small apartments in the city, there was a sense of gratitude at not being on the front lines working in ‘essential services’ (although one student did continue working in a supermarket during this period, and another student had care responsibilities towards another family and their two small children). Perhaps this somewhat rosy picture also relates to the timing of the journals, which took place at the very start of the first confinement; students may have felt resilient in the face of change and the consequences of sustained confinement and virtual classrooms on student health had yet to be made evident. ⁵

Some students did nonetheless testify to difficulties they experienced in terms of material arrangements and technology (e.g., spotty internet connectivity), but also mental, emotive capacities. For some, being alone

during confinement or being away from family members based in distant countries increased a sense of fear and anxiety. Some students noted a sense of anxiety over university exams, and increased course work during this period. The need for safety and security was both experienced and imagined, in that students reflected on how secure they felt, but also how they expected the future to unfold. This suggests a clear relation between individual and collective wellbeing, as expressed by one student: *“Our need for protection is altered and the reopening of the world increases our feelings of insecurity. Therefore, in order to maintain collective well-being, it seems necessary that individuals feel well cared for and safe.”*

Discussion and Conclusion

Being alone together, this is perhaps one way of summarizing how students documented their changing social practices—being confined, but sharing in this practice with many others. The confinement measures lead to an increased sensitivity towards bodies in public spaces, as distinct from a sense of safety experienced in private spaces. How students recall navigating these two realms led to reflections on how resources were used in different spaces, towards frugality and thrift, and also feelings of solidarity, towards friends and relatives, but also imagined communities—protected yet separated by physical distancing measures. Meanings around getting dressed or preparing a meal changed, in practice, but students also reflected on what they wanted to maintain as ‘normal’ in their future projects or what they would like to experience as a return to normality. For the latter, students discussed how confinement led to more ethical consumption practices, seen as a means towards wellbeing for some, or a deeper consideration for ecological and political commitments, perhaps due to more time for reflexivity. Mostly, students felt that their individual actions were part of a collective effort, to reduce the pressures on the health care system; some then carried this same reflection over to environmental issues, wondering why a similar collective effort could not be possible, towards reducing carbon emissions or adapting to climate change. Students reflected on whether or not they would keep

their new habits after the end of the confinement measures, for example spending and shopping less, cooking more and walking and cycling more.

The first wave of the COVID-19 pandemic in Switzerland led to a unique form of social change, based on government measures that required most people to suspend their routinized and habitual ways of doing, in a specific time and space configuration of a semi-confinement period and at home. A growing body of literature is emerging to document these changes in practice.⁶ There is no evidence that any ‘good practices’ might have continued once the measures were relaxed. This may be because the semi-confinement measures were imposed, rather than emerging through autonomous reflections and self-limitations, in the sense given to the terms by Gorz (1989). When the semi-confinement measures were lifted before the summer, the local press was quick to report on the endless lines of people waiting to eat out at newly opened fast-food restaurants, or shop in fast-fashion stores. There is also evidence to suggest that—for some people, with more financial resources than the students presented in this study—consumer habits did not die: people continued to shop from their couches, through online purchases, as attested through a sharp increase in online sales.

What does remain from the study, as a promising way forward, are the conceptual and methodological implications: it is possible to engage people in reflecting on the normative goal of need satisfaction in relation to everyday life, and for people to distinguish between needs and desires, but also between needs and their means of satisfaction. While the pandemic was a unique occasion for this particular exercise, such reflections can be achieved without it—as the work of Guillen-Royo (2016) demonstrates. Beyond the context of the pandemic, ongoing research has demonstrated that practices can be oriented towards more ‘sustainable’ outcomes when people willingly and voluntarily engage in some form of a change initiative. This was the case in a recent Living Lab project that engaged over 300 households in Europe to reduce indoor temperatures and wash cycles over a seven-week period, leading to reductions in energy usage, but also changes in routines that were sustained over time (Sahakian, Rau, et al., 2021).

In this notion of being alone together, there is also a reflection around how individual and collective wellbeing are to be understood and planned

for, in the future. For some, it was possible to have fewer needs satisfied, or to satisfy them differently, towards a broader sense of wellbeing at a societal level. For others, individual wellbeing must imperatively be maintained, along with collective wellbeing. For all, it was difficult to have restrictions imposed from above. Limits to consumption may indeed be good for us, and may give us the space and time needed to experiment with different ways of doing, but such limits would most likely need to be established through a participatory and deliberative process—as suggested in the ‘consumption corridors’ concept of upper and lower limits (Fuchs et al., 2021), while recognizing that all such processes are not devoid of power dynamics.

This study on changes in everyday life during a pandemic demonstrates that certain practices contribute more to sustainable wellbeing than others, at a collective level. How to plan for sustainable wellbeing requires grappling with the political economy of consumption, which leads to ‘bad habits’ associated with capitalist regimes, including a profit imperative (rather than a sustainable wellbeing dividend), and tied up with powerful forces that render more sustainable practices difficult to propose, let alone maintain over time (Wilhite, 2016). Following Guillen-Royo and Wilhite (2015), *“New thinking is urgently needed on the conceptual links and courageous policy makers are needed who are willing to experiment with a new genre of policy that puts sustainability and increased wellbeing ahead of conventional ideas of economic progress”* (p. 313). This is what a salutogenic approach to social change and more sustainable consumption implies, where everyday life includes reflections on the differences between needs and their satisfaction, between available resources and possible satisfiers, towards new meanings around what it means to live the good life in practice.

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Annex: Max-Neef's Fundamental Human Needs

	Being	Having	Doing	Interacting
Subsistence				
Protection				
Affection				
Understanding				
Participation				
Idleness				
Creation				
Identity				
Freedom				

Based on: Max-Neef, M. A. (1991). Human Scale Development Conception Application and Further Reflections. Zed Books Ltd

Notes

1. Ethical clearance was obtained through the Canadian partner, the University of British Columbia, file number H20-01222.
2. A full description of this approach can be found at: <https://www.unige.ch/innovations-pedagogiques/innovations/theatre-theorique-posters> (in French).
3. All direct citations have been translated from French to English by the author.
4. This support for government interventions will wane over time, with clear signs of resistance across the population during the second wave of semi-confinement measures some months later.

5. Early on in the pandemic, The University of Geneva made available a mental health hotline for students and staff, put in place by the Faculty of Psychology and Educational Sciences (FPSE).
6. A special issue on Disruption in Everyday Life: Changing Social Practices and Dynamics in Consumption is currently in press with the journal *Sustainability: Science, Practice and Policy*. See: <https://staging.www.tandfonline.com/journals/tsus20/collections/Disruptions-in-Everyday-Life>

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10

Towards Sustainable Transport Practices in a Coastal Community in Norway: Insights from Human Needs and Social Practice Approaches

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and Bjørn Vidar Vangelsten

Introduction

This chapter draws on wellbeing and social practice theory to study the elements that support a transition towards sustainable transport practices in Vågan, a municipality in Northern Norway. Inspired by an earlier work by Guillen-Royo and Wilhite (2015), we consider that wellbeing

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and practice-theoretical approaches are complementary and that together, they contribute to a deeper understanding of the societal transformations required to advance towards low-carbon societies. Practice-theoretical approaches do not focus the analysis of consumption on the individual but on the lifestyles and systems of provision that shape everyday actions and make them unsustainable (Spaargaren, 2003). Wellbeing research contributes to the analysis of practice through empirical studies connecting carbon-intensive practices, such as those related to commuting by car, to low levels of wellbeing (Chatterjee et al., 2019). It also provides evidence on the positive association between quality of life ¹ and the diverse array of elements that shape sustainable consumption practices such as sharing or reusing (Guillen-Royo, 2016, 2019; Kasser, 2017).

Guillen-Royo (2020) maintains that Max-Neef's (1991) approach to wellbeing as human needs fulfilment and practice-theoretical perspectives share an analytical strategy that departs from a focus on individual behaviour and a systemic perspective on change. Both understand consumption as embedded in a variety of processes that connect socio-economic structures with cultural understandings, norms, actions and the natural environment. At the same time, whilst practice-theoretical approaches focus on the detail of particular practices and the elements that detract or contribute to their reproduction (Sovacool & Hess, 2017; Watson, 2012), Max-Neef's perspective on human needs takes a look at the socio-economic system in which practices operate. Through a methodology based on participatory workshops, communities or local groups are encouraged to discuss how specific practices linked to need fulfilment, such as cycling to work, are interlinked with other practices, their constitutive elements, socio-economic factors and the natural environment in which they are enacted (Guillen-Royo, 2016).

This study analyses the results of needs-based workshops implemented in Vågan. This is a municipality with a population of about 10,000 in the Lofoten Islands, one of the most touristic regions in Norway with a relatively high percentage of people employed in the primary sector (5% compared to 1.3% nationally). At the time of the study, the municipality was engaged in the design of a sustainable development plan for the locality and the local Public Health Coordinator (PHC) collaborated with

researchers from Nord University to recruit local stakeholders as participants in needs-based workshops.

The focus of the analysis presented in this chapter is on transport practices. Car driving, cycling, ride-sharing, carpooling and bus riding were widely discussed in the workshops. In addition, sustainable transport was a key concern for local authorities as the increasing levels of road congestion and the escalating CO₂ emissions from road transport were reportedly affecting people's quality of life and harming the local environment (Vågan Municipality, 2019a). Thus, the general research question this study is set to answer is as follows: what are the interrelated elements that could support the consolidation of sustainable transport practices in Vågan? We draw on human need theory and practice-theoretical approaches to answer the question.

The next section describes Max-Neef's Human Scale Development (HSD) approach to needs and satisfiers and the associated participatory methodology. The third section briefly discusses the social practice approach to the study of local mobility and relates it to the HSD perspective on needs and need satisfiers. Section four introduces the particular features of local transportation in Vågan and elaborates on the workshop methodology, describes the characteristics of participants and the type of analysis. The fifth section presents the results of the study. First, it introduces transport practices as interconnected with other satisfiers that either hamper or promote need fulfilment locally. Second, it analyses the resources, norms and infrastructures likely to support sustainable transport practices in Vågan. Section six discusses the conceptual implications of the study and the relevance of the findings for sustainable transport policies in the municipality. We conclude by reflecting on the suitability of using a human needs perspective to study sustainable consumption practices.

Human Needs and Satisfiers

The Human Scale Development (HSD) approach is a proposal for development practitioners put forward by Chilean economist Manfred Max-Neef during the 1980s. It emerged at a time when development

perspectives focusing on industrial advancement and export-oriented programmes had failed in providing a good quality of life for the majority of the population in developing countries (Max-Neef, 1991; Smith & Max-Neef, 2011). HSD postulated that socio-economic development should revolve around: (1) community centrality, (2) balanced relationships (e.g., across governance levels) and (3) human needs fulfilment (Guillen-Royo, 2016).

HSD views human needs as both drivers for action and requirements for a good life, unlike other theories of need that focus on either of the two conceptualizations (Gasper, 2007). Thus, need fulfilment is not only understood as a normative prerequisite but as a goal pursued through everyday actions. In the HSD framework, needs are non-hierarchical, universal and change only with history. Societies, communities, groups and individuals (attempt to) fulfil their needs through *satisfiers*.

Distinguishing between human needs and satisfiers is one of the key contributions of Manfred Max-Neef to need theory (Gough, 2017; Guillen-Royo, 2016). Whilst needs are considered universal, satisfiers vary across cultures, traditions and socio-economic groups. As Max-Neef put it: ‘satisfiers might include, among other things forms of organisation, political structures, social practices, subjective conditions, values and norms, spaces, contexts, modes, types of behaviour and attitudes, all of which are in a permanent state of tension between consolidation and change’ (Max-Neef, 1991, p. 24).

Max-Neef represented his approach to needs with a matrix where the first column featured the nine fundamental human needs (FHN) of subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom. The first row included the four existential categories of having, being, doing and interacting. As illustrated in Table 10.1, the intersection between FHN and existential categories defines satisfiers, which are conceptually different from economic goods or artefacts. The latter contribute to or detract from the capacity of satisfiers to meet needs depending on the way society is organized.

Given the extent of environmental destruction of current models of economic development, not all satisfiers are equally efficient in meeting needs. Max-Neef (1991) identified five types of satisfiers and qualified them with respect to how effective they were in meeting needs. Two

Table 10.1 Matrix of needs and satisfiers (template)

	Being (individual or collective qualities)	Having (resources, tools, institutions, norms)	Doing (personal or collective actions)	Interacting (settings and environments)
Survival				
Protection				
Affection				
Understanding				
Participation				
Idleness				
Creation				
Identity				
Freedom				

Source: Max-Neef (1991)

types, *synergic* (meeting more than one need) and *singular* (meeting one need) were considered positive for societies. The other three, *inhibitors* (over satisfy one need whilst hampering others), *destroyers* (frustrate meeting the need they aim to) and *pseudo-satisfiers* (seem to satisfy a need in the short run but obstruct its satisfaction in the long run) were considered detrimental for need fulfilment. For example, Max-Neef (1991, p. 33) suggested that censorship and bureaucracy should be categorized as destroyers. He considered that by attempting to meet the need for protection, they hindered meeting the needs for understanding, participation, creation, identity and freedom.

The type of satisfiers that predominate in any given society define the extent to which needs are fulfilled. However, attention must be paid to the fact that Max-Neef did not consider one-to-one relationships as describing the link between needs, satisfiers and economic goods. His approach to needs is better understood as systemic, where path-dependency, co-evolution and disruptive events frame the emergence of satisfiers and shape their relationship with needs and economic goods (Guillen-Royo, 2020).

Despite the challenges associated with capturing complex and systemic relationships, Max-Neef suggested using the matrix of needs and satisfiers presented in Table 10.1 to organize participatory workshops 'for purposes

of diagnosis, planning, assessment and evaluation' (Max-Neef, 1991, p. 37). Workshops often follow three phases where: first, a *negative matrix* with detrimental satisfiers (destroyers, inhibiting and pseudo-satisfiers) is completed, second a *utopian matrix* with positive satisfiers (singular and synergic) is filled and third endogenous and exogenous *synergic bridging satisfiers* are discussed (Centgraf, 2018; Guillen-Royo, 2016; Guillen-Royo et al., 2017). Several studies have drawn on the FHN approach to investigate particular satisfiers such as housing, energy services and transportation (Brand-Correa et al., 2018; Mattioli, 2016; Mitchell, 2001). Concerning the latter, Mattioli (2016) described car dependency as connected to a sequence of infrastructures and socio-cultural factors that render the satisfaction of human needs energy-demanding and, consequently, unsustainable.

Social Practice and Sustainable Transport

Following Max-Neef (1991), need satisfiers are conceptually close to the meaning of practices and their constitutive elements as understood by social practice theorists (Guillen-Royo, 2020). Social practices are generally defined as 'routinized type of behaviours' such as shopping, commuting or cooking that are shaped by a wide array of elements associated with people's lifestyles and existing socio-technical structures (Reckwitz, 2002; Spaargaren, 2011). The elements that are considered to constitute practices often encompass individuals' internalization processes, the material components of daily behaviours and the cultural and knowledge-based factors that shape them.

Shove and Pantzar (2005) consider materials, meanings and forms of competence as the elements that integrate practices, whilst, for example, Warde (2005) stresses the role of understandings, procedures and engagements. Conversely, Wilhite (2016), in his research on habitual behaviour, follows Bourdieu (1990) in emphasizing the importance of embodied knowledge (the way that mind and body interact) as the basis for the creation of habits defined as entrenched practices. Similarly, Koch (2020, p. 6) draws on Bourdieu to emphasize the difficulty in breaking established 'habitus' ('a system of structured and at the same time, structuring

dispositions in terms of thoughts, perceptions, expressions, and actions') that form the foundation of unsustainable lifestyles.

Despite the many perspectives on the constitutive elements of practice and the emphasis different authors put on any of them, what is common to most practice-theoretical approaches is the fact that the analytical focus is on the elements' interconnection and dynamics (Halkier, 2013). This resonates with the systemic perspective of the HSD approach as interactions between needs and satisfiers, and between satisfiers, are not explained in terms of one-to-one relationships but considering complex dynamics based on co-evolution, trade-offs and simultaneities (Guillen-Royo, 2016).

The co-evolution of elements of practices characterizes the reinvention of old practices and the diffusion of new ones (Shove & Pantzar, 2005). Nevertheless, practices do not usually change in isolation, but often do so as other related practices change. Watson (2012) illustrates this point with the example of the practice of driving, which he argues depends 'on a wide range of other practices, from those of transport planning and road building to fuel providing and maintaining' (Watson, 2012, p. 491). Watson introduces the term 'systems of practice' which considers in addition to the co-evolution of practices, the systemic relationship between its components (norms, meanings, rules, infrastructures, technologies, etc.). This is of particular interest in our study, as we consider that the concept of *need satisfier* includes many of the constituent elements of practice.

Transport-related practices involving cars, motorbikes and bicycles have been widely analysed using practice-theoretical lenses (Hansen, 2017; Kent & Dowling, 2013; Warde, 2005; Watson, 2012). For example, Hansen (2017) studied mobility practices in Hanoi, specifically motorcycling and car driving, considering the interplay of Sahakian and Wilhite's (2014) three pillars of practice: *the material*, including infrastructures and technologies, *the social*, accounting for institutions, values and norms and *the body*, encompassing both cognitive and physical experiences. In his analysis, Hansen emphasized how everyday mobility practices co-evolved with structural changes in Vietnam. Since the economy was liberalized in the 1980s the motorcycle industry experienced a rapid expansion, working and everyday life increased their pace and shopping

malls and high-end restaurants mushroomed throughout the city, all shaping urban mobility practices.

How elements of practice co-evolve is also addressed in Kennedy et al.'s (2013) study of sustainable transportation in Edmonton (Canada). The authors follow Spaargaren (2003) and Southerton et al. (2004) and study practices from the interplay of the *resources*, *norms* and *infrastructures* that shape them. Concerning resources, they find that skills such as fixing bicycles enable the establishment of social networks (social capital) among individuals interested in cycling as a mode of sustainable transport. Norms as unwritten rules and expectations diverge across neighbourhoods, and the researchers find that when people move to areas where unsustainable value systems are prevalent, mainstream norms of unsustainable practices are adopted. Finally, the study points to the fact that access to infrastructures such as public transportation or cycling trails and the distance to points of interest (schools, work, cafes, etc.) influence the degree to which individuals opt for sustainable forms of transport.

A social practice analysis provides a detailed understanding of the social, cultural, economic and infrastructural factors that shape practices whilst giving a particular attention to materiality and bodily performance. However, this attention to the micro-level might limit the usefulness of practice-theoretical approaches in informing systemic change. Whilst Watson (2012) suggests studying 'systems of practice' in order to bypass this limitation, Brown et al. (2013) maintain that an alliance with other related theoretical perspectives might be desirable, and that new economics, social practice theories and socio-technical transition studies can be used simultaneously to enrich each other's analyses.

Understanding HSD as a perspective within the 'new economics' paradigm, Guillén-Royo (2020) argues that social practice theories, socio-technical transition studies and HSD are complementary as they share several paradigmatic dimensions concerning a focus on analysis, systemic relationships and a view on change as reconfiguration. Koch (2020) adds that needs-based workshops could work as arenas where insights and inspiration can be gained to find ways to break the lock-in characterizing unsustainable habitual behaviour. The complementarity between practice-theoretical approaches and HSD will be explored further in this study with the example of transport practices in Vågan municipality.

Studying Transport Practices in Vågan

Vågan Municipality

Vågan municipality is located in the Lofoten archipelago in Nordland county. Its administrative centre is the city of Svolvær, the largest city in the Lofoten region with a population of about 5000 people. Its key business sectors are tourism, fisheries and aquaculture, fish processing and mechanical industry, in addition to typical urban sectors like finance, insurance and other services (SSB, 2020b). About one fourth of the jobs in the municipality are in the public sector (Hjelseth et al., 2016). Traditionally, the Lofoten region is renowned for winter fishing. In recent years, the relative importance of fisheries, as measured in number of jobs, has been steadily falling, whilst the tourist sector has experienced a rapid growth, both in jobs and revenue.

After a dip during the early 2000s, the region's population has been increasing since 2008 as a result of net positive immigration (Hjelseth et al., 2016, p. 18). The recent growth in population and tourism has led to an increase in housing prices and a change of land use that have both triggered intense local debate. During the peak tourist season, the local population faces challenges with inadequate waste management, pressure on natural resources and overcrowding (SG Henriksen, personal communication, 5 June 2018) (Fig. 10.1).

Contrary to the positive trend in population growth in the region, Vågan has experienced a steady outflow of young people. In an attempt to counter this tendency, the municipality established a project aiming to produce new knowledge on how children and young people can live 'the good life' in Vågan. But lack of sufficient dialogue and mobilization of young people led to poor results and a lack of follow-up projects (Vågan Municipality, 2017, p. 11).

Most municipality residents live in the neighbouring towns of Svolvær and Kabelvåg and the rest are spread out in small villages and hamlets (see map below). Car ownership in Vågan is slightly below the national average (0.48 privately used person cars per capita compared to 0.51 nationally) but in the past decade it has experienced a 23% growth, which is



Fig. 10.1 The Lofoten Islands and Vågan municipality (outlined in red colour). Source: ©norgeskart.no

more than double the national average of 11% (SSB, 2020a). The road network is characterized by narrow, curved roads that give poor overview. Despite the infrastructural and geographical constraints, congestion and high speed driving are increasingly the norm in Vågan, as in the rest of Norway (Vågan Municipality, 2019a, p. 65).

Recent resident consultations undertaken by Vågan Municipality (2019c, p. 4) show that citizens are demanding better transport solutions. Particularly, a better public transport service, more facilitation for pedestrians/cyclists, good ferry connections and improved roads. There are public bus services between Svolvær-Kabelvåg and Henningsvær, but there is otherwise little public transport to other areas in Vågan. In particular, young people call for improved public transportation options that harmonize with opening hours for culture and leisure activities (Vågan Municipality, 2019d, p. 14). In 2019, only 3.3% of municipal roads had cycle lanes, which is less than a quarter of the national average (SSB, 2020c). The municipality has expressed its intention to both improve quality of life (reportedly lower than the Norwegian average (Vågan Municipality, 2017,

p. 11)) and contribute to reduce transport-related GHG-emissions. An overarching aim of municipal transport planning is to move towards a municipality with robust infrastructure, sustainable land use and viable transport solutions (Vågan Municipality, 2019b, p. 10). This includes facilitating an increased use of bicycling and walking in everyday life, as well as effective public transport hubs (Vågan Municipality, 2019d, p. 4).

Methods and Data

In September 2018, a one-day participatory activity was organized in Svolvær. Fourteen stakeholders representing different sectors and age groups were recruited directly by the Municipality's Public Health Coordinator (PHC). The PHC distributed a flyer informing about the workshops to various local organizations, the local chamber of commerce, sports' council, tourism school, a research institute, the municipal cultural school and various volunteer organizations in addition to other areas frequented by residents. Those who participated in the workshops were in the age range from 15 to 78 years old. Four of them were pensioners (aged over 70 years), one business leader, a taxi chauffeur, a community development project manager, a school principal, a head waiter, a nurse, a researcher and three students. Nine of the participants were male and five were female. Otherwise, the group was relatively evenly distributed across educational background and occupation with three people having only completed elementary school, three with high school education and seven with higher education (college and university level).²

The participatory activity started with a plenary presentation where two of the authors of this chapter introduced the methodology and the aims of the project to workshop participants. During the first half of the day, participants were divided into two groups through a mix of a voluntary and lottery systems. One group participated in Workshop 1 identifying negative satisfiers that were hampering need fulfilment in the municipality resulting in a matrix filled with 'negative' satisfiers (see Table 10.2 in the Appendix). Another group joined Workshop 2, where the ideal situation where needs are optimally fulfilled was addressed and a utopian matrix was filled (Table 10.3 in the Appendix). Each of the two workshops lasted three hours. After the two parallel workshops, the

researchers made a preliminary analysis of the two matrices and produced *consolidated negative and utopia matrices* by eliminating repetitions and overlaps.

Workshop 3 took place in the afternoon of the same day and lasted three hours. Participants were given printed copies of the two matrices and the opportunity to discuss them openly. Later, they were divided into four groups and each group was assigned one existential category out of four (Being, Having, Doing and Interacting) and were asked to identify *synergic bridging satisfiers* for each FHN. That is, satisfiers that would bridge the negative and the utopian matrices for each of the nine FHN. In this process, they identified the role that communities (endogenous) and higher governance levels (exogenous) played in moving towards the ideal situation. At the end of this session, participants were gathered in a plenary session and each group presented the results of their deliberations. The summary table with endogenous and exogenous satisfiers was projected onto a power point screen so that everyone could see how it was being filled and discuss whether they agreed or disagreed with the outcome (see Table 10.4 in the Appendix).

Participants gave their consent for the workshop discussions to be voice recorded (by signing a consent form that guarantees anonymity). Despite the municipality being involved in the recruitment of participants, they were not given access to the data (no representative was present during the morning workshops although one attended the last 15 minutes of Workshop 3). General access was granted to research outputs in the form of an article featured in the 54th ISOCARP Congress³ proceeding (Temesgen et al., 2018) and the current book chapter.

The analysis of workshop data was done in two phases. The first focused on analysing the negative and utopian matrices and the table of synergic bridging satisfiers (see Appendix) studying the interconnections of satisfiers and going back to the researchers' notes and recordings for a deeper understanding of the relationships. The second was based on the analysis of the transcribed workshop discussions. Transcript analysis was performed using the software Nvivo 12 Pro (QSR International, 2018). Descriptive and concept coding were used to sort and summarize workshop discussions (Miles et al., 2020). Descriptive coding was intended to account for themes not initially considered in the research question but

that were dominant in people's discussions, for example concerning the role of tourism or the characteristics of synergic satisfiers such as non-commercial meeting places. Concept coding was used in order to establish a correspondence between workshop discussions, human needs, types of need satisfiers and elements of practice. Categories were also developed to account for different transport modes.

Results

The Negative and Utopian Matrices: Transport Practices as Interlinked Satisfiers

Workshop discussions were articulated around the three phases of the HSD methodology described earlier. Regarding transport practices, participants brought up the unsustainability of the current transport system in the first workshop, whilst sustainable transport practices, revolving around ride-sharing, the deployment of an extensive cycle-path network and an efficient public transport were discussed in Workshops 2 and 3. Figure 10.2 summarizes the satisfiers brought up by participants in the three needs-based workshops. Satisfiers related to mobility practices are highlighted in bold.

As illustrated in Fig. 10.2, elements of transport practices in Vågan were discussed as satisfiers characterizing the negative and utopian matrices and as synergic bridging satisfiers identifying potential policy strategies or community action. Although Fig. 10.2 presents them as independent factors, they were generally referred to as being interlinked with other satisfiers and depending on them for their negative or positive effect on needs fulfilment.

The negative satisfiers discussed in Workshop 1 described a socio-economic and cultural system characterized by reduced social interaction opportunities for minority groups, where the young experience excessive social pressure to conform, and where low economic resources together with deficient public services were reducing the capacity of the population to meet needs. A deficient transport system was considered to have negative implications for several FHN. An analysis of workshop discussions unveils

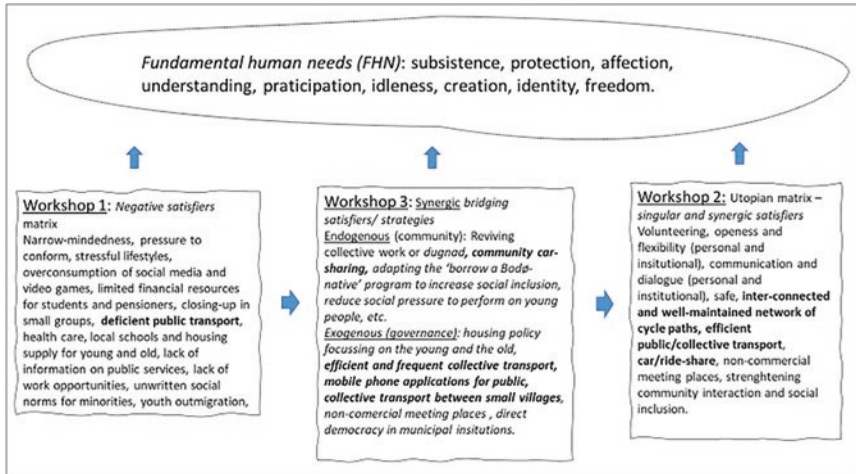


Fig. 10.2 Human needs, satisfiers and transport practices in Vågan. Note: This illustration is a partial representation of the satisfiers discussed in the workshops. It only includes a selection of the satisfiers that emerged in workshop discussions (for full synthesis matrices see the Appendix)

that underprioritizing public transportation was connected, among other negative satisfiers, to an endemic underinvestment in public services in the region, a lack of civil society's influence in municipal decisions and a lifestyle perceived as stressful that required access to rapid fixes for everyday challenges. The latter was explicitly connected to private mobility as driving was seen as a practice intended to beat time pressure. The following excerpt from a workshop discussion illustrates the relationship between a hasty daily pace, a deficient public transport network and the use of private transport.

C: In my current circumstance and with the way I function in my everyday life, it does not fit well to take a bus when I [head to town], then I drive. So I have to ... well, that's what it is ... I believe that when you live in the city center you can be a contributor and think about the environment more.

Workshop 2 addressed satisfiers that should be in place in Vågan in an ideal situation where needs were optimally fulfilled. In general, many of the satisfiers discussed, such as volunteering and having non-commercial

meeting places open to all, were directly or systemically linked to strengthening the local community. There was a strong emphasis on the development of a safe, interconnected and well-maintained network of cycle and walking paths that could foster cheap, convenient and low-carbon transport in the municipality. This was seen as a complement to a better strategy concerning public and collective transport, including rideshare, from the more distant villages to the main urban centres.

The presence of suitable low-carbon transport opportunities was expected to have synergic effects on needs as it would contribute to the needs for understanding, participation, protection and subsistence. It is interesting to note, how satisfiers identifying sustainable transport practices were linked to satisfiers characterizing a well-functioning community. The latter was discussed in terms of institutional flexibility and cooperation, volunteering schemes and social integration programmes, and the availability of easily accessible meeting places for young people, minority groups and the general population. The following excerpt illustrates how participants viewed sustainable transport solutions as connected to greater collaboration across local actors.

E: And then we are back [to] community development. There should then be someone in charge of coordinating community development schemes ... such types of schemes should not draw only on voluntary solutions. In a way, the municipality [should] develop a plan to facilitate such types of solutions, whether it is ride-sharing or there may be other things that require some planning. An app needs to be developed. ... Maybe this is related to volunteering and knowing about what's happening locally. Maybe there should be an overview online where you could get information about such initiatives.

A: Yes, it has also come up before, that we lack a way to facilitate bottom up initiatives to emerge, right?

Singular and Synergic Satisfiers as Elements of Sustainable Transport Practices

Sustainable transport practices in Vågan were discussed in Workshops 2 and 3 where singular (contributing to the realization of one need), synergic (contributing to more than one need) and synergic bridging

(providing instruments to advance towards the utopian scenario) satisfiers were the focus of the deliberations. As indicated earlier, sustainable transportation was associated with the use of buses, cycle and walking paths and ride-sharing schemes but also to a reduction for the need to commute. Resources, norms and infrastructures were commented on as directly or indirectly connected to everyday transport practices. The fact that the HSD methodology encouraged deliberations on satisfiers that were currently missing in the society, enabled identifying the potential interconnected elements that could break with lock-ins and render practices sustainable.

Resources

Cultural, social and economic resources are considered to shape everyday practices. Concerning cultural orientations, participants suggested a return to the 'dugnad' tradition or the *spirit of voluntary community work*,⁴ which is an important element of Norwegian culture and identity. They linked the recent turn to a more individualistic culture in Norway to the weakening of local networks and a focus on the nuclear family. Households with young children were the ones for whom the individualistic turn resulted in an intensive use of private vehicles. The following excerpt illustrates how participants linked the rise of individualism, hasty lifestyles and the use of private transportation in Vågan.

D: I think we're talking about exactly the same thing all the time. But it is clear that the way things are now, people are so busy with themselves, parents and kids, that they have no time for anything. And we did. I don't think my kids are raised wrong, but we had time for community. They don't have that today. Absolutely none! This, I will believe, until proven otherwise.

S: Our children had legs. My children grew up in Svolvær and could walk everywhere. My children do not live here, and their children cannot go to all the activities on foot. They feel they have to join every activity, so then dad and mom have to spend all afternoon transporting them and can't do much else.

Economic and social resources were also conditioning transport practices in the municipality as it was considered that in addition to the low frequency of buses, the price of a single ticket was too high for students and pensioners. High fares did not always result in less journeys as people, particularly the young, would try to find someone driving in the same direction to share a ride. Interestingly, participants agreed that *strengthening community interaction*, would increase the likelihood of rideshare or carpooling among parents driving children to extracurricular activities. Some virtual solutions already existed, as some football clubs used Facebook and other internet platforms to promote ride-sharing among their practitioners. However, this did not seem to exclude the need for face-to-face communication, as not all children attended the same activities but most needed a ride at similar times to close-by places.

As a young participant in Workshop 3 put it, promoting ride-sharing could help overcome limited economic resources and strengthen social networks.

F: that parents don't just say 'no you can't play football or play drama in Svolvær because it costs too much to take a bus'. So if they are 5 parents from Henningsvær then they can take turns [to transport the kids].

Norms

Mainstream norms concerning mobility practices in Vågan seemed to differ across age groups, household types and neighbourhoods. Young people were expected to take the bus, cycle or ask for lifts in their daily commute to school and after-school activities, as well as when they were meeting friends and/or commuting to their summer jobs. Pensioners were also frequent users of local buses, even if they considered them expensive and ineffective. Cycling and ride-sharing were more common amongst the younger generations, but the purpose of the trip and timing were limiting their use. Young participants argued that parties, gatherings and summer jobs at hotels often finished after 11 pm. At that time, there were no more buses from the municipal centre, Svolvær, to the nearby villages, and parents would not feel it was safe for their children to cycle

home. Parents would feel safer by fetching their child by car, reinforcing carbon-intensive transport practices amongst a group that would otherwise have chosen to cycle home or take the bus.

The use of private vehicles had become the norm in households with small children as in the rest of the country, except for some districts in Oslo (Nordbakke, 2017). This was explained by the deficient public transport and cycle-path network, the hard weather conditions, the spread of the population and the ‘fashionable’ busy lifestyles discussed earlier. A *slow daily pace* or å ‘senke skuldrer’ (literally to lower one’s shoulders) was identified as a synergic bridging satisfier that would help parents, children and the society in general to break with the dominance of busy lifestyles. But this was not easy at the individual level as participants considered that they were living in a ‘prestasjonsamfunn’ or achievement-focused society and that extracurricular activities were essential for children’s success. Young people had internalized this definition of success and they understood it had negative impacts at the collective level. As a teenager put it:

S: And you see the results now as we begin to grow up. I’m 18 years old, I’ll start college soon and then comes work and then the whole package. And then you can easily see that one may not meet up for voluntary community work because the focus is on myself, that I should do well, than to focus on ... the collective. But it is very difficult, because it is difficult to counteract something that is already going on.

Despite this feeling of lock-in, some participants considered that the *Norwegian society was increasingly concerned about climate change* and sustainability issues and that this general trend could lead to a normative change in the near future. As a participant in Workshop 3 said:

C: It might also be more legitimate to do it [ride-share] now than it has been [before] because of environmental thinking. ... Before, everybody drove their own car. At least on a nationwide basis, there will be less and less of it. I think maybe we can get some help from this environmental thinking.

Infrastructures

The deficient cycle-path network, the low frequency and high cost of bus fares, and a spread-out population supported the use and overuse of private vehicles in Vågan. Participants highlighted the differences in transport needs between those living in Svolvær, the municipal centre and the nearby villages and towns. They also reflected on the implications for the local society of concentrating the population in few locations and leaving the more remote areas, many of which were already in decay due to the progressive disappearance of fishing activities, as locations for summer houses. They perceived that society was rapidly changing and that investments should focus on *flexible public transport solutions*. The excerpt below illustrates what participants meant by it.

H: If you need walking and cycling paths, it's usually from A to B. And how many A to B situations should one have before ...? It can be a delicate balance between having a local pedestrian and bicycle path as you mentioned and having a well-developed, flexible public transport for those who may not be driving. After all, pedestrian and cycling roads cost quite a lot of money, you get quite a lot of public transport for that money. But it may be that places are evolving and people move to new places and ... after 10 years then maybe the need is different and then it is easier to change a public transport route than to move a pedestrian and bicycle road.

Flexibility at the personal and institutional level was considered an important synergic need satisfier. It was brought up when participants discussed mobile phone applications or internet sites supported by the municipality that could articulate flexible public transport solutions and carpooling or ride-sharing. Nevertheless, internet-based solutions were not considered a replacement for face-to-face interactions, and participants stressed the importance of having access to *non-commercial meeting places* to strengthen community life. Ideally, these infrastructures would be low-threshold, multi-functional and organized in collaboration with the municipality and local charities or volunteers. Participants considered that everyone in Vågan needed access to such a flexible meeting place, as weather conditions and current lifestyles made it difficult for people to

meet casually. It should be open for groups to organize activities, such as language courses for immigrants or leisure activities for teenagers, but it could also serve as an information point and a place to engage in participatory democracy deliberations. The latter needed a formal support by the municipality, and people considered this support necessary to strengthen collaboration across local stakeholders.

Finally, participants considered that to reduce the amount of commuting to secondary and high schools, the housing market needed a stricter regulation. Students were currently prevented from renting a room near their schools due to high rental prices. Homeowners preferred to rent their spare rooms, studios or apartments through the more lucrative Airbnb platform than renting them to the local youth. Participants suggested that *increasing the availability of residential facilities for students* would contribute both to wellbeing and to the sustainability of transport practices in the municipality.

Discussion

This chapter drew on Manfred Max-Neef's FHN approach to wellbeing and social practice theory to investigate the elements that might support the emergence and consolidation of sustainable transport practices in Vågan municipality. We applied a social practice lens to analyse workshop discussions in order to identify the elements shaping transport practices. We used the FHN perspective to emphasize the systemic relationship between the factors defining sustainable mobility practices and those contributing to human need fulfilment. As presented in the previous section in a situation where needs are optimally met, sustainable mobility would occur in association with singular and synergic satisfiers such as a socially inclusive society, direct democracy structures, collaborative values and efficient basic services concerning health, housing and transportation, among others.

Figure 10.3 summarizes the answer to the study's research question on the set of elements of practice that would support sustainable mobility practices in Vågan and would break the current lock-in characterized by the use of the private car. The consolidation of sustainable transport

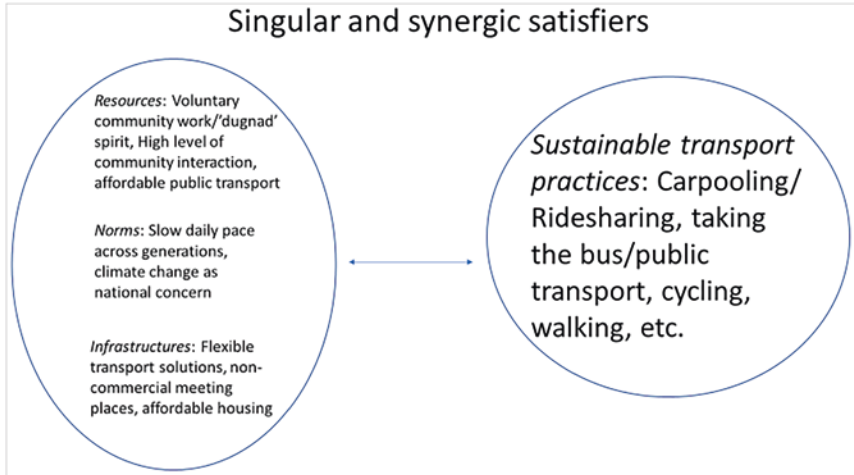


Fig. 10.3 Synergic satisfiers as elements of sustainable transport practices in Vågan

practices demanded first, strengthening collective values or the 'dugnad' spirit, and promoting a high level of interaction and communication between community members. Second, it required a transition from a society perceived as competition-oriented to a slow-paced one, where outperforming others is not considered a requirement for success. A national-level commitment to mitigating climate change was also seen as a normative supporting element. Finally, flexible transport solutions that could adapt to changing transport needs, a policy of affordable housing for the young and old population and the provision of non-commercial meeting places, were seen as reinforcing resources and norms in consolidating sustainable transport practices.

Despite the fact that most satisfiers might appear as 'only' locally relevant, it is interesting to note how many of the elements that might support sustainable mobility in Vågan are shared by distant communities such as Edmonton in Canada. Kennedy et al. (2013) study showed the importance of a social network for people to engage in sustainable practices and the role of the authorities in providing communities with safe and secure options. We found a similar situation in Vågan where participants emphasized the need for the municipality to provide a platform

(physical and/or internet-based) to engage citizens in discussions on sustainable transport alternatives, and to share information by sponsoring a non-commercial community centre.

Public interventions to support sustainable mobility in Vågan are essential to maintain a thriving local community and to fight against population decline and the associated reduction in state funding. The findings of our study concur with the results of previous research in the Lofoten archipelago. For example, Kaltenborn et al. (2017) emphasized the important role transportation services play in the Lofoten archipelago by connecting public services, securing 'community survival' (p. 170), and linking the islands to the mainland. Amundsen (2013) highlighted the importance of enabling mobility in coastal communities in Northern Norway as centralization trends and closure of crucial services were leading to an increase in the distances school children have to travel to come to a 'centralised' school on possibly nature-exposed roads.

Our study acknowledges the socio-economic imperative to secure mobility in the area and focuses on the cultural, social, normative, material and infrastructural elements that could facilitate a transition towards low carbon mobility alternatives. We contend, for example, that public interventions directed to expand cycle path networks might not succeed in reducing the amount of driving if the community is not engaged in the design of collective transport initiatives. It might well be that an internet platform to foster car-sharing, with contributions from villagers, schools and those organizing leisure activities, could be initially preferred by the population than spending funds and effort on a well-connected cycling route. Moreover, given the synergies associated with improving communication and collaboration among residents, an internet platform could also support group cycling from home to school, for instance, and engage a critical mass of practitioners in sustainable transport practices (Kent & Dowling, 2013; Watson, 2012).

Concerning collaboration, it is worth noting that reinforcing intrinsic values, or 'the collective spirit' as discussed by workshop participants, emerged as a supporting element to break the lock-in of unsustainable mobility practices. Tim Kasser's (2017) review of empirical studies on wellbeing and pro-environmental behaviours concluded that: (1) prioritizing intrinsic values (concerning community engagement, affiliation

and personal growth) over extrinsic values such as popularity or financial success is related to higher levels of wellbeing and greater engagement in sustainable practices such as walking or cycling; (2) the same factors that contribute to psychological needs fulfilment are linked to a greater engagement in sustainable consumption practices. This resonates with the conclusions of workshop participants that identified values associated to collective work, slow daily pace and community interaction with sustainable mobility practices and needs fulfilment. Individualism, haste and busy lifestyles were associated with car use and low quality of life.

There are, of course, limitations of using an HSD framework to address consumption practices. Here we raise two main concerns. The first is associated with the limited detail on the micro-level that the HSD methodology provides. The second links to the uncertainty around the effects on wellbeing and environmental sustainability of implementing singular and synergic satisfiers. With regard to the first limitation, a focus on linkages between satisfiers might have failed to provide a detailed enough description of everyday commuting practices and/or leisure travel in the locality. An alternative or complementary research design based on in-depth interviews could have been useful to capture this information. Concerning the second limitation, the results of needs-based workshops are interesting at the analytical level but difficult to assess whether the set of interlinked satisfiers discussed would have the environmental or quality of life effects identified by participants. We believe that future research would do well (a) to include participatory action research designs that allow for the implementation of satisfiers and enable an analysis of processes and (b) to engage in the study of communities of practice. The latter could be done by studying groups of people that adopt low-carbon habits and analysing the interdependent elements that prompt them to do so as suggested by Hal Wilhite (Guillen-Royo & Wilhite, 2015; Wilhite, 2016).

Conclusion

This chapter has analysed the elements that might support sustainable transport practices in Vågan municipality in Northern Norway drawing on Max-Neef's approach to needs and satisfiers and practice-theoretical

perspectives. Brown et al. (2013) suggested that the analytical power of social practice theory should be complemented by other social science approaches such as new economics and socio-technical transitions in order to understand how to break with current lock-ins. Drawing on Guillen-Royo (2020) and Guillen-Royo and Wilhite (2015), we considered that HSD, as a framework included in the new economics perspective, complements and aligns both with practice-theoretical approaches and social-technical transition studies. We claim that the participatory methodology associated with the HSD framework gives an opportunity to communities, stakeholders or civil society in general to engage in discussions on the interlinked satisfiers that promote need fulfilment and sustainable practices in a particular location. The fact that satisfiers include elements of practice such as norms, resources and infrastructural arrangements provides, we believe, the systemic perspective required to engage societies in low-carbon transformations.

Appendix

Table 10.2 Negative matrix

	To be	To have	To do	To interact
Subsistence	Unrealistic (expectations regarding work) Sceptical of the unfamiliar (towards foreigners' education and work experience) Ageism Insecurity (seeking security in small closed groups)	Limited financial resources (income, study grant) Limited health infrastructure (specially for acute needs) Isolating subcultures Lack of integration Too low thresholds for being assigned to special education Special education isolates and stigmatizes Limited capacity in elderly care Time squeeze/crunch Body-image and work pressure Too many activities for children (no free-time)	Not learning Norwegian Seeking security in small groups Dominating others Bullying Weak Norwegian skills before school	Limited labour market Scarce apprenticeship positions Limited housing Housing not fit for physically disabled and the elderly Age composition in schools Pressure from social media regarding appearances, success, etc.
Protection				
Affection	Feeling rushed all the time Feeling of inadequacy (because there is too much to do)		Too much to do for counsellors in schools Emigration leads to loneliness for the elderly Not enough follow up on integration of immigrants	Isolating institutions for the elderly Exclusionary student environments

(continued)

Table 10.2 (continued)

	To be	To have	To do	To interact
Understanding	Closed-mindedness Conformity (demanding conformity by the majority) Homogenous groups	Too little time for a good talk Decentralized school systems Lack of information sources for immigrants	Lacking social skills of communication, understanding norms and unwritten rules	Small schools (make bullying worse, are isolating and uninspiring for students) Too large schools create at-risk groups
Participation	Lack of determination, perseverance Not curious (not actively seeking out information about activities)	Too few opportunities for free-time activities Lack of information (for physically and mentally disabled) Too fast technological changes (exclude the elderly) Not enough money Minimum pension for elderly	Not seeking out opportunities Lack of commitment or political engagement by youth Limited opportunity for political participation for committed youth	Isolating institutions (for physically disabled) Segregated schools (some immigrant students are separate from Norwegian students) Old buildings do not have facilities for the physically disabled
Idleness	Limited time in nature Stress (one needs to destress through games) Overstimulated (youth have no capacity for anything else) Addicted to games (youth to decouple from stress)	Too little money Limited free-time activities Limited information regarding free-time activities, free pass and the like	Spending too much time on games Engaged in too many activities	Expensive travel costs Inadequate public transport system Inadequate school infrastructure (especially for free-time activities)

Creativity	Parochialism Afraid to stick out	Too many organized activities Too much focus on natural sciences in school Too little money Focus on status symbols in schools	Too much time on video games	Small schools Lack arena for youth to express their creativity Lack of youth clubs
Identity	Group identification	Isolating small groups	Bullying and abusive behaviour on social media	Small schools Social media
Freedom	Meanness, oversensitivity Abusive	Time squeeze Too little money Strict laws and regulations	Bullying and abusive behaviour on social media	Inadequate public transport system Inadequate school infrastructure

Table 10.3 Utopian matrix

	Being	Having	Doing	Interacting
Subsistence	Flexible (local council), dynamic	Jobs in the villages, basic needs covered, a clear strategy for real estate development, good infrastructures, assurance that the village/hamlet will survive	Talking about ideals and values, listening to the marginalized groups, reducing variations in food prices across the region, demanding local development initiatives	Good public transport, sufficient access to housing, good network of cycle and walking paths
Protection	Flexible (local administration), openness	Little red-tape, simplicity, infrastructures adapted to the climate, better conditions for old people	Contributing, adapting infrastructures to the amount of tourists	Police availability, upgraded water drainage, flexible public transport, good network of cycle and walking paths
Affection	Responsible, resourceful	Less structured daily life, a culture that supports initiatives, someone (institution) that supports the creation of meeting places	Taking initiative, making everyone responsible, appreciating voluntary work	Non-commercial places for young people to meet, centralized volunteering service
Understanding	Open, inclusive	People in the field (business, administration, schools), value participation	Making people responsible, showing openness, listening to other perspectives	Person-to-person communication, better public transport, sustainable solutions

Participation	Responsible, ready to take responsibility	Possibility to contribute with specific things, focus on disseminating opportunities to engage (internet, etc.)	Being open to people trying, keeping voluntary work	Dugnad and other opportunities to participate. Public/collective transport adapted to young people's needs
Idleness	Engaged, idle	Less material things, non-materialistic values, cheaper public transport	Buying and having less	Non-commercial meeting places
Creativity	Inclusive, curious	Openness, institutionalized bottom-up led solutions, dialogue	Allowing others to try, breaking with the dependency on being paid	
Identity	Flexible, proud of being from Lofoten	Measures to preserve cultural traditions	Volunteering (lively community), being proud of Lofoten	Local population out in nature
Freedom	Responsible	Basic needs coverage, solidarity, unity, focus in the collective	Taking responsibility for the collective, addressing aggressive behaviours such as bullying	Little pressure to perform and compete (for young people)

Table 10.4 Synergic bridging satisfiers

	Being	Having	Doing	Interacting
Endogenous (personal and community levels)	Curios and inclusive Open to other groups of people (newcomers, refugees, etc.)	Better interaction between civil society, volunteers, public sector, business Limiting tasks and extracurricular activities to encourage spontaneity Active engagement in politics	Strengthening the resilience among victims of mobbing Putting less pressure on adults and children to perform Young people changing attitudes in social media Launch an initiative similar to 'borrow a Bodo-native' in Vågan	Unused homes rented to students and not through Airbnb Car-sharing among parents taking children to weekly activities Meeting places to learn Norwegian culture and language for newcomers
Exogenous (governance level)	Proactive institutions to increase curiosity and creativity	Better organized housing market Better housing policy Well-functioning youth council More information for older and immigrant citizens Free (gratis) spots on sporting and leisurely activities for people with weak economy	Volunteer cafes or volunteer centres Welcoming committees to newcomers Awareness about videogames Support neighbourhood associations Participation in the forming of Vågan's community development plan (in the form of particular tasks given to organized citizen groups) Organizing workshops on community development regularly to increase citizens' engagement	Better collective transport More frequent buses Transport apps Meeting venues for youth and the general population Centralized schools Transport possibilities between small villages

Notes

1. This section uses the concepts wellbeing and quality of life as interchangeable.
2. One participant did not report educational background.
3. <https://isocarp.org/2018congress/>
4. In this section, concepts encompassing singular and synergic satisfiers are highlighted in italics.

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11

Value Mapping: Practical Tools for Wellbeing and Sustainable Consumption

Chris Butters and Ove Jakobsen

Introduction

The goal of consumption is wellbeing. Sages have said that happiness is easiest found if one's needs and desires are small. That would also mean wellbeing for the environment. However, the word *satisfaction*—from the Latin *satis*, meaning enough or sufficient—finds no place in the world of unlimited economic growth and consumption. Sufficiency is considered a virtue in most religions; but it goes against, indeed is a direct threat to, the logic of industrial growth and maximum profit. The word “enough” seems to have disappeared from our moral and political vocabulary.

How, then, to achieve sustainable consumption? The study of consumption has long confronted the questions as to what, who, where, how, why of consumption. Whilst this volume explores all of these

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questions, the most pressing question is arguably why change happens so slowly, or even in directions away from, rather than towards sustainability. And, related to this: how, in practical terms, can we assist consumers to move towards sustainable consumption? The aim of this chapter is to offer some answers to this question.

Solutions, lifestyles and behaviours of course already exist which largely fulfil the three recognized sustainability requirements of ecology, economy and society, and which provide wellbeing in ways that are both equitable and sustainable over time. And, those of us whose work involves searching for concrete solutions—such as sustainable buildings, cities and energy—have developed, and promoted, and evaluated, such solutions for several decades. The technology is if anything the easy part—and it is getting easier—and costs are coming down too. Near zero energy buildings have in fact existed for 40 years (Butters, 1982), and seminal research such as the *One Kilowatt per Capita* study (Goldemberg et al., 1984) showed that the globe could achieve energy sustainability with the technology of 35 years ago. Only a fraction of those solutions have become common practice; in poorer countries, virtually none of them. So, as practitioners we are constantly faced with the question: “why not”? Many of the answers lie, as our late colleague Hal Wilhite and the contributors to this volume will agree, only partly in the realm of engineering, but largely in the realm of the social sciences (Reisch & Thøgersen, 2015).

Whilst much consumption is determined less by conscious choice than by embedded ideas and habits, transition to more sustainable consumption requires conscious decisions in all areas, from politics to industry to the individual. And, for sustainable solutions to address all three facets of ecology, economy and society, we need to integrate all three within a holistic framework. Such frameworks and approaches are, we argue, still largely lacking. Looking beyond the material, psychological, cultural and other forces underlying consumer perceptions and behaviour, this chapter turns to address the challenge of how we can enable or assist those—consumers and policy makers—who have the intent to move towards sustainable choices. We first offer a brief discussion of consumption, wellbeing and economics, before we note two key issues that hinder moves towards sustainable choices. The first is the largely unseen role of the financial system itself in consumption; the second, which we

do not explore in detail here, is the persistent mechanistic or dualistic thinking that separates objective/quantitative from subjective/qualitative considerations, thus effectively hindering a holistic approach to and framework for consumption. The final sections then address these challenges by presenting two simple tools which consumers can apply to make holistic assessments and choices for wellbeing and sustainable consumption in practice, in a manner that integrates both objective and subjective factors, both quantities and qualities. These tools are in the form of “value mapping”. This methodology, previously applied in the Sustainability Value Map (Butters, 2004, 2012), has the advantage of being visually intuitive as well as easy to apply, both for experts and for citizens; either in a simple version or in detailed forms not described here.

Consumption: Intent and Impact

Individual consumption comprises a large part of humankind’s total environmental, economic and social activity (see Hansen and Nielsen, this volume). It is therefore also a key part of the problem of unsustainable development. Whilst often considered as individuals, consumers also play an indirect role, less easy to assess, as members of a community and as citizens (Liu et al., 2017). Consumer behaviour is widely researched within the natural and social sciences (Rockström et al., 2009; Reisch & Thøgersen, 2015), in which a key distinction has been made between intent and impact. Generally speaking, while natural science research into consumption behaviours is key to identifying forms of behaviour with high impacts, social science research into intentions, influences and motivations is essential in order to understand behaviour, and to target efforts to change high impact behaviours (Gatersleben et al., 2002; Shove, 2014; O’Brien & Sygna, 2013). Relevant here is the paradox that sustainable intentions often translate into actions that have limited, or even negative effect on sustainability. The drive to inspire is often based on *ideals* with scant reference to measured *impacts*; and for their part, interventions to reduce impacts have often failed to appeal or inspire. What is important to note in both cases is the lack of tools that combine intent and impact.

In many countries today, consumers have a wealth of product labels, consumer programmes, online guides and footprint calculators that could (in theory) assist them in making sustainable choices. But some are confusing or unreliable, or involve complexities which even highly educated—and motivated—people cannot evaluate. It is, in fact, only in recent years that serious analysis of products and their impacts has become common. Methods such as the Ecological Footprint (Wackernagel & Rees, 1996) have aided our understanding but are still not widely understood. The same is the case with a more recent model, the SCB cube model of sustainable consumption behaviour (Geiger et al., 2017). This model introduces a novel four-dimensional approach, but it too is beyond the grasp of laypeople. Comparable tools such as Product Declarations (EPDs) or life cycle analysis (LCA) techniques are extremely helpful, but mainly directed at a specialist audience (Steen-Olsen & Hertwich, 2015; NL Agency, 2011). Meanwhile, advertising continues to push intent towards ecologically or socially damaging choices. Hence, there are strong pressures towards unsustainable intent at the same time as we have few tools to assist sustainable consumer behaviour.

Consumption and Wellbeing

As stated, the goal of consumption—and hence of economics—is wellbeing. Wellbeing, the thriving of both people and planet, or *enjoyment-of-life* as expressed in ecological economics (Georgescu-Roegen, 1971), has been widely studied in consumption research in recent years (Guillen-Royo, 2010, 2019; Guillen Royo & Wilhite, 2015; Guillén-Royo, Temesgen and Vangelsten, this volume; Sahakian, this volume) and, although it may be defined in various ways, it is upheld as the ultimate goal of development. For our purposes, the New Philanthropy Capital (NPC)'s definition offers a useful starting point:

Personal and social well-being describes a person's state of mind, relationship with the world around them, and the fulfilment they get from life. It can be understood as how people feel and how they function, both on a personal and a social level, and how they evaluate their lives as a whole (Finch et al., 2014; NPC, 2013).

Four key categories are important: feelings about self; relationships with family and friends; perception and connectedness to the community; and overall life satisfaction.

Frameworks for assessing wellbeing are often based on a view of the self as an autonomous, rational and independently acting (or feeling) individual; theories of the self as relational, however, highlight how wellbeing also has a collective component. Approaches such as the Ecosystems of Wellbeing (ITF, 2011) develop this broader view. They also place a strong focus on wellbeing as process, underlining how the flow and dynamics of change (or stability) are essential features in wellbeing.¹

The hierarchies of human needs approach (Maslow, 1943; Max-Neef, 1991; Seligman, 2004) describe how consumption ranges from basic goods and services, such as food and shelter, to non-material categories such as freedom, trust or friendship. Wellbeing, and hence consumption, encompasses and requires both material and non-material flows. While ecological economics insists on a focus on the common good (Daly & Cobb, 1989), a good that must include nature itself, such considerations are largely absent within mainstream economics. Here, “benefit” is largely limited to consideration of (quantifiable) flows of goods and services that provide material (and to some extent psychological) satisfaction.

The Easterlin paradox (Easterlin, 1994) exemplifies a comparable disconnect between economics and wellbeing. It concerns—to simplify—how increased income does not, beyond a certain point, seem to result in increased happiness. But the Easterlin paradox has had no practical influence on policy decisions; the underlying assumption, even in the richest societies, is still that we all both need and want “more”. The dominant paradigm of endless growth has resulted in a pervasive global consumer culture. Historically speaking, this is quite recent; a very different culture of frugality characterized the nineteenth century in western countries (Hansen, 2018), and has done so in other cultures (see e.g. Hansen et al., 2016). Today, however, the consumer culture is deeply embedded in our thoughts, assumptions and habits and, as a result, in our policies and technologies as well. But important as it is, it is not the only driver of unsustainable consumption.

The Cost of Money

Our current financial-monetary system reinforces the cultural practices of unsustainable consumption in ways that influence both production and consumption immensely, yet which is often unseen. We single out three elements of this system as particularly important, namely the cost of money; importing, exporting and consequently hiding “impacts”; and credit and debt. We start with the cost of money itself.

By far the largest portion of global economic activity today is not consumption of anything tangible at all, but finance. Given the rules by which money operates (interest in particular), that activity has a vast influence on all production and consumption: for example, it encourages short life products, trend-driven consumerism and production in locations where ecological externalities can be disregarded.

We currently find that money has become a goal in itself rather than a means to implement concrete wellbeing outcomes. Profitable speculation is encouraged, and permitted by laws—in particular “limited liability”—to stimulate innovation by protecting innovators against the risks they take. When the early industrial capitalists made profits, they generally invested in new factories—in new productive capacity and jobs. But today, due to the interest system, money often makes more money than would investing it in productive activities—let alone community welfare. Nor is money vulnerable to technical breakdowns, changing product demand or strikes.

This speculative trend exploded from the 1970s onwards (Kennedy, 2012), a development Maynard Keynes foresaw already in 1936:

Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done (Keynes, 1936).

In other words, when risky innovation is a small component within the real economy, well and good. But the real economy, that is, *productive* capital directed towards amenities, services and wellbeing, is now dwarfed

by speculative finance. More than 95% of all foreign exchange transactions are motivated by gain through speculation, less than 5% is related to goods and services (Lietaer & Dunne, 2013). Compound interest and discount rates are particularly problematic. As President Obasanjo of Nigeria famously stated after the G8 summit in Okinawa in 2000:

All that we borrowed up to 1985 or 1986 was about \$5 billion. So far, we have paid back about \$16 billion. Yet we are being told that we still owe about \$28 billion, because of foreign creditors' interest rates. If you ask me what is the worst thing in the world, I will say it is compound interest. (Lietaer, 2001)

This impacts consumption in major yet largely unseen ways, insofar as the cost of money itself is embedded in consumption—in the cost of consumer goods and services—and forms a considerable part of what we pay for a given product or service. For example, the cost of a house includes the cost of the interest on the money that the developer borrowed. Our water bill includes the cost of the money that our municipality borrowed to build the water supply system. And these hidden costs can be very large. Examples from Germany are that the cost of interest on capital was 12% in garbage services, 38% in what we pay for water supply and 47% in sewage costs (Kennedy, 1995). While seldom recognized or perceived, they have large economic impacts on consumption.

Many consumer choices and activities are thus both shaped by, and lend support to, an unsustainable and inequitable financial system. While consumption therefore has global financial and even geopolitical implications, these connections are largely unseen and seldom understood, and consumers lack practical tools to evaluate their choices. The same is the case for the measurement of energy and emissions that we turn to next.

Hiding Emissions and Impacts

Most approaches to energy and emissions (Kyoto Protocol, IPCC, COP-2015) continue to employ a production-based model where impacts are measured where energy is used to produce goods, with

resultant emissions. It is now increasingly recognized—though not yet widely—that this provides an insufficient and misleading picture. Much of the “dirty” high impact production has been relocated to developing countries in the global south. When what we consume is produced in China, for example, then the energy and emissions to produce those goods occur far away; but they are nonetheless caused by our demand. It is thus, to simplify, not China’s consumption but ours (Peters & Hertwich, 2006; Diana Ivanova et al., 2017). In the case of Sweden, for example, nearly 60% of a typical Swede’s carbon footprint now comes from carbon “imports” (Nilsson, 2012). It should be noted that these indirect impacts are not only carbon-related but also social, such as air pollution deaths or child labour in other countries. This global perspective is increasingly important for understanding consumption, but it is also a perspective that may be hard to take on board for laypersons. In light of this, the recent development of consumption-based carbon accounting (CBCA) is essential for consumer-oriented approaches (Peters, 2008; Steininger et al., 2018) insofar as CBCA shows the hidden or indirect impacts, especially in imports.

Credit and Debt

Lastly, debt, the extension of money in time, has a major influence on consumption, both on the individual and political levels. In former times, every farmer knew that without a reserve food store the family could not survive a bad season. Every business too held a stock, as opposed to today’s “just in time” supply chain. But today we all live in debt—consumers as well as nations, who often have debt amounting to 50–100% of one year’s total national product. This means that we are living off the future, off value that has not yet been produced. The 2020 pandemic has made this situation worse as trillions of dollars were created—out of thin air—to get the world going again. The assumption is of course that with renewed economic growth we will be able to eventually “catch up” and pay off the money that we have borrowed from the future.

It is not the mechanism of credit itself that is in question, but its application and the kinds of activities and consumption it tends to support.

Credit for the poor to buy essentials can evidently be positive. So too credit to prevent or tide over temporary crises. But the credit system works selectively, as the above example from Nigeria highlights: credit can later constrain the provision of basic needs in a poor country; in some countries more than a third of all revenues is unavailable for any constructive purpose because it must be used to pay off credit. Comparably, credit for regenerating forests or emission reductions often has a long payback time, if any, making it unattractive to the finance system. By contrast, easy credit is often offered for short-term purchases that are of very dubious sustainability.

Consumption choices and patterns are thus largely influenced by and dependent on what can be borrowed, when, by whom and for what kinds of consumption. Credit has very selective agency. What the global south in particular can or cannot choose is therefore greatly conditioned by it. In effect, credit has become a prime means to sustain the growth paradigm, being the key mechanism to promote rising consumption, and threatening both consumer wellbeing and planetary wellbeing. In short, our monetary system is not in accordance with the challenges in today's society (Lietaer & Dunne, 2013).

All three of the above phenomena expose profound systemic problems in the economic growth paradigm, which superficial tinkering cannot solve. They are largely hidden from public view; are largely ignored in evaluations of sustainability, in particular its economic dimensions; and hence demand far more research and exposure in order to inform consumer choices and policy discourse.

Accounting for Benefits and Disbenefits

In order to design tools to assist sustainable consumption, we need to reframe consumption in a more complete way. This reframing must be able to include the “hidden” factors and impacts outlined above, and must accordingly build on a radical critique of current economics.

Consumption in orthodox economics is measured by a collection of quantities, mostly of a material kind, with little accounting of environmental or social impacts. The less tangible human needs are hardly addressed at

all. That economics, whilst useful for some purposes, tells us little meaningful about the state of the planet—nor about our state of wellbeing. Newer frameworks, such as *Doughnut Economics* (Raworth, 2017) or those briefly noted above, introduce qualitative criteria and now form a kind of parallel discourse about the world, embracing a much broader view of costs and benefits. However, they still leave us without the tools to actually guide and frame decision making. The goal of ecological economics that we are inspired by here aspires towards the same goal, by offering a theory and practice that see the economy as “operating within, rather than dominating, the spheres of nature, society, and culture” (Capra & Jakobsen, 2017).

We consume potatoes, clothes, building materials. We also consume haircuts, concerts, holidays. Most of these are now entirely monetarized. Shiva notes that, paradoxically, “the global economy defines people as poor if they consume the food they have produced themselves rather than buying commercial junk food” (Jakobsen, 2019, p. 132). The consumption categories that lie beyond the basics in the hierarchy of needs, just as important to wellbeing, are not monetarized. However, it is evident that we also “consume” *negatives*. Some are quantifiable: toxins in food, polluted air, noise. Others are qualitative: stress, insecurity, discrimination. To convey a full account of development, of wellbeing, all these must be “framed” into a whole picture. The “negatives” cannot just be noted as “externalities” but must be included and deducted on the balance sheet—some kind of balance sheet—as in any correct accounting.

We recognize the absurdity that car accidents, dental bills and waste treatment, all help to raise GNP. Whilst limited models such as GNP are useful, a large part of GNP as seen by standard economics in fact consists of disbenefits; the above are at best repairs to damage caused by unwise or faulty consumption. Many other “goods” are decidedly negative since their consumption (at least beyond a point) impedes human or environmental wellbeing: such as meat, alcohol, sugars and beauty products; and there are many consumption activities which may enhance *individual* wellbeing whilst being harmful to *others*, or to the environment, such as foxhunting or tourist travel. And then, of course, there are many “services” that are necessary but which a well-functioning society would need *less* of: such as bureaucracy or police. To put it simply: our accounting is wrong. Recall the unique voice of Robert Kennedy in the 1960s describing GNP:

It does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our courage, nor our wisdom, nor our devotion to our country. It measures everything, in short, except that which makes life worthwhile. (Mankiw, 1999)

In effect, reducing all the negative and undesirable economic activities might halve global GNP—whilst providing a better world.

Endless growth on a finite planet is impossible; but much before we get to where growth becomes impossible, it becomes uneconomic: it damages more than it is worth. We have reached this point, but are unable to recognize it. To bring economics and wellbeing together, our questions should be: which economic (and non-economic) activities are *useful* in the sense of leading to positive human, societal and ecosystems development? What kinds of consumption can give maximum wellbeing with minimum impact? Value Mapping offers a way of addressing this question, insofar as it provides process tools for sustainable choices and behaviour.

Value Mapping

The aim of the simple tools described below is a practical one; it is to assist the consumer in the daily processes of sustainability choices and decision making—in a holistic manner. It offers a framework that combines objective and subjective factors, quantities and qualities, ecological and social considerations, in a holistic approach to consumption.

Decision making—*wise* decision making, that is—must involve both quantities and qualities. But quantities are ultimately also measures of quality (or in a broad sense, efficiency). We describe a house needing 200 kWh/m²/year of energy as “inefficient”, one needing 100 kWh/m²/year as “good” and one needing zero net energy as “excellent”. Similarly, an ecotope containing only 15 insect species can be described as “poor” in biodiversity. In terms of impact—in the sense of overall benefits for healthy development—all quantities can ultimately be reduced to

qualities: excellent, good, mediocre, poor and so on. Additionally, quality is also relative to place and context (what is “too much” energy for a *Norwegian* or for a *Kenyan* house, for example?). Given the complex and partly subjective nature of holistic decisions, they *cannot be* produced by a “software”. Hence, quantities not only can but must be given a qualitative value; measured not in mechanistic units but in terms of human, societal and environmental value or *worth*. This is what Value Mapping seeks to achieve. At the same time, Value Maps have the function of shifting our focus to the interconnections. This is in line with the systems or networks approach where “quantities can be measured; qualities need to be mapped” (Capra & Henderson, 2009, p. 7). The two maps presented below for Wellbeing and for Sustainable Consumption illustrate the integration of both. For the sake of clarity, we first very briefly describe the original Sustainability Value Map which the two maps below are developed from.

The Sustainability Value Map (Butters, 2004, 2012) investigates the quality of a project, consumer product, building or region, in environmental as well as economic and social terms. Whereas the environmental aspects are largely objective, the social ones are largely subjective. A segment that is largely filled out indicates high sustainability, whereas a nearly empty segment indicates poor quality. The simplified example here, for a typical slum area, illustrates some of the interesting connections and trade-offs that emerge. In environmental terms, the people of this area have the lowest ecological footprint on the planet: they use virtually no energy, no water, no land, no transport; and their habitat is mainly from recycled materials, built at extremely low cost. It has very high flexibility as a habitat—it can be moved or removed in an hour. However, this is countered by the resulting economic and social deprivation that are evident from the many large “holes” in the diagram, such as very poor health and security conditions of life. Hence, when seen holistically, such an area and social context mapped is very far from sustainable. A sustainable outcome requires reasonably good quality in all three sectors—ecological, economic and social (Fig. 11.1).

The Value Maps for Wellbeing and Sustainable Consumption are primarily geared to the individual, family or group, for consumers to make sustainable consumption choices, wherever deliberate intent and choice

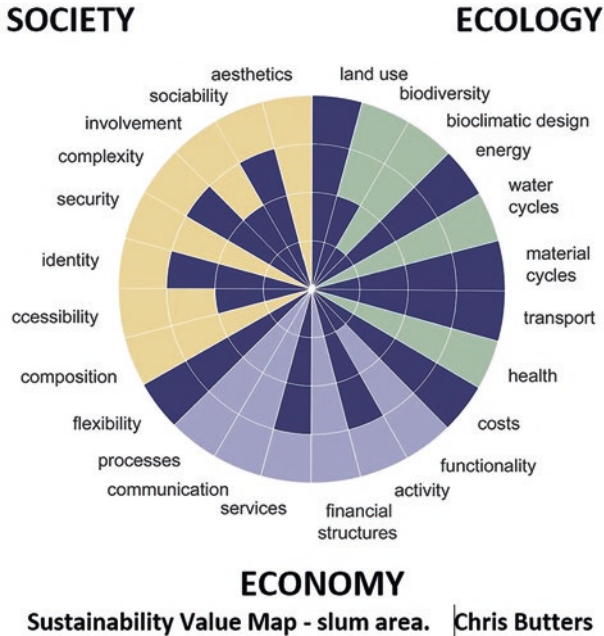


Fig. 11.1 Sustainability Value Map with a very unbalanced outcome. Source: Butters (2012)

exist. They are equally relevant at the level of policy making and macro-economics in terms of moving consumption patterns, products and habits in a sustainable direction. They are, further, designed to have two key pedagogical functions. The first is to make visible, in a simple manner, the complex interlinkages between ecology, economy and community aspects of sustainable consumption, and thus to foster a holistic understanding among consumers. The second is that the act of using these tools in discussions and decisions creates a pedagogical process towards clarifying assumptions and values underlying choice, reinforcing sustainable intentions, understanding impacts and channelling consumption towards the most effective outcomes.

The Value Maps oblige users to notice and discuss overlaps, synergies and conflicts between ecological, economic and social goals. The ideal is a balance between these three areas. A picture thus emerges about the *overall* quality of a proposal or product or consumption activity. The Maps can be used by ordinary consumers or experts, insofar as their graphic form is intuitive and easy to use, integrating ecological, economic and social criteria in a single diagram. Assessment is on a simple qualitative scale—from “poor” to “mediocre”, “good”, “excellent” and “outstanding”. As such, Value Maps both inform users about relative consumption impacts and bring forth fascinating discussions and reflections. Although intuitively easy to use, a teaching session with the Value Maps should be run with a facilitator or resource person who can present information on the approximate relative impact of daily activities and typical purchases; and later during group work answer questions that arise.

The Wellbeing Map

The Wellbeing Map is a simple application developed from the hierarchy of human needs. It is designed in extension of the Sustainability Value Map (SVM), on the same holistic principle of overcoming the quantity/quality dichotomy and integrating both quantitative and qualitative factors into one framework. Originally developed as a tool for evaluating products, buildings or cities, the SVM has been applied in planning processes and community projects as well as in other fields (see e.g. Skjerve-Nielsen, 2009; Barahona & Oviedo, 2008). The Wellbeing Map is divided into three equal sectors; individual, local and global. One fills in the sectors up to the values assessed, on a scale from one to five. Scores below two indicate that the outcome is considered poor. It is important to note that the choice of parameters illustrated is provisional and will in any event be contextual; the relative impacts of consumption behaviours will vary between socioeconomic groups and even more in different country contexts (Fig. 11.2).

Whereas both the Sustainability Value Map and the Consumption Value Map below contain objective and subjective factors, the Wellbeing Map asks for a largely subjective evaluation of one’s feelings of satisfaction or wellbeing. And just as sustainability has both individual, local and global

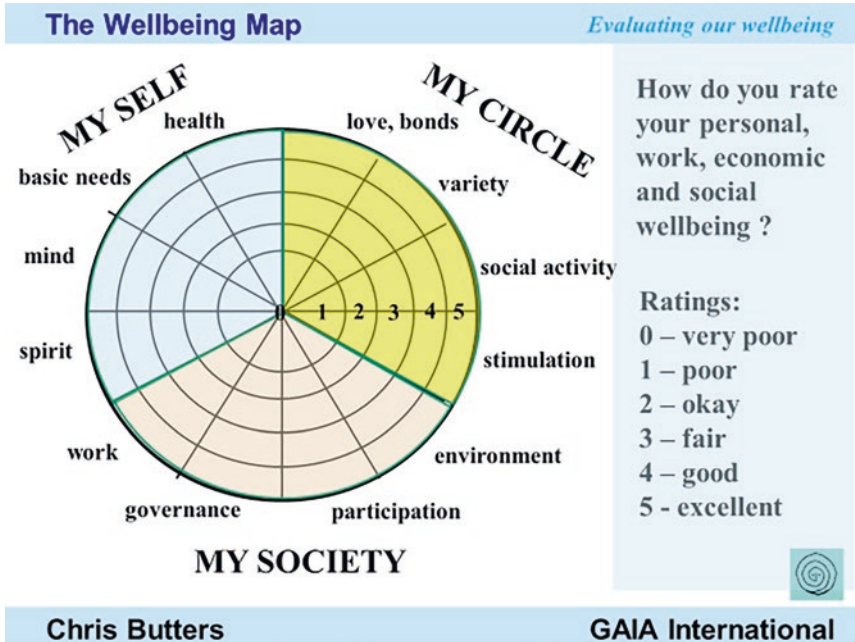


Fig. 11.2 The Wellbeing Map. Source: Chris Butters

dimensions, our feelings of wellbeing relate to three similar levels covered in the Wellbeing Map: the personal, the inner circle and society.

It is important to underline that Value Mapping offers an open system that can, indeed should, be adapted by users to their context, so that a more detailed version might have more than four parameters per sector. And of course, responses, like perceptions of wellbeing, can vary very widely. For example one person may be personally happy but perceive their country to be extremely “unsustainable”; another may perceive their country to be quite good but their own social and professional circle to be environmentally wasteful and careless; and so on. For this reason the parameters should ideally be decided by the persons or group involved. Tasking a group of consumers to develop *their own set* of criteria creates a very fruitful discussion and brings forth many key—often surprising—issues. This also ensures “ownership” of the process.

Lastly, these maps highlight the deeply contextual nature of wellbeing. It has, for example, often been noted in wellbeing studies how people

from, for example, poor and troubled Latin American countries seem to be “happier” than people from economically better-off and more stable countries. Similarly, whereas Norwegians might grumble about the quality of their governance or opportunities for civic participation and score them as a mediocre “3”, someone from a poor country in the Global South might immediately award Norway a top score of “5”. Wellbeing is indeed individually, historically and culturally relative, and intrinsically contextual.

The Consumption Value Map

Finally the same framework—again presented in a simplified form here—offers a guide to sustainable *consumption*. The Consumption Value Map asks the following question: to what extent does a given consumption item or activity enhance or detract from wellbeing—for myself, my community and my planet? Using the Map requires all our faculties: our head (knowledge, science), our body (feelings, health) and our heart (emotions, values, soul). Whilst it has the same intention as Bhutan’s famous system for Gross National Happiness,² it makes the three sustainability areas—the personal, the local and the global—explicit to users, as well as their interconnections, and links consumption choices directly to key aspects of wellbeing.

A Value Map should ideally be used both in making decisions, and for ongoing follow up and feedback processes. Whilst detailed data can be used when working with this map, for many purposes it is not necessary to make detailed quantitative estimations. Reasonable awareness of the relative impacts of, for example, solar versus coal, or eating beef versus chicken, aided by a facilitator where appropriate, will be sufficient for arriving at an overall picture and sensible judgements. Judgements should naturally be continually revisited in the light of emerging knowledge (Fig. 11.3).

To offer a few simplified examples of how this map may be used in practical decision making: Buying a bicycle is positive on almost all counts, except for the local economy (jobs for manufacture of items like bicycles are “lost” to China). Buying a car has positive effects for our own wellbeing (convenience and time saving) but negative ones for nearly

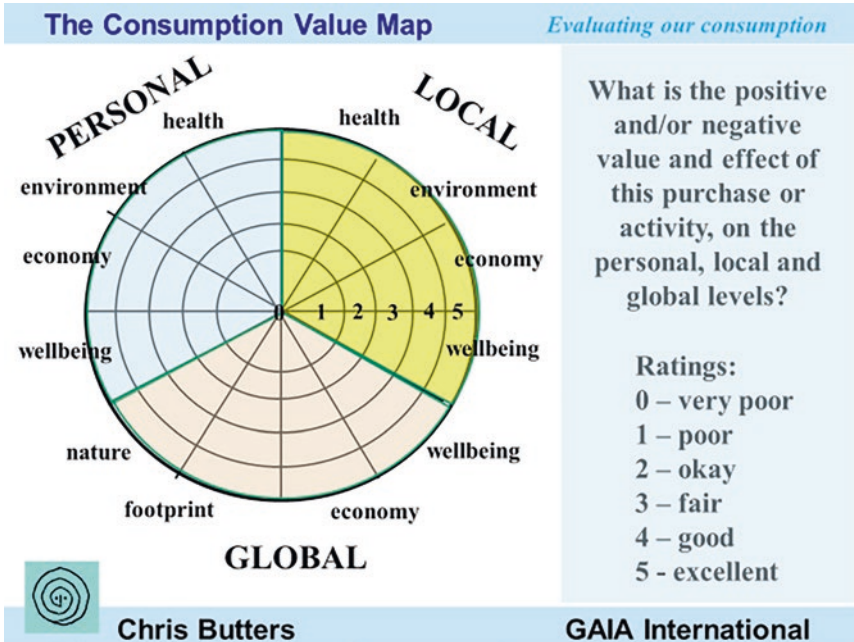


Fig. 11.3 The Consumption Value Map. Source: Chris Butters

everyone else. Tourist travel is good for Thailand's economy, for the airline and for the travellers' wellbeing but bad for much else. Buying ethical shares is good for global environment but perhaps comes at some cost to our own pocket (due to lower returns). And, buying long life or fair trade products or re-using things is ecologically and socially positive but sabotages the global growth economy.

The contextual nature of both wellbeing and consumption cannot be emphasized enough. This means that ascribing some form of universally applicable weighting to parameters of wellbeing or consumption is futile. To take the example of access to energy or water. In Norway, these will generally speaking normally be far down on a list of priorities or resource concerns, whereas in say Egypt they will be near the top. However, a few rich groups in Egypt may have both energy and water readily available, whereas for a few people in Norway—such as farmers in the inland valleys where precipitation is only 400 mm annually—water is indeed a major issue, especially if hydropower storage is allowed to reduce river flows towards the interior.

Table 11.1 Evaluating Wellbeing Intentions versus Impacts

Table 1. Sustainable consumption: the desired outcome of a purchase or activity is evaluated against the impacts—environmental, economic and social. This is considered on three levels: individual, local and global (*source: Chris Butters*)
 WHAT IS THE VALUE/IMPACT OF A PURCHASE OR ACTIVITY FOR:

Wellbeing goal:	Typical negative impacts:
PERSONAL LEVEL:	PERSONAL LEVEL:
1 My physical health, fitness	1 Unhealthy nutrition or activities
2 My environment: eco home, goods	2 Indoor pollution, toxins, energy wasting
3 My economy and meaningful work	3 Waste, luxury, lack of or boring work
4 My happiness, creativity, empathy	4 Negative or stressful focus, egoistic
LOCAL LEVEL:	LOCAL LEVEL:
1 Healthy local environment and nature	1 Pollution, noise
2 Low local ecological footprint	2 Locally polluting, resource depletion
3 Local economy and governance	3 Weakens local production and trade
4 Inner social circle and community	4 Selfish, excluding, conflictual
GLOBAL LEVEL:	GLOBAL LEVEL:
1 Healthy global environment and nature	1 Harmful to global species or biodiversity
2 Global eco footprint/impact	2 High footprint and emissions
3 Global economy, equity	3 Exploitation, inequity
4 Global tolerance, harmony	4 Divisive, excluding, conflictual

Source: Chris Butters

Building on the 12 parameters in the Map, Table 11.1 provides a summary of typical wellbeing goals and consumption impacts. Importantly, all three levels—personal, local and global—are brought into consideration.

Conclusion

There are several emerging examples of integrated, transdisciplinary ways of seeing and acting in the world, many of which sensitize us to the negative impacts that our choices and lifestyles have on others and on the planet. Among these emerging ways of seeing and acting, wellbeing studies in our view form an essential corrective to the technical-economic approaches of the past. However, the new paradigm that wellbeing studies and related approaches support needs to be further developed in the form of practical tools that can move us towards sustainable consumption. In this chapter we have sought to show how Value Maps provide, in a visually

intuitive form, such practical tools, within a framework that assists consumers to evaluate as well as to compare consumption choices in the light of an integral approach to wellbeing—an approach that integrates individual, collective and environmental dimensions. Value Mapping highlights how wellbeing of the self, the community and the planet requires a balance of all areas of sustainability. As consumers we act based on necessities, influences and habits which are both individual and collective, personal and political, conscious and unconscious.

It is tragic that our “development” paradigm encourages those experiencing one lack of wellbeing (hunger) to move towards the opposite lack of wellbeing (obesity). For example, comparing Norway and Bhutan offers useful reflections on the concept of “overdevelopment” in the richest societies (Amundsen and Butters 1995).

If wellbeing is the goal of consumption—as indeed we argue is the case—then that goal should guide not only our own choices, but how we organize our world, how we organize our finance system, what we decide to produce and what we do or do not research, always using a holistic mind-set that explores the real benefits and disbenefits of products, consumption and lifestyles. The strength of the Value Maps is that they *oblige* the consumer or policy maker to think and see in a holistic manner. By offering a simple, practical guide and tool to evaluate, communicate and make decisions, both in daily practice and in policy, Value Mapping is equally applicable on the level of macro policy. Importantly, Value Mapping stresses the process nature of the transition towards sustainable development, and offers appropriate process tools to stimulate such a transition. By also bringing many of the “hidden dimensions” into the light, by making connections visible and by stimulating new conversations and learning processes, Value Mapping may contribute to the radical change that we need.

Notes

1. Indicator sets for wellbeing are many and include the New Economics Foundation (NEF, 2019), the OECD ‘How’s Life’ (2015), the Gallup Health Ways Wellbeing Index (2019) and the Canadian index of Wellbeing (2013). Another approach is offered by the Patterns of Aliveness theory

(Kuenkel, 2015). This builds on a systems view, wherein the basic pattern of organization of all living systems is the network; and because a network is a particular pattern of connections and relationships, thinking in terms of patterns and relationships is the essence of systems thinking (Capra & Jakobsen, 2017).

2. The one country implementing a Wellbeing approach in their planning is Bhutan, whose Gross National Happiness (GNH) model is now spreading worldwide (Ura et al., 2012; Di Tella and MacCulloch, 2008). The GNH concept traces its origins back to Bhutanese Buddhist beliefs, and was formulated in 1972 by the fourth king of Bhutan. The GNH model contains nine basic domains with in total 33 clustered indicators. Seen in detail these build on a total of 124 variables. The nine domains are: psychological wellbeing, time use, community vitality, cultural diversity, ecological resilience, living standard, health, education and good governance. These are all considered equally important for wellbeing and are therefore weighted equally.

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Part V

**Making Consumption more
Sustainable**



12

Can Economics Help to Understand, and Change, Consumption Behaviour?

Desmond McNeill

Introduction

Ideally, scholarship can improve not only understanding but also policy-making: contributing “knowledge for change”. Faced by the environmental challenges of today, this is something we badly need. In this chapter, I assess the contribution of economics. Can it help us to better understand consumption behaviour; and to change it?

Economics today is a highly formalised system of thought that places great emphasis on analytical rigour, often at the expense of empirical realism. It is not hard to show that the standard textbook economic theory of consumer behaviour is severely impoverished when viewed from a ‘real life’ perspective. I do not deny this. But this claim may lead one to ignore the fact that the few explanatory factors that this theory does include—most notably incomes and prices—do explain a good deal of how consumers behave. Furthermore, these simple explanatory factors have the

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advantage that they link directly to potential instruments of policy—taxes and subsidies—which can, if suitably applied, very effectively modify consumption behaviour.

In recent decades, other disciplines—such as sociology, anthropology, geography and management studies—have developed new theories and perspectives on consumption. Contributors to this literature have often—and I believe rightly—claimed that economics has had an unduly powerful influence. For example, Wilhite (2005: 1): “the theories and models of economics have dominated the study of both energy consumption and ways to reduce it”. Economic theory has also been criticised or dismissed. A recent example may be cited from a book co-authored by Elizabeth Shove, one of the most influential scholars in the field of consumption studies. *Conceptualising Demand* (Rinkinen et al., 2021) poses fundamental questions about our understanding of this phenomenon. It is claimed, citing Callon & Muniesa (2005), that “economics operates in a realm of ‘pure calculation’ developing and working with models and variables that constitute a kind of parallel universe at one remove from the complexities of actual economic exchange, and from the historically situated practices involved” (Rinkinen et al., 2021: 17). More specifically, “consumption is taken to be an expression of individual choice, based on the ambition of satisfying needs and meeting desires and wants, limited or enabled by a willingness or ability to pay” (Rinkinen et al., 2021: 18). The authors also argue that economists are in error for not “considering the possibility that forms of supply might be implicated in making and not simply meeting demand” (17). This latter point has been made by others, including economists such as Fine, (e.g. 2013) as discussed below. While such criticism is largely well founded, it is also sometimes exaggerated or over-simplified; for example Middlemiss (2018) in an otherwise useful introductory textbook on sustainable consumption, presents the contribution of economics under the misleading title ‘people are selfish’: an unduly narrow interpretation of ‘homo economicus’.

In this chapter, I begin by presenting the standard economic theory of consumer behaviour. I then show that orthodox economists have long been aware of the limitations of this theory, and that these are not simply attributable to the adoption of the homo economicus model of human behaviour but relate also to the discipline’s preferred methodology. I then

demonstrate how some recent advances that have been accepted by the mainstream, notably in behavioural economics, have enhanced our understanding of consumer behaviour. Next I note the significant contribution made by the Marxist economist Ben Fine, who takes account of the significance of production. Finally, I assess to what extent these different theories are relevant for policy-making. Here, I argue that, despite its limitations, standard economic theory can be helpful in devising simple—and highly effective—instruments of policy to modify or reduce consumption. I conclude with some brief reflections on the potential of interdisciplinary or multidisciplinary research on consumption.

Standard Economic Theory

According to standard economic theory, a consumer's demand for a specified good over a given time period is determined by the consumer's income and by prices: of the good, and of competing and complementary goods. Also included may be the consumer's expectations about future prices. Advertising, the consumer's taste for good X , and 'other relevant factors' complete the model.

Formally, that is expressed in algebraic terms, the model is as follows. A consumer's demand for a good X over a given time period T is determined by $dX=f(PX, PR, y, E, T, A, Z)$, where

- PX is the price of the good
- PR are the prices of competing and complementary goods
- Y is the consumer's income
- E is the consumer's expectations about future prices
- T is the consumer's taste for good X
- A is advertising
- Z is tastes and 'other relevant factors'

Why are these particular factors chosen in constructing this model of consumption? And why are many others effectively excluded—simply lumped together as tastes and 'other relevant factors'? The answer, I shall argue, is a combination of the methodology favoured by economists

(building models) and the economic conception of the individual as 'homo economicus': rational, self-interested, well-informed, autonomous, maximising. And these two factors are interlinked: the economist's rather special conception of human behaviour is well suited to the construction of the models used by orthodox economists. Econometrics has for several decades, and to an increasing extent, been the favoured approach in economics. It implies *formalisation*, in mathematical (algebraic) notation. And it also implies *quantification*—a preference for factors that can be measured. Using econometrics as the basis for establishing causality, or so its defenders argue, justifies the economist's claim to greater analytical rigour than other social sciences. But these two requirements—algebraic formalisation and quantification—severely limit the extent to which standard economic models can explain actual consumption behaviour. As one economist expressed it, half a century ago:

The theory of consumer behaviour in deterministic situations as set out by, say, Debreu (1959, 1960) or Uzawa (1960) is a thing of great aesthetic beauty, a jewel set in a glass case. ... it now stands as an example of how to extract the minimum of results from the minimum of assumptions. (Lancaster, 1966: 132)

Certainly prices and incomes are significant factors in determining consumption behaviour. And these have the advantage not only that they can be measured but also that data may be readily available from existing sources. But the standard model fails to take account of many other important determinants of consumption behaviour. (The case of advertising is somewhat anomalous. It is included in the model, as having a significant effect on consumption behaviour, although according to the assumption of homo economicus it should presumably not be—since if consumers were indeed autonomous in their preferences then there should surely be no place for advertising. The 'solution' is to assert that advertising simply provides information.)

Despite these limitations, it is nevertheless true that the model has considerable explanatory power. Empirical evidence shows that prices and incomes are indeed very important determinants of consumer behaviour, at least in the short term. If the price of one type of bottled water

risers while the price of others remains the same, then the demand for the former almost certainly does fall. And a fall in income will lead to a fall in consumption of most goods. But the model does not explain the effect of the other factors, which economics is apparently not able to deal with. Here, other social sciences come into play: sociology, anthropology, psychology, marketing and so on. In brief, the standard economic theory of consumer behaviour is impoverished. As noted earlier, referring to Rinkinen et al. (2021), critics from other disciplines have often, and with justification, pointed out these limitations. But they have not perhaps acknowledged that the severe shortcomings of the theory have been recognised by economists themselves for many decades, as I shall demonstrate.

Criticisms Within Orthodox Economics

As noted, the conception of homo economicus on which the model is based draws on a number of assumptions that are questionable: for example, that an individual taking a consumption decision is autonomous, rational and the possessor of perfect information. These—clearly unrealistic—assumptions are found necessary in order for the model to be applied. But these limitations have not escaped criticism within the discipline itself. This applies most notably to the factor entitled ‘tastes’ in the model. An early example of such criticism is Leibenstein’s, 1950 article ‘Bandwagon, Snob, and Veblen Effects in the Theory of Consumers’ Demand’¹ where he shows how consumers are far from autonomous in their choices.

The desire of some consumers to be “in style”, the attempts by others to attain exclusiveness, and the phenomena of “conspicuous consumption”, have as yet not been incorporated into the current theory of consumers’ demand. My purpose, in this paper, is to take a step or two in that direction. (Leibenstein, 1950: 183)

A less technical version of the same criticism is to be found in Galbraith (1958) *The Affluent Society*. And others have contributed to the same

argument, such as Frank (1985) *Choosing the Right Pond: Human behavior and the quest for status*. Some have noted that Adam Smith himself made a similar point (Wisman, 2019). One of the most famous contributors to this debate was Gary Becker, who won the Nobel Prize in Economics in 1992.² He is notorious for carrying the economic model of selfish, rational, maximising behaviour to extremes—applying it to human behaviour regarding education, discrimination, crime, marriage and divorce and childbearing. But he also recognised the weaknesses in standard consumption theory, as it became increasingly formalised: “As greater rigor permeated the theory of consumer demand, variables like distinction, a good name, or benevolence were pushed further and further out of sight” (Becker, 1974: 254). He was particularly critical regarding ‘tastes’. Economists, he wrote, “have no useful theory of the formation of tastes; nor can they rely on a well-developed theory of tastes from any other discipline in the social sciences, since none exists” (Becker, 1976: 133). The latter claim is certainly overstated, revealing an ignorance of—if not contempt for—other social sciences.

In 1980, Angus Deaton (another winner of the Nobel Prize for economics) and John Muellbauer published *Economics and Consumer Behaviour*, which became a classic text for students of economics. They assert that: “it seems unrealistic to suppose that preferences are exogenous, God-given and unchangeable. Rather they are socially inherited and conditioned and are governed by the conventions of technology and social institutions” (Deaton & Muellbauer, 1980: 330).

This was 40 years ago. But a more recent survey confirms that the situation still obtains, despite the fact that much new research has been undertaken:

Hence, while standard economics largely abide by their assumption of stable preferences, an array of alternative approaches is now available to account for changing tastes. Some of these approaches are old and have been discussed in the literature for many decades while others are younger. However, all approaches have in common that they, in some cases surprisingly, have not made it to standard microeconomics textbooks. (Jacobs, 2016: 121).

Jacobs lists a number of factors which economists have sought to study, including incomplete information and bounded rationality, habit formation, interdependent preferences, culture and institutions, and he concludes that “it is clear that preferences are unstable from the viewpoint of the standard model in microeconomics since behavior is influenced by more factors than just prices and income” (Jacobs, 2016: 142). He further notes that “empirical and experimental studies have been concerned with a pile of phenomena that may be explained by interdependent preferences” (Jacobs, 2016: 142). The question is whether these can be handled using the methods favoured by orthodox economics. (It is worth remarking that an additional attraction of the standard economic model is its elegance; and not least the symmetry between the theory of demand and the theory of supply, which so neatly combine to create a holistic conception of the market system. To put it simply, the theory of consumer behaviour is mirrored by a theory of the behaviour of firms: each firm seeks to maximise profit—rather than utility—and in doing so acts rationally, and autonomously, on the basis of perfect information).

Some examples from mainstream economic literature will provide insight into why it is difficult to develop a more realistic model of consumer behaviour within this tradition. Take the case of the last-named phenomenon—interdependent preferences: the fact that a consumer’s tastes are influenced by the behaviour of others. One of the few economists who has attempted to find a resolution to this issue is Kapteyn, who noted that: “For a very long time the study of inter-dependent preferences has remained at the fringe of the economics profession” (Kapteyn, 2000). There are several reasons for this, but, as Kapteyn notes, “perhaps the most fundamental one is just lack of adequate data” (op.cit).

There is no shortage of research in social sciences other than economics to demonstrate that preferences are not independent. There are interesting parallels here with theories of voting behaviour in political science, where so-called neighbourhood effects have been found to have some explanatory power. See, for example, Johnston et al. (2005). But the evidence is generally not in the form of statistics suitable for econometric testing. Goldsmith-Pinkham and Imbens (2011) study what they call ‘peer effects’. These “are hypothesized to arise through networks that are formed by individuals making choices to establish links”. The authors do

manage to express this hypothesis in formal (algebraic) terms—but their model clearly cannot be tested empirically.

Another article, on the closely related phenomenon of conspicuous consumption, does—unusually—go some way to expressing this in terms that allow statistically based empirical testing. The study analyses how different very broad classes of expenditure vary with increasing expenditure, contrasting “those commodities whose ownership or consumption is highly visible to the community” with those commodities “whose consumption is usually screened from public view” (Basmann et al., 1988: 533).³ The empirical results from this econometric analysis do provide some support for the theory. But the contribution that it makes to our understanding of consumer behaviour is—by comparison with research in other social sciences—rather trivial.

In brief, the problem is not that economists actually believe that tastes are autonomous. Rather, I suggest, it is the dominance of econometrics as method,⁴ This involves not only constructing a model that can be expressed in terms of measurable factors, but also—in order to test its validity—being able to obtain the necessary quantitative data. These impose extremely severe constraints on the model’s usefulness.

Rationality—another assumed quality of homo economicus—has also been challenged. Here, there have been some interesting developments in economics in recent decades based on theories of so-called bounded rationality, to which I now turn.

Bounded Rationality

Standard economic theory has recently been supplemented by the sub-discipline of behavioural economics, which draws on psychology. Richard Thaler was awarded the 2017 Nobel Prize in Economics for his contributions to this development. In the text by the Nobel committee justifying their choice, they begin by noting that economists make a ‘fruitful simplification’ of assuming that agents are perfectly rational ‘in order to build useful models’.

Nevertheless, economists and psychologists have documented systematic deviations from the rational behavior assumed in standard neoclassical economics. Incorporating insights from psychology into traditional economic analysis has spawned the field of behavioral economics, a flourishing area of research with significant impact on many subfields of economics. (Royal Swedish Academy of Sciences, 2017: 2)

Thaler's work built on that of two previous Nobel Laureates. One was Herbert Simon, from whom he "adopted the idea of bounded rationality in its broadest sense but not Simon's view of decision-making as a 'satisficing' process" (Earl, 2018: 107). The second was Daniel Kahneman, and his work with another psychologist, Amos Tversky (Tversky & Kahneman, 1974).

According to (Earl, 2018), Thaler exposed the empirical shortcomings of rational choice theory and developed the Kahneman and Tversky perspective to make sense of a wide range of anomalies, as well as "developing a theory of 'mental accounting' and using it to understand the ways that consumers respond to different kinds of pricing strategies" (Earl, 2018: 107). Thaler further contributed to the development of a new policy instrument—'nudging'—which I shall discuss below.

Interestingly, Thaler himself appears not to regard his contribution as a rejection of the standard theory of consumer behaviour. Thus he writes:

I do not base my critique of the economic theory of the consumer on an attack of the assumptions. I agree with Friedman and Savage that positive theories should be evaluated on the basis of their ability to predict behavior.⁵ In my judgment, for the classes of problems discussed in this paper, economic theory fails this test. What I have argued in this paper is that the orthodox economic model of consumer behavior is, in essence, a model of robot-like experts. As such, it does a poor job of predicting the behavior of the average consumer. (Thaler, 1980: 57–58)

Economists' interest in consumer behaviour has, in recent years, been associated with increasing concern for the environment, and calls for 'sustainable consumption'. An article by another famous economist, Partha Dasgupta, is relevant here. He writes: "Our aim is to show that building links between sociological and behavioural economic approaches to the

study of consumer behaviour can lead to significant and surprising implications for conventional economic analysis and policy prescriptions, especially with respect to environmental policy” (Dasgupta et al., 2016: 191). He too (Dasgupta, 2014) identifies several limitations of conventional economics of consumer preferences. First, habits: that a consumer’s past consumption of a good may increase preference for that good in the future. Second, competitive or conspicuous consumption, as discussed by Veblen; where consumers seek to distinguish themselves from others. Third, where consumption of some good signals that the consumer relates to members of a social group. This last, he notes, is different from conspicuous consumption: people are here not wanting to consume more, but to consume in a similar way. While the first two limitations have already been referred to above, the third is somewhat novel. It relates to the issue of interdependent preferences, but Dasgupta introduces the suggestion that consumption behaviour may here be motivated by solidarity: a shared concern for sustainability.

Thus, in summary, it is apparent that some orthodox economists have long been seeking to improve upon standard consumption theory. They have sometimes been inspired by new directions within the discipline, such as experimental economics or behavioural economics, and by other disciplines, notably psychology. But, as Jacobs (2016) has noted, these developments have not been included in microeconomics textbooks.

Heterodox Economics: Systems of Provision

I will now consider what so-called heterodox economists have contributed to the study of consumption behaviour. The term ‘heterodox economics’ covers a number of different approaches, such as institutional, evolutionary, feminist, post-Keynesian, ecological and Marxian. Although to varying extents critical of standard economic models and homo economicus, few of these have developed alternative theories of consumer behaviour. A major exception is the Marxian economist Ben Fine, who emphasises the importance of production. This, of course, is what Marx himself does in his analysis of the capitalist system. Before describing

Fine's contribution, I shall therefore devote a few words to what Marx himself had to say about consumption.

His critique of capitalism was based on the emphasis he placed on social relations; so too, his critique of what he called 'bourgeois economics' and the categories of economics which treated as 'natural' that which was in reality dependent on the shared beliefs and practices of the people. But his critique extends only to the sphere of production. This emphasis on production is evident in most of his writings, but the precise relationship obtaining between production, consumption, exchange (and distribution) is spelled out most clearly, and in most detail, in the draft Introduction to the *Grundrisse*, in which, Marx lays stress on "the primacy of production": "Individuals producing in society—hence socially determined individual production—is, of course, the point of departure" (Marx, 1970: 6). He does not ignore exchange and consumption, but nevertheless treats production as dominant. And when it came to consumption, his analysis was as asocial as that of modern neo-classical economists. (McNeill, 2021)⁶ "Marx excluded use-value (or as it would now be called, 'utility') from the field of investigation of political economy on the ground that it does not directly embody a social relation" (Sweezy, quoted in Rosdolsky, 1980: 73). Some writers, most notably Agnes Heller, have sought to argue against this view, despite asserting that, according to Marx, "Use value expresses the natural relation between things and men" (Heller, 1974: 35). The evidence is strong that Marx's emphasis on production appears to have blinded him to the social relations of consumption.

Ben Fine, a more recent critic of 'bourgeois economics', has, however, developed an alternative theory of consumption—the 'Systems of Provision' (SoP) approach—which sees production as determinant of our consumption choices—of food, clothing, shelter and so on. In 'Consumption Matters' (Fine, 2013), he criticises mainstream economics for being trapped by its own methodology: "Advances in economics relevant to consumer behaviour tend to be confined within and adapted to the needs of the parent discipline" (Fine, 2013: 53) His approach includes insights from other disciplines, although he is wary of what he sees as the excesses of cultural studies. In his critique of standard theory, Fine noted that "the literature to an enormous extent, sets aside the role of public

provision in consumption. ... This is an extraordinary omission given the extent of the state in determining what and how we consume” (Fine, 1994: 396). The SoP approach was initially applied to the food and clothing sectors, in the 1990s, (Fine & Leopold, 1993) then to housing and water supply, and has been further developed since (Bayliss & Fine, 2020). Fine refers to what he calls systems, for example ‘the meat system’, ‘the sugar system’, ‘the strawberry system’, each of which can be understood as a complex web of structures, agents, processes and relations. His approach, he claims, recognises the significance of both material and social factors. Thus, for example, the demand for household durables is linked to changing patterns of female employment.

The SoP approach focuses on the household rather than the individual. “In this light, household consumption is not the sum of individual behavioural patterns, each consciously motivated and evaluated by the actor. Instead, household consumption is a whole set of ... social practices carried out by applying sets of rules and shared norms. They are also connected to production and distribution systems (technological and infrastructure networks) that enable certain lifestyles that connect consumers to one another” (OECD, 2002: 8).

Fine describes this approach as studying “vertically organized structures and processes that comprise the economic and social relations through which particular commodities are produced, distributed, advertised, retailed, and consumed within a material culture” (Fine, 1994: 395). This contrasts with the standard ‘horizontal’ approach which generalises across fields such as energy, food, transport, housing and clothing. Each of these, he argues, exists and functions differently (Fine, 1994: 395). Thus, in contrast to orthodox economics, SOP is much more empirically based, although Fine claims that his approach, though context and sector specific, “is not without theoretical implications” (Bayliss et al., 2013: 39).

To summarise my argument so far: both orthodox and heterodox economics have—despite their limitations—contributed significantly to our understanding of consumption behaviour. I will now, more briefly, consider the issue of how to change it.

Policy: Changing Consumption Behaviour

If a theory of consumer behaviour is to be useful for the purposes of policy-making, it should enhance our understanding of consumption as a phenomenon, and thus provide insights into how consumption behaviour might be modified. But this is of little practical use unless there also exist appropriate and feasible policy instruments; measures which can be taken to modify people's behaviour, based on these insights. The need for governments to change people's consumption behaviour has become of increased importance in recent years as public concern for the environment and people's health has risen higher on the political agenda. Calls for sustainable production and consumption were included in the Sustainable Development Goals agreed by all nations of the world in 2015, but there has been resistance to some of the measures proposed to promote this. Clearly it is not sufficient to identify instruments of policy that are technically feasible; these must also be politically acceptable.

The point is well illustrated by the first factor in the standard economic model of consumer demand, namely income. It is certainly possible for a government to reduce people's consumption—simply by reducing their disposable incomes through direct taxation. But this would be extremely unpopular; a guarantee that the politician or party proposing it would lose support. To cite a rather sardonic comment by the columnist George Monbiot “Our problem is that no-one ever rioted for austerity. People tend to take to the streets because they want to consume more, not less. Given a choice between a new set of matching tableware and the survival of humanity, I suspect that most people would choose the tableware” (Guardian Weekly January 2004). In the early years of the twenty-first century there were some calls, in the richer countries of the world, for moderating consumption. But when the financial crisis hit, in 2008, with its promise of slowing or even reversing economic growth, there was an immediate call for people to consume more—almost as an act of loyal citizenship. In short: reducing incomes would certainly be a very effective instrument for reducing consumption—but it is in political terms unfeasible.

What about prices? Here also there exist potentially effective policy instruments, namely taxes and subsidies. And these have a great advantage over measures to reduce income: they need not reduce total consumption, but only modify it. Taxes and subsidies can be used to change people's behaviour in such a way as to bring about improvements in terms of health or environment. Such measures are, indeed, in common use in most countries—for example with taxes on cigarettes and alcohol. And they work: to an extent which can be quantified. The so-called price elasticity of demand is a measure of the extent to which a change in price affects total demand; and is thus a good indication of the impact of taxes. In high-income countries (HICs) recent studies estimate that for cigarettes the figure is around -0.4 , implying that a 10% increase in price reduces overall consumption by 4%. For low and middle-income countries (LMICs) estimates range from -0.2 to -0.8 (Chaloupka et al., 2019: 89). The figure for alcohol averages about -0.64 in both HICs and LMICs (op.cit: 190) For sugar-sweetened beverages the figure for HICs is -1.2 , and about the same in—at least some—LMICs (Mexico, Ecuador and Chile) (op.cit: 191). Thus, such measures are effective. But here, also, politics is a major constraining factor. For example, there is often strong resistance to increasing taxes on petroleum; to do so has led to riots in the streets, putting governments at risk.

In brief, to modify prices—through taxes or subsidies—is undoubtedly a very effective method of modifying consumer behaviour. There are, it is true, political constraints on how far this is feasible; but there can be no doubt that this economic instrument is a very powerful one.

As noted above, orthodox economic theory has now been supplemented by behavioural economics. Here too, there exists a policy instrument that corresponds to the theory, namely 'nudging'. According to this approach, (Thaler and Sunstein, 2008) beneficial changes in behaviour can be achieved by minimally invasive policies that nudge people to make the right decisions for themselves. This approach emphasises the use of 'choice architecture', that is, the design of the environment where choices take place. A simple example is, in a supermarket, to locate carrot sticks in place of chocolates next to the check-out counter. Other examples include the strategic use of background music, lighting, smells and product placement (Carolan, 2018: 144). The latest development is so-called

hyper-nudging which makes use of information about consumers available from Big Data to “make it possible for automatic enforcement to take place dynamically, with both the standard and its execution being continuously updated and refined within a networked environment that enables real-time data feeds which, crucially, can be used to personalise algorithmic outputs.” (Yeung, 2017: 122).

There is now considerable experience with ‘nudging’. In ‘A Review and Taxonomy of Choice Architecture Techniques’ Münscher et al. (2016) distinguish between three different types, influencing either ‘decision information’, or ‘decision structure’, or providing ‘decision assistance’. Decision information “target(s) the presentation of decision-relevant information without altering the options themselves, for example, by (re) arranging existing information or changing its presentation”. Decision structure works “by modifying the available options in the decision situation, including their range or composition, the default option, or the effort required for selecting an option and the consequences of selecting it”. And ‘decision assistance’: helps people “to follow through with their intentions. For example, choice architects can foster deliberate commitment or take measures to remind people of preferred behavioral options.”

Nudging is a more subtle measure than taxes or subsidies. For this reason it may generally be more politically acceptable. Even when people are well aware that they are being ‘nudged’ they may nevertheless support such a measure. There has, however, been some resistance to the use of this instrument, both with regard to specific instances of its application and to the philosophy of ‘libertarian paternalism’ with which it is associated.⁷ It has also been questioned whether its effects may decline in the longer term. In his books, Sunstein (2008, 2014, 2016) has responded to criticism that nudges diminish **autonomy**, threaten **dignity**, violate liberties or reduce **welfare**, and argued that ‘**choice architecture**’ is inevitable, and that some form of paternalism cannot be avoided. This new instrument—nudging—supplements the existing arsenal of (non-economic) policy instruments, notably laws and regulations, and information campaigns, by seeking to change what might be called the ‘soft’ context in which consumption decisions are taken. Another type of instrument changes the ‘hard’ context: a person’s material surroundings. For example, in relation to consumer demand for mobility, the provision of roads and other

transport infrastructure. Non-economic instruments such as these derive their theoretical justification from theories from non-economic social sciences, such as practice theory. But it may well be the case that a proposed policy instrument relies on insights from both economics and other social sciences. For example, one approach for reducing energy consumption—that has been suggested, and tested—involves making consumers more aware of the costs of the energy they consume; and perhaps also how this varies over time (Wilhite & Ling, 1995). This instrument is thus based, in part, on the economic theory that the price of a good or service is one factor determining demand. Elsewhere, also, Wilhite acknowledges that economics has a role to play. Thus Wilhite (2008: 5) asserts that, in economics, “consumption is stripped from everyday practice and actors from their social interactions” but continues “this is not to say that price, income and other economic considerations are not important to consumption; in Kerala, middle class access to capital and income are one part of the explanation for growing consumption.”

Conclusion

Despite its manifest shortcomings, economic theory has much to contribute to our understanding of consumption. In addition to standard textbook theory, I have described also two other theories of consumer behaviour, based on behavioural economics and a ‘systems of provision’ approach. Both of these involve moving beyond the bounds of orthodox economics as narrowly, and typically, defined (although the former is now accepted into the fold). This is surely the way to go—if one’s ambition is not methodological purity but rather a better understanding of the real world. However one may define one’s terms—interdisciplinarity, multidisciplinary and so on—it is clear that an adequate understanding of consumer behaviour must draw on disciplines beyond economics. And the same applies when one moves from theory to policy. An adequate array of policy instruments for effectively changing consumer behaviour must also draw on disciplines beyond economics. This is not a call for a single, unified theory, but rather a call for eclecticism in both theory and

policy. Economics has a valuable role to play, along with what many economists—perhaps disparagingly—refer to as ‘other social sciences’.

Notes

1. The term ‘Veblen effects’ refers to the work of sociologist Thorstein Veblen and his critique of conspicuous consumption (Veblen, 2005). Leibenstein states that his article is also inspired by Oskar Morgenstern (Morgenstern, 1948), who, together with von Neumann, introduced game theory to economics.
2. Strictly, the prize is entitled Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.
3. Here, the study adopts the same terminology as that of Veblen’s original work (1899).
4. In debates at the American Economic Association, a few years ago, top-level economists expressed their concern at excessive technical sophistication at the expense of relevance, but it appears that young economists have been rewarded for following this path.
5. Note: Friedman (1953) pointed out that “unrealistic assumptions in models are not per se problematic. The quality of a model should be judged from the exactness of its predictions concerning the purpose of its creation rather than from the reality of its assumptions” (Jacobs, 2016).
6. Some confusion has arisen around the concept of ‘commodity fetishism’ which is central to Marx’s theory of value (McNeill, 2021). This does not refer to consumption, as some would appear to believe; for example Goodman, who writes “consumers, wreathed in commodity fetishism, are without agency” (Goodman, 2002: 271).
7. It is interesting to note that Frank, way back in 1985, proposed a “libertarian welfare state”, calling for a tax on the consumption of positional goods, that would “mimic as closely as possible the decisions that citizens would reach themselves if they could negotiate costlessly with one another in a hypothetical restricted environment” (Frank 1985: 242).

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13

Towards Sustainable Consumption: Reflections on the Concepts of Social Loading, Excess and Idle Capacity

Dale Southerton and Alan Warde

Introduction: Social Loading and Sustainable Consumption

Sustainable consumption is likely to become ever more central as both a political and a sociological issue. The nature of the problem is well outlined by Hal Wilhite (2016) in *The Political Economy of Low Carbon Transformation: Breaking the Habits of Capitalism*, where he points to the consumption habits of advanced societies and demonstrates the increasing amounts of energy required to serve automobiles, houses, house fittings and kitchen equipment. He sees these as a consequence of capitalism's dependence on growth—he is more explicit on this point than most critics. He proceeds to look for counter-measures which he locates not in individual action but state regulation and effective social mobilisation to

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promote the introduction of alternative ways to conduct everyday life in a world threatened by climate change. We can only concur with the conclusion that radical transformation in consumption patterns is imperative and agree that the solution is not likely to be found by individuals reflecting on their own behaviour and resolving to behave better or more ethically in the future. However, in the light of our suspicion that the replacement of capitalism by an economic system driven by radically different principles is not imminent, we turn for inspiration to a more limited and prosaic matter, identified in a much earlier article, written with Wilhite and Lutzenhiser (1999), which was concerned with fluctuating demand for energy. This article, 'Social Loading and Sustainable Consumption', considered the role of base and peak loads required of suppliers and showed how this inexorably tended towards escalation in demand, and thus higher levels of material consumption than the planet might sustain. In the course of this analysis they employed the term 'just-in-case' (JiC) to explain some tendencies to escalating demand. We explore further the potential of that concept, both as justification for already existing consumption and as an avenue for inventing strategies to make consumption more sustainable.

The aim of Wilhite and Lutzenhiser's (1999) article was to open up inter-disciplinary dialogues to recognise the social processes that underpin ever-increasing levels of energy use and demonstrate their interaction with the infrastructures that provision energy consumption. They did so in the context of a strong critique of energy policy and its reliance on energy-demand models derived from aggregated patterns of use. Energy-demand models focus on aggregate use because the much broader concept of energy consumption is regarded as 'too diffuse and idiosyncratic to be addressed in planning' (*ibid.*: 281). Consumption, they rightly pointed out, is not simply about use but also the shared meanings, expectations, norms of acceptable or appropriate conduct and, critically, the services that any good can provide in delivering the satisfactory performance of any social activity. Today, this perspective is reflected in the widely accepted understanding of consumption as a 'moment in almost every practice' and that it is the performance of practices that 'generates wants, rather than vice versa' (Warde, 2005: 137). If complex societal challenges such as the environmental impacts of escalating energy

consumption are to be met, simple understandings of use, rather than the practices through which consumption takes place, will just not do. And, for Wilhite and Lutzenhiser, social scientists faced a significant task in ensuring that the more subtle, nuanced, context-specific understandings of consumption are applied to inform energy policy. Many would argue both that accounts of aggregated demand continue to prevail (e.g. Rinkinen et al., 2020), and that the social sciences have yet to meet the challenge of bringing consumption as moments within practices to the front and centre of debate (e.g. Welch & Southerton, 2019).

Social loading is defined as the ‘levels of household consumption of energy and other materials’ (Wilhite & Lutzenhiser, 1999: 281) that accumulate to form the base and peak loads of human activity. Deliberately re-purposing the language of energy-modellers, who use base and peak to describe the variable levels of demand placed on energy infrastructures, they use the term base load to capture ordinary and everyday human activities that are repetitively reproduced with a predictable frequency. In energy-demand models, peak loads reflect the spikes in energy use that result from collectively timed social events such as peaks of energy use during advert breaks in popular TV shows and rush hours. Energy infrastructures are built to cope with peaks, even though for much of the time they need only cater for base loads. Contemporary energy-demand debates tend to consider this a problem of how to ‘flatten’ out peak moments of energy use; with social scientists clarifying that peak energy loads represent the collective temporal rhythms of social practices (Walker, 2014) that are fundamental to the social organisation of everyday lives (Southerton, 2020).

The more important point for Wilhite and Lutzenhiser is that the idea of peak load underpins imaginations and anticipations of future needs. Infrastructures build in future capacity, whether for the use of energy, of computing, travel, housing, office space and so on. This ‘building in’ is premised on two principles, both of which are captured by the term ‘just-in-case’ (JiC). The first principle is resilience, in which systems and infrastructures build in capacity to cope with spikes in demand and unexpected disruptions (blockages, breakdown, shortage of supply in one part of the infrastructure). The second is provision of infrastructural capacity to cater for future expansion of demand. As an aside, it is worth noting the

current social scientific interest in ‘futures’, which considers questions of how futures are imagined, by whom and in what ways do claims of the future shape action in the present (Jasanoff & Kim, 2015; Konrad et al., 2017; Tutton, 2017; Welch et al., 2020). Wilhite and Lutzenhiser do not frame their interest in JiC as ‘futures’, but their ideas certainly hold synergies with this emergent field of social scientific enquiry.

Their key argument is that energy infrastructures are built for peaks and therefore embed over-capacity in energy systems to accommodate them. Idle capacity is created to deal with exceptional, ‘just-in-case’ conditions. However, they note that today’s peak loads become the base loads of tomorrow. They provide numerous examples of this process in the field of household consumption. The ‘over-sized’ US-style refrigerator, once a device for extraordinary moments of domestic consumption (required only seldom for very large families), has become the norm. The lighting arrangements in Norwegian homes, air conditioning in Japanese homes, the rise of the two-car household in the USA and the re-purposing of bedrooms for office space, all illustrate how excess capacity is provisioned JiC of exceptional peaks, only to quickly become the base line for consumption.

The urgency of the problem upon which Wilhite and Lutzenhiser were focused has only grown since. The resource-intensity of the moments of consumption embedded in everyday practices has continued to rise despite concerted efforts towards more efficient, less polluting goods and services. Relative decoupling, where the environmental impact of each unit of consumption is reduced, has been achieved to some extent. But the problem remains the rising number of units of consumption: increasing volumes of consumption outstrip the efficiency gains per unit of consumption (Jackson, 2009; Hennicke & Hauptstock, 2015).

We think it worth exploring JiC justifications for peak loads and escalating total volumes of material consumption. Often, debate is framed in terms of ‘excess’ and ‘scarcity’: of those who consume too much or too little. As we discuss in the next section, such terms are important because they reveal inequalities and raise questions of social justice. However, they are also limiting with respect to conceptualisation of social loading problems because they imply that a homogenous middle ground between too much and too little—just enough—can be identified (i.e. some need

to consume less, others more; which is self-evidently true but helps little in shifting patterns of consumption). Section “Just-in-Case” considers the social determinants of JiC justifications. Section “Four Options for the Re-configuring the Provision of JiC Modes of Material Accumulation” outlines a set of four related options for re-framing JiC justifications for peak social loading with a view to reducing total volumes of material consumption. These are: (a) articulate rules of thumb for what constitutes an acceptable volume of personal possessions; (b) redefine those rules of thumbs for the performance of context-relevant bundles of practices; (c) harness opportunities for collaborative consumption and engagement in multiple modes of provision; and (d) utilise digital data and applications at the individual and household level to coordinate provisioning for peak social loads while minimising levels of material consumption. We argue that after two decades it is necessary for environmental reasons to take seriously Wilhite and Lutzenhiser’s challenge to disrupt the cycle of escalating consumption.

Problems of Excess and Scarcity?

Discussion, public and academic, about rising levels of consumption is often couched in terms of scarcity and excess, which is unhelpful when deployed as morally loaded terms to impute character defects, personal failings, sloth and greed. In his intriguing conceptual disaggregation of the terms excess and scarcity, Abbott (2014) reveals how these terms are inter-changeable, subjective and can be applied generically across a range of quite specific instances of judgements of too much or too little.

In breaking down the conceptual variants of the terms scarcity and excess, Abbott first shows that whatever constitutes too much or too little is subjective, relative and contextual (take e.g. the different connotations of terms such as rarity, uniqueness, insufficiency and paucity, which are all interpretations of scarcity; or bountifulness and gluttony which both derive from excess). Second, that what might constitute too much or too little is inter-changeable across scales (from individuals to societies) such that neither term can be understood independently from the other nor can they be presented as a simple binary. And yet, despite this, Abbott

argues, social theory has principally been concerned with scarcity, and when excess is considered it is done so in juxtaposition to scarcity. To provide one clear example he discusses Becker's (1965) account of the excess of consumption goods that resulted from increased industrial productivity during the nineteenth century. Becker's analysis effectively presented the excesses of consumption as resulting in a scarcity of time, because consuming places increased burdens on the time budgets of consumers.

It is important to recognise the conceptual limitations of terms like excess, but we cannot ignore the fact that current levels of consumption of goods and services damage the environment. Ultimately, we maintain that the solution can only be to combat *over-production*. Maintaining consumption at levels consistent with the carrying capacity of the planet entails capping the volume of products in circulation. However, prescribing how to do that is tremendously difficult. Often when faced with such intellectual and practical dilemmas, we turn to history for clues. However, in the past no necessary upper limit to the volume of consumption was required. Of course, moral and religious considerations have prescribed ceilings for individuals, encompassed by concepts like waste, thrift, luxury, ease, which deem materialist values corrosive of individual character and social life. On such grounds, limits to consumption of specific goods at particular moments were (and still are) followed, whether fasting at particular times of the year (Lent, Ramadan) or the observance of eating fish or meat on specific days of the week (Southerton, 2020). However, until environmental degradation, depletion of natural resources and climate change came to be recognised as requiring urgent attention, there was no compelling objective reason for restricting overall levels of material consumption. The only modern context in which limitations to consumption have been imposed across capitalist societies by political fiat is rationing during war, not to counter excess or abundance but to ensure a minimum sufficiency for every citizen.

The climate crisis presents an overwhelmingly powerful reason for establishing a collective maximum level of consumption. The world's population has a collective and joint ceiling for environmental harm consequent upon available raw materials and processing techniques. While we can hope for new technologies to reduce damage, few believe that to

be sufficient and that instead current modes of production and consumption must change, especially in the rich countries (e.g. Alfredsson et al., 2018). However, global limits are not easy to define. There are a huge number of potential trade-offs (more online communication and less travel; bicycles rather than airplanes; warmer clothing rather than central heating). Once we consider the multitude of practices whose techniques and technologies use up natural resources the scale and scope of the problem becomes tantalising.

Despite these technical and conceptual problems, many sometimes admit that they themselves have too much. Probably even more agree that other people have too much. In addition, there is consensus (at least in most affluent nations of the world) that climate change requires urgent and radical action at scales from the global through to the individual (Geels et al., 2015). The problem as presented by Wilhite and Lutzenhiser, that environmental sustainability is fundamentally a challenge of escalating levels of material consumption, remains (IPCC, 2018). Returning to the concepts of social loading and justifications for idle capacity of material goods might lead to at least partial remediation.

Just-in-Case

JiC is invoked as a rationale for justifying the acquisition and maintenance of material infrastructures to meet peak loads. Wilhite and Lutzenhiser's analysis of energy consumption examines the service outcomes of the use of energy rather than just the volume of energy used. Similarly, contemporary studies of consumption emphasise that standards and expectations related to social practices also underpin the accumulation of material goods (e.g. Shove et al., 2012; Sahakian & Wilhite, 2014).

To explore the conceptual merits of JiC in the context of material consumption we need to briefly recall Wilhite and Lutzenhiser's four 'social determinants' of base and peak loads: (a) status and display; (b) sociality and conventions; (c) security and convenience; (d) systems and structures.

These four determinants underpin base levels of consumption. Tastes act to reproduce levels of material consumption because they communicate, display and (re-)affirm senses of belonging to, and differentiation

from, groups based on interpretations of social status. The competent performance of social practices requires knowledge and skills related to the norms, conventions and appropriate use of goods and services within contexts of social interaction. Understandings of security and convenience, or of the risks attached to any sets of consumer goods together with the most effective use of time and effort in using those goods, also determine societal base loads of material consumption. Finally, base loads of consumption are made possible through the affordances embedded in infrastructures and institutional structures that govern energy services (or social practices). According to Wilhite and Lutzenhiser, the 'base load' of material consumption necessary for a satisfactory social life is regulated by these four determinants.

Each determinant also provides rationales and justifications for the just-in-case arrangements that underpin peak social loads. Status and display include aspirations and ambitions that can, at least in part, be realised through the accumulation of material possessions. Conventions and norms of social interaction are dynamic and vary across social groups, and this fosters tendencies towards the accumulation of consumption goods to cater for variety and diversity 'just in case'. Pragmatism also dictates that 'over-dimensioning' of material goods is necessary to mitigate perceived risks and maximise convenience. Wilhite and Lutzenhiser give examples of reserve stocks of goods such as food not just to manage shortages but also to cater for the unexpected arrival of guests. And, having multiple options for the preparation of food (access to take-aways, microwaves, ovens) or multiple transportation options per household offers scope for greater convenience when it comes to the organisation and coordination of household mobility activities. Finally, the infrastructures and institutional structures of contemporary societies both provide the capacity for just-in-case provision, and in so doing make explicit fears and anxieties related to the three other social determinants. In this respect, Wilhite and Lutzenhiser highlight how marketing (both business and social), advertising and media representations normalise peak loads and present those peaks as reasons why increased infrastructural capacity is 'essential'.

JiC thus provides a rationale for the accumulation of material goods in anticipation of 'peak loads' of social activities. It can be framed in positive

terms: seeking pleasures and enjoyment; shared meanings and activities; resilience and reduced labour; and as infrastructures and systems that provide greater choice and provision. But it can also be framed negatively as waste, redundancy and greed. A wide range of scenarios may elicit justification of additional provision of material goods likely to be under-utilised, including:

- Emergency, in which estimations of risk are judged against a set of possible scenarios such as infrastructural or technological failures (e.g. electricity blackout) and threats of disruption (e.g. a pandemic);
- Irregular need, in which people keep to hand and exercise personal exclusive ownership over items which are only occasionally deployed, such as umbrellas, charging equipment, tools for home maintenance;
- Unexpected events, where extra capacity may be required to accommodate guests who visit the home (e.g. a spare room, stocks of refreshments), for special occasions or infrequent journeys (e.g. a large car to transport adult children to University);
- Anticipated spells of boredom, which can involve items for individual entertainment such as reading material (spare books) or to accommodate collective entertainment (board games, toys for visiting children);
- Anticipated future practices, which may involve, for example, kitchen, gym and sporting equipment;
- Revisiting past practices, whether to recall lessons learned from error or misfortune or for purposes of nostalgia. Examples might include technologies such as old phones, video recorders and cameras retained in order to watch family videos, musical instruments and childhood toys to be passed on to future family members, and items purchased by mistake (e.g. clothing or home furnishings) that might be put to use by a friend, family member or retained in case of a change of mind.

There are many studies of material accumulation, although rarely expressed in the terms of JiC. In her account of the 'Time Bind' Hochschild (1997) described fathers purchasing camping equipment as a commitment to an idea and aspiration of competent fatherhood only for that equipment never to leave the garage. Similarly, Sullivan and Gershuny's (2004) analysis of kitchen goods demonstrate that across the

UK significant volumes of bread makers, blenders and other equipment are owned by households but rarely, if ever, used. They conclude that kitchen objects are purchased based on aspirations to use in the future JiC the opportunity should arise. And, Brembeck (2019) demonstrates how the accumulation of stuff just in case of exceptional, irregular or aspirational needs and wants, or just in case that an object may be re-used at some future time, underpins a significant increase in domestic space and storage facilities devoted to these accumulated material goods. She reveals that in the USA 3000 new storage facilities were built every year between 2000 and 2005 and, despite the average citizen's living space growing, one in ten US citizens rented a storage unit by 2013. While Europeans lag behind, similar trends in renting storage space apply: in 2017 the British had 0.5 square metres of storage space per person, the Dutch 0.47 and Swedes 0.4, which compares with 0.7 per resident of the USA (Federation of European Self Storage Associations (FEDESSA), 2014).

The JiC scenarios above are easily recognised, widely accepted as legitimate and can indeed be justified on a case-by-case basis. Spare capacity in the British National Health Service would have been a sensible precaution in the face of COVID-19 when peak load for the delivery of intensive care services was reached much too soon in the face of spreading infection. The positive consequences for social relations and human happiness of generous hospitality are to be welcomed and treasured. Making preparations for more active leisure with its effects on health and strength is unobjectionable. Hence, framing the resulting accumulation simply as matters of 'excess' misses the point, since social loading (base and peak loads) and the scenarios to which JiC logics can be applied, represent legitimate and meaningful elements of the organisation of everyday social practices. There is nonetheless a problem, which is the collective limits to the use of material resources which are damaging to the environment, let's say, in sympathy with Wilhite and Lutzenhiser, the use of sources of energy which emit unsustainable levels of GHGs. The notion of a collective maxima is, as we discuss above, a new situation when considering consumption patterns, one which Wilhite (2016) was well aware. Both a theoretical and a practical problem concerns how the malign effects of the activities of billions of individuals acting independently can be demonstrated, calculated and modulated. We have one recent example of a

potential solution with respect to reducing the environmental effects of food provisioning advanced in a recent report.

The 'EAT—Lancet commission on healthy diets from sustainable food systems' is a remarkable document (Willett et al., 2019). It goes some way towards offering a viable template for consideration of what might be enough, and how enough (not too much and not too little) might ideally be established through a scientifically informed thought experiment. It identifies a 'universal healthy reference diet' which could match best possible estimates of the nutritional needs of a global population of 10 billion people in 2050 consistent with the environmental carrying capacity of the earth. It concludes that the food system needs to generate approximately 2500 calories per person per day, with an appropriate balance of foodstuffs delivering sufficient protein, carbohydrate and fat to satisfy nutritional guidelines. The rationale for the diet's components lies in environmental limits. The report explicitly uses estimates and projections consistent with best current expert knowledge to propose modifications to current diets. Climate change, water shortages, chemical despoliation and soil depletion are incontrovertible trends to which future imaginable technological innovations will fail sufficiently to remedy without radical change in food consumption. Environmental constraints make this a zero-sum game; only a limited number of calories can be made available safely for consumption globally and if some individuals, groups or countries take more than their share then others will be deprived and malnourished.

The report presents the problem as one of collective management of the production of food on an international platform. It recognises there are many different ways to meet the nutritional standard and the variabilities of production possibilities and cultural taste across the world. EAT pays little attention to what exactly will be ingested. It is not prescriptive in that sense and retains a large element of consumer and cultural choice. It recognises a maximum global carrying capacity, estimates an optimal per capita distribution of calories and nutrients. Thus, it matches a collective maxima for the exploitation of natural resources to a standard of individual need, but without prescribing or allocating specific foods. Arguably it could thus perform all the four functions of consumption identified by Wilhite and Lutzenhiser, yet within environmentally safe limits. EAT, that is to say, has a clear criterion for what constitutes

enough, by establishing that neither more nor less is sustainable. It is of course an ideal, a basis for discussion. Can this form of reasoning be extrapolated to other forms of consumption? We think that an inquiry into the rationales invoked in just-in-case situations indicates that it might, and that this could contribute to changes in behaviour.

The possibility of establishing the needs of any individual with respect to calorific intake makes eating a specific case and one where it is *prima facie* much easier to formulate an equation indicating how preservation of the planet and the distribution of a necessary portion of resources to individuals might be aligned. We can say how many calories a woman needs. However, we cannot so easily say how many miles she needs to travel, how many recreational activities she needs to participate in, or to what temperature she needs to heat her dwelling. We can say that in all probability the dirty materials subtending her lifestyle, if she lives in the UK, are greater than the per capita limit that the collective tariff allows. And, among the most important reasons for transcending collective limits are the celebration of variety within contemporary consumer culture and the hegemonic belief that wherever possible she should provide for herself through private ownership and exclusive use of the items required to support her desired lifestyle.

There is much to be said about each of these pressures—the analysis in the last decades of the sociology of consumption underpins the claim (e.g. Evans, 2019). Briefly, however, there has been a tendency for affluent people to expect to engage in a much greater diversity of practices, and to seek variety within each. The mean number of exposures to different forms of cultural entertainment has grown; for example, most people (in the UK) now eat out and the diversity of cuisines which are experienced has broadened (Warde et al., 2020). Second, commonly thematised in terms of convenience, spatio-temporal coordination of relevant personnel in many diverse work and recreational activities requires additional resources (Southerton, 2020). The third tendency is the accumulation over recent years of goods intended for exclusive domestic consumption, like the automobile or miniaturised domestic technological instruments like *en suite* bathrooms, multiple televisions and kitchen equipment (Trentmann, 2016). This is partly the expression of an entrenched ideology of domesticity and privacy which pervades European

societies, and which is often mis-described as individualisation. It also results partly from the commodification of formerly public services and privatisation of collective activities—all motivated by the drive for profits and the political prioritisation of economic growth (Wilhite, 2016).

A possible simple and rational solution to the collective requirement would be to discourage and limit access to diversity of practices or restrict the sales of dirty items to private households. However, politics is not a domain of rational action. These are unlikely remedies in the current neoliberal conjuncture when the restriction of access would signify a cultural and economic revolution. Nevertheless, they may draw attention to issues of how to make more economical and efficient use of the dirty materials that are in circulation to serve the practical functions that variety and exclusive ownership currently satisfy. The principal currently canvassed candidates for this include ideas of a circular economy, defence of the commons, mutual provisioning and the sharing of materials and amenities. Eliminating harm attributable to JiC overstocking will probably require engagement with such concepts. This is an extensive and complex issue about which we can only make a small contribution to the bigger picture. A critical appreciation of JiC justifications reveals sources of surplus material possessions and the possibilities of doing something about it.

Four Options for the Re-configuring the Provision of JiC Modes of Material Accumulation

Strong suspicion, and appropriate caution, is necessary when considering JiC rationalisations because, as Wilhite and Lutzenhiser point out, they operate as a multiplier of excessive possessions and infrastructural capacity. Seeking strategies for minimising the negative effects of JiC acquisitions, we identify four options through which justifications might be challenged so as to reduce overall volumes of material consumption. The options are not mutually exclusive and intersect in multiple ways. The first draws attention to the problem at the level of the individual

confronting potentially surplus items. This is often addressed in ways like: asking, 'do you really need that?'; adopting principles of one-in one-out as with decluttering; expressing abhorrence of the extravagances of the plutocracy; or by conducting a household inventory of possessions. Second, reviews of JiC reasoning can be employed in contexts in which shared and inter-connected (or bundles of) practices are performed. A third option is to consider opportunities for reducing private possession and exclusive access to items to which collaborative consumption offers an alternative. As nascent examples related to the sharing economy indicate, collaborative modes of consumption can be realised through emergent configurations of market and non-market actors to provide shared services or to avert self-servicing through the private ownership of material goods. Finally, and perhaps most ambitiously, digital applications might be harnessed to provide systems that cater for JiC justifications in novel manners.

The first, most orthodox and most familiar option would get individuals to recognise which little utilised items are being consumed or stored JiC of specific eventualities and to expose their environmental impacts. This might persuade some people that, given the environmental costs, they have no need of the items, should probably discard them and certainly should not replace them. How would they decide what to abandon? Abstract 'valuations' of goods and services capturing environmental externalities in terms of embedded carbon could be defined, and allowance per citizen of total carbon from everyday consumption calculated. Voluntary monitoring of carbon budget calculations is also difficult—it is relatively straightforward to compare the carbon costs of a car journey to work when compared with a train; or of coal-fired domestic heating compared with solar panels. But when it comes to comparisons across different consumption sectors (such as food and transport) and between individual versus household or other forms of collective consumption the calculation becomes ever more complex (see Southerton & Ulph, 2014, for a discussion). Even if an absolute level could be agreed, mechanisms for monitoring and enforcing limits would be problematic. Rationing is in principle possible, although it would not be popular politically. A per capita limit might be enforced, although if done by price there would be

a concern that the rich could afford to flout pecuniary regulations and pay to exceed their allowance.

Despite these difficulties, some possibilities deserve consideration. Life Cycle Analysis (LCA) provides robust methodologies for calculating the environmental footprint of individual goods and services. Three aspects need to be considered: (a) production and distribution; (b) maintenance and storage; and (c) impetus to use and disposal. The environmental impacts of any consumer good vary across these three aspects. Take the power drill as an example. According to Botsman and Rogers (2010) the average domestic power drill is used for between 12 and 15 minutes of its entire lifetime. Its environmental impact is, therefore, principally embedded in its production and distribution with perhaps a small impact related to its storage and limited impact from its use phase. By contrast, for a private car the largest environmental impact is from its use and disposal phase, even though the average car remains idle for 95% of its lifetime (Bates & Liebling, 2012), and the implications of both production and distribution and of storage and maintenance are also high. Both, following the logic of JiC, are retained in order to have goods on hand for when needed. The total environmental impact of objects 'being on hand' might be captured in LCA metrics with contrasts offered for alternative options (e.g. renting or sharing) to offer some basis upon which the individual might evaluate and perhaps reconsider the environmental impacts of JiC accumulations of goods.

The limitation of consumer information policies, such as carbon labelling (see Hornibrook et al., 2015), is well-rehearsed. They are policies principally focused on decisions taken at the point of purchase and reliant on consumers' having the capacity and willingness to exercise judgement vis-à-vis a bewildering criterion of ethical, cultural and economic factors. However, this does not mean that the calculation of the environmental impacts of goods stocked for exceptional episodes would not raise awareness and suggest generic rules of thumb to expose the real cost of material goods accumulated JiC.

A second option, and extension to individual consciousness raising, is to make visible the environmental implications of under-utilised items and resources in the contexts of shared and inter-connected (or bundles of) social practices. Rather than limit attention the decision making of

individuals focused on singular goods, this option focuses on calculating the environmental implications of sets of shared social practices for which multiple goods and services are enrolled. Laundry practices are an example (see Mylan & Southerton, 2018). Doing the laundry comprises multiple activities: sorting and storing clean and dirty items, washing, drying, folding, ironing and so on. Those activities nestle within sets of inter-connected practices, such as school and work-based practices, recreation and recuperation. The multiple activities and bundles of practices both generate justifications of need and shape the ways in which laundry practices are performed. To reflect the environmental implications of these sets of inter-connected activities LCA metrics might be compared across alternative arrangements of suites of activities (e.g. washing plus drying plus ironing) to reveal, for example, the difference between self-service provisioning arrangements of domestic laundry and the use of collective (whether commercial or otherwise) laundry systems.

The same principles could also be applied to the spaces in which bundles of practices collide or congregate. The environmental impact of the domestic kitchen, a space in which significant JiC provisioning is located with respect to eating as well as laundry practices, could be calculated based on the extent to which different practices are performed within it. LCA might be utilised to measure the footprint of spaces (a shed, garage, loft, kitchen, office or bedroom) based both on the goods contained within them and the bundles of practices in which the goods are (or are intended to be) used. Households might then be encouraged to compile inventories to estimate environmental impacts of JiC provisioning for peak loads.

The third option shifts attention from current JiC arrangements to alternative modes of provision. At the core of this option is the replacement of dominant cultural norms of private possession of material goods in favour of collaborative consumption (Wilhite, 2016: 112–115). This shift is often referred to as the sharing economy (see Arcidiacono et al., 2018 for a systematic review of empirical studies). In their excellent critical analysis of the sharing economy, Frenken and Schor (2017) delineate between the many applications of the term. In doing so they observe that ‘sharing’ has become a marketing concept of significant value because of its emphasis on authenticity, personal relationships

and de-commodification: sharing is culturally valued and cherished, and for Frenken and Schor this is because meaningful relationships and interactions are based in sharing (see also Belk, 2009). While the marketing world nefariously hails ‘sharing’ as novel (a classic case of what historians describe as presentism), what is new about the phenomena observed within the term is that people are prepared to share with strangers (Schor, 2014).

Once the hyperbole of the marketing world is removed, at the core of the sharing economy is *‘consumers granting each other temporary access to under-utilised physical assets (“idle capacity”)*’ (Frenken et al., 2015). Benkler (2004) identifies cars, rooms in homes, clothing or food items as common examples of ‘sharable goods’ of which many consumers have ‘excess capacity’. As Frenken and Schor also observe, not only are significant volumes of consumer goods accumulated within the typical home where we find excess capacity, but the logic extends to many ‘new’ goods like cars, computer memory, washing machines and so on, which are often advertised and marketed on the grounds that they come with extra capacity.

Frenken and Schor (2017) define the sharing economy as premised on the principle of sharing the ‘idle capacity’ of goods for the purpose of performing common practices. In this definition, however, Uber—a leitmotif of sharing economy hyperbole—is *not* an example of sharing. Uber does not offer idle capacity but a commercial service in which the user can order a taxi journey. Without the order the journey would not take place. By contrast, hitchhiking or carpooling is sharing because the journey is happening anyway and the idle capacity in the form of a car seat is ‘shared’. In the case of another popular example, Airbnb is sharing when a homeowner rents out a room in their home but is not when someone purchases a property for the purposes of renting out spaces within it. Environmentally positive sharing occurs only if idle capacity is shared between consumers in the form of physical goods or services that are offered based on immediate need.

Opportunities for sharing idle capacity of goods and services could reduce the total volume of material goods in circulation. Botsman and Rogers’ (2010) examples of power drills and cars are interesting because they spend most of their lifetime out-of-service. Embedded in each good

is significant idle capacity—stored up in sheds, garages and parking lots—which, if shared, would significantly reduce the volumes of those goods. Suggestions would include neighbourhood or community stores for household goods, car-sharing pools in which members pay a subscription and service charge per use, and local networks in which members share or exchange services based on their expertise. For the purposes of our argument, whether sharing idle capacities of goods and services is mediated through market or non-market actors is less significant than their potential to meet unusual or occasional requirements through minimal levels of material goods. A commercial service may well be the only feasible option for car-sharing at scale, but local networks and community sharing arrangements (such as community supported agriculture, and local second-hand economies) may operate based on collective ownership and collaborative consumption, illustrating diverse means through which imagined JiC obligations might be provisioned by sharing idle capacity.

A fourth and final option builds on the principle of sharing to problematise and replace the orthodoxy of private possession and self-servicing. Debates about sharing, especially with strangers, are almost entirely predicated upon the emergence of digital or platform economies (Srnicsek, 2017). Digital platforms, whether as websites or digital applications, are of three broad types (see Bygstad & Dulrud, 2020). *Pure* platforms, or multi-sided digital ecosystems, refer to peer-to-peer networks consisting of consumer-to-consumer interactions (e.g. file-sharing platforms). *Window* platforms facilitate goods being exchanged between multiple producers and the consumer (e.g. Amazon marketplace). *Direct* platforms offer a direct link between a producer and consumers (e.g. the online supermarket). Fundamentally, the emergence of digital platforms facilitate sharing, whether through peer-to-peer networks that offer the scope for provisioning of goods and services outside of market modes of exchange or through digital applications which facilitate sharing as the basis of a social enterprise (or B-Corp) business model. ‘Too Good To Go’—a digital application that enables users to share unused food in advance of its use-by date—is a good example of the latter (for discussions of digital platforms and food consumption see: Heidenstrom & Hebrok, 2021; Samsioe & Fuentes, 2021; Southerton & Fuentes, 2021).

The potential of digital platforms to facilitate the sharing of idle capacity has yet to be the subject of systematic empirical enquiry. Such an enquiry would need to examine the use of platforms publicising idle capacity, consider how they compete with the dominant direct platforms operating with conventional models built on private ownership of material goods, and determine the extent to which they deliver positive environmental outcomes once unintended consequences and rebound effects are taken into account. The measures of environmental impact outlined in options one and two above could be used as a basis of empirical evaluation of the capacity of such platforms offering also the opportunity to consider how the powerful algorithms of the digital platforms might inform JiC justifications at both the individual and practice-based levels. Platform algorithms are often feared; images of Big Brother manipulating personal data to encourage more consumption portend doom (Zuboff, 2019). However, if used to draw attention to alternative means of provision, such algorithms could play a positive role in managing types of peak social loading identified by Wilhite and Lutzenhiser over 20 years ago. After all, we do not need to over-provision to meet unpredictable needs if we have digital applications at our fingertips to direct us towards other consumers or networks with idle capacities in the very goods or services required to perform those practices.

Conclusion

The fundamental object of this inquiry has been what counts as credible and admissible justifications for levels of material possessions given the environmental damage associated with their consumption. For Wilhite and Lutzenhiser the problem is not simply volumes of consumption but the ratcheting effects on ordinary, or base, levels of material consumption of extra provision 'just-in-case' a peak load arises. JiC is a justificatory rationale for accumulating more stuff. We have suggested some means for revealing to individuals the effects of the consequent additional levels of material possession. We have also pointed to the value of transitioning from private to shared possessions and from ownership to use of services. These are means to reduce the volume of goods in circulation while also

ensuring that optimum environmental standards are met when catering for both base and peak loads. Car pools and service subscription systems already exist. Ownership of automobiles has been declining in the UK, especially as younger generations appear content to pay for services over goods. Clothes are more likely to be rented today than they were in the past (Lang & Joyner Armstrong, 2018). Environmental standards (for homes, heating, transport) also exist. However, these developments seem piecemeal, fragmented and disconnected. There is no momentum to implement thoroughly, universally, and with necessary speed, responses proportionate to a climate emergency. The forms of calculations we suggest might reveal some of the tensions and contradictions associated with, as well as clarifying options for, reducing the environmental costs of material consumption.

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Afterword: Capitalism, Climate, Consumption, and Corona

One of Harold Wilhite's most important contributions to social theory consists in his efforts to connect the study of everyday behaviour, or 'household habits', with the structural features of global capitalism (Wilhite, 2016: 21). In his work, a triple political challenge can be discerned as a backdrop and sometimes at the forefront: (a) How can inequality be reduced; (b) how can the environmental and climate crises be dealt with; and (c) how can the world be made safe for (cultural) difference? The COVID-19 pandemic has made the interconnections explored by Wilhite visible in new and often striking ways, unveiling the realities, and vulnerabilities, of global capitalism and its connections to climate, culture, and the good life. Notwithstanding its possible effects on human carbon footprint, the pandemic is far from a panacea; it has led to uncertainties and deprivations world-wide, but by revealing the inequalities created by neoliberal global capitalism in striking ways, it may still turn out to be a catalyst prompting the kind of systemic change which is necessary for the sake of the planet and its inhabitants.

The now familiar observation to the effect that it is now easier to imagine the end of the world than the end of capitalism, usually attributed to

Fredric Jameson, deserves to be taken seriously. That should not be taken to imply that systemic change is impossible unless enforced by an ecological catastrophe of Biblical proportions. Rather than encouraging yet another confirmation of the Thatcherite TINA doctrine (There Is No Alternative), the pandemic has strengthened the potentials of TAMA (There Are Many Alternatives), which could be a slogan derived from anthropological research as opposed to mainstream economics, and to this we shall eventually turn. First, I will outline some of the effects, not least at the level of popular representations, of the pandemic, before considering how Wilhite's research may help in unpacking some of these alternatives.

Cooling Down as a Result of the Virus Pandemic?

It took a while, but eventually most realised that the Coronavirus pandemic represented the most consequential global event people currently alive had experienced in their lifetime, indeed possibly the most genuinely global event in human history. Using the term 'crisis' about the condition into which we unwittingly stumbled in the first months of 2020 nearly felt as an understatement. There are by now nearly 8 billion of us, and very few have emerged from the pandemic completely unaffected. Shops were forced to close, the freedom of mobility taken for granted was severely restricted, large corporations were threatened by bankruptcy, and smaller companies vanished; mortgage payments were overdue, students were deprived of their exams or fieldwork; precarious workers in the global south became even more precarious; people were lining up for food boxes in New York, others were fined for leaving their homes in Paris, while yet others teetered on the brink of starvation in Delhi; and from Johannesburg to Yekaterinburg, people were instructed to keep at least a metre or two away from each other, usually wearing facemasks when doing so. There were no more handshakes, no more friendly hugs. Our nerves were raw, and many saw clearly (or dimly) for the first time not only the blue sky in usually severely polluted cities, but

also how the global system worked, with its billions of invisible filaments connecting us to each other, through chains of production, distribution, and communication which are never stronger than their weakest link.

Virtually all activities in the physical world seemed to slow down in the spring of 2020, while virtually everything online continued to accelerate. Smoke ceased to come out of Chinese chimneys; airplanes in American airports were grounded or empty; tourist resorts in Mauritius were forced to send their employees home; and on my daily evening walks in my Oslo neighbourhood, I rarely met anyone during those days, except perhaps a local resident walking her dog while cautiously keeping her distance from me. Almost from one day to the next in March 2020, it became difficult to find a Zoom meeting, a media outlet, or a casual encounter with an acquaintance where the pandemic was not the main or indeed the only topic. It seeped into and contaminated almost every human endeavour in 2020. In rural Tanzania, rhino poaching decreased owing to disrupted supply chains, whereas hunting for bushmeat increased since many had lost their income. In the Amazon rainforest, indigenous groups were exposed to the virus because the unlawful encroachment by loggers and goldminers was no longer kept in check by bushrangers (Watts, 2020). In Norway, there were grave concerns over the effective cancellation of the Constitution Day celebrations on 17 May, which is a national ritual and a rare public event with almost universal participation where people of all social classes, age categories, and ethnic backgrounds have been milling about in festive clothing, buying overpriced balloons and ice cream for their children, and getting tipsy on sparkling wine at chilly late afternoon garden parties. Cultural life everywhere seemed to migrate to the bedrooms and lounges of artists where they could perform skeleton versions of the real thing with no audience in sight; actors were on indefinite furlough; conferences were transformed into tepid, ghostlike events on online platforms; my daughter was reluctant to visit her parents because she had a part-time job in a nursing home; and my son and I felt pangs of withdrawal every Saturday afternoon because there was no football to watch.

On a more serious note, unemployment numbers were soaring across the world, remittance payments to struggling families in Bangladesh and the Philippines were drying out, the agricultural industry in the global

north found itself in serious trouble because there were no armies of competent, affordable labour arriving from other countries that summer; restaurants were closed, re-opened, and re-closed; tourism—which may account for as much as 10% of the global economy—was all but gone; and at the time of this writing in 2022, we may yet only have seen the beginning of an economic downturn exacerbated by Russia's brutal attack on Ukraine. The pandemic will subside, but it is not likely to disappear entirely, and judging from earlier pandemics, from the Black Death to the Spanish flu, it is likely to return on and off for some time, possibly several years. The social life of the planet has become swathed in anxiety and uncertainty. The message from governments during lockdowns amounted to a perfect negation of the neoliberal creed which had predominated in the last four decades: Do as little as possible, stay where you are, and give priority to security at the expense of sacrificing freedom. Extensive subsidies and other forms of financial support from governments also showed beyond doubt that society cannot be built on the market principle, and certainly not at a time of crisis.

Hal Wilhite would not have rejoiced, but he would have made an effort to see the glass as being half-full rather than half-empty. He would probably have looked for a window of opportunity making a low-carbon transition less unlikely than it had been before the onset of the pandemic.

Pandemics in Historical Change

In this enforced, global cooling down and slowing down of an inherently destructive fossil fuel world lies a paradox and perhaps the germs of a new beginning. It is a paradox because the very global connectedness that sustains the current state of the world temporarily led to its demise. Had travel and trade been slower and less widespread, the virus would have taken longer to move and could have been contained more easily. It would also not have slowed down the economy on a global scale. The new beginning will inevitably take the lessons from this vulnerability as a point of departure, but there is no readymade recipe or roadmap to follow. We have entered uncharted territory.

Pandemics can drag on, but they tend to have marked ends and beginnings. They can be understood as liminal phases between something familiar and something new, a time when the cards are reshuffled, new ideas come to fruition, and options are open. According to a widespread interpretation, the first of the four horsemen of the Apocalypse, mounted on a white horse, represents pestilence. Plagues and epidemics have contributed to shaping and framing history at least since the agricultural revolution (McNeill, 2010 [1985]), when infectious diseases began to travel between humans and their domesticated animals. Diseases to which Europeans had developed partial immunity killed the majority of the native populations of the Americas during the conquest. A millennium earlier, the Justinian plague, starting in 541 CE, weakening the Eastern Roman Empire, and making it vulnerable to invasions and unrest, marked the beginning of the Dark Ages in Europe. The fourteenth-century Black Death was followed by peasant uprisings and the effective end of feudalism, adding germinating energy to the seeds of the Renaissance. Napoleon Bonaparte, renowned as the greatest military leader of his time, suffered two major defeats because of disease. In St Domingue, his army was decimated and rendered useless by yellow fever, leading to the proclamation of independent Haiti in 1804, and his Russian campaign in 1812 was halted by a typhus epidemic. The latter defeat effectively marked the end of Napoleon's expansionism (Snowden, 2019).

The present predicament has much in common with previous pandemics, but it is also in important ways unique: The entire world is now hyperconnected at a dizzying speed through multiple forms of mobility, ranging from tourism and trade to migration, business, and conferences. There is little flexibility in a world system of production, trade, consumption, and communication that relies on just-in-time deliveries and instant availability, and this connectedness produces peculiar forms of vulnerability, resistance, and unexpected consequences. It can bring governments down, and it can change the course of history.

In this respect, the COVID-19 pandemic displays more of a pattern resemblance with the climate crisis than with previous epidemics. It is truly global, it is invisible, it exacerbates inequality, and it is created by globalisation and the growth economy. The pandemic and the climate crisis threaten to undermine the conditions of the ways of life that

produced them as unintentional by-products of a world economic system which has been remarkably successful in improving people's lives.

Perhaps most importantly, neither of the two crises can be solved by individual countries. During past epidemics, cities and districts have restricted internal mobility and access by outsiders. Ships have been quarantined, and the visibly ill have been isolated. (The word quarantine originates in the Italian *quarantina*, signalling that 40 days' isolation was deemed necessary to be on the safe side; the term was first used in Venice during the Black Death in the fourteenth century.) Similar measures are being carried out now, but a chain is never stronger than its weakest link, and if just a few people in a few countries fail to comply with the strict norms having imposed themselves globally—test, isolate, wash, and practice social distancing—the virus will return again and again. This was the experience of 2020.

An Unprecedented Situation

In spite of parallels with the climate crisis and earlier pandemics, the Corona pandemic is unprecedented. The speed of its spread, the extent of its economic consequences, and impact on people's everyday lives—along with the many uncertainties regarding degrees of severity, growth curves, the relative efficiency of measures implemented to prevent contamination, and the way in which it reveals the frailty of the world economy—combine to create a new global situation. A global civilisation which has been committed to acceleration and growth for 200 years, and which has witnessed the acceleration of acceleration since the end of the Cold War, may now collectively realise that it is necessary to reduce and slow down. The pandemic is not the cause, but it could be a catalyst.

For 30 years, activists and climate researchers have pointed out that continued economic growth is impossible, unsustainable, and ultimately catastrophic. The investment banker Jeremy Grantham performed a thought experiment where he took as a starting point the beginning of Egyptian civilisation (Eriksen, 2016). Suppose, he said, that they possessed only one cubic metre of stuff. With a growth rate of 4.5%, by the end of the Egyptian era, 3000 years later, their possessions would fill 2.5

billion solar systems! On a more comprehensible scale, we could begin by pointing out that world trade has quadrupled only since 1980 (WTO, 2021). In just 15 years, from 2004 to 2019, the number of plane tickets sold soared from 2 billion to 4.5 billion (Mazareanu, 2021). From April 2019 to April 2020, the number was reduced by 90% (ACI, 2021). And in just 50 years, we have killed half the wild animals in the world. By 2020, just 4% of the mammals are wild, 36% are humans, and the remaining 60% are livestock, mainly pigs and cattle, while 70% of the birds in the world are domesticated, mostly chickens (Bar-On et al., 2018). At the same time, the habitats of the remaining wild animals are dwindling. Just like humans fallen victim to landgrabbing (see e.g. Wilhite & Salinas, 2019), they are chased off their land and come into closer contact with humans than earlier, opening possibilities for new, devastating virus pandemics.

One could go on and consider the growing amount of plastic in the ocean (it is commonly said that by 2050, there will be more plastic than fish in the oceans), the depletion of non-renewable resources, the cancerous growth of slums in the global south, and the global inequalities enabling the wealthy to stay safe in their suburban gardens, but condemning the poor to huddle together in dilapidated housing, from Manila to Rio de Janeiro.

The planetary ecology, having entered the Anthropocene, is revealing its frailty following massive predatory exploitation by humans, and the very causes of the ecological crisis and economic growth are also the causes of the speed and comprehensiveness of the virus pandemic.

It looks like an unsolvable dilemma. At a smaller and more pragmatic scale, governments are now caught between the health of their populations and economic stability. Millions will be out of work indefinitely. Societies worldwide will probably stop and start in a staccato way for years. Tourism, the main source of income for many, not least in the global south, is slow to recover and may be unlikely to return in its previous form, owing to restrictions and anxieties. Substantial delays and increased cost characterised the logistics of world trade well into the final quarter of 2021 (Goodman, 2021) and continued in 2022.

The cooling down of the overheated world economy has been abrupt, dramatic, and has, in the short term, led to human suffering, apathy, and

anxiety on a large scale. Economists estimate that private consumption accounts for two-thirds of the world economy. When you and I, and billions of others, spend more time at home, when cafes and hairdressers close periodically, the hotels are empty, and there are, to varying degrees, restrictions on shopping, many wheels stop turning. There is nobody there to buy discounted clothing from Bangladesh, nobody to tip the server at the local pub, and nobody to enjoy the services of a cleaner aboard a cruise ship.

It is unlikely that there will be a return to business as usual, although political and economic elites continue, doggedly, to work towards that goal. Indeed, there *should* be no return to what was, until recently, business as usual. After 30 years or more of neoliberal hegemony, a window of opportunity has been opened unexpectedly, making it perfectly respectable, and realistic, to talk about reforming society after the Coronavirus crisis. And there is no point in making predictions as to what the world will look like when the dust has settled. Our world is the product of our own imaginations, our capabilities, and our labour. We human beings are not zombielike victims of our upbringing, our societal circumstances, or our genetic heritage, although all three are powerful forces shaping us. At the end of the day, we are morally responsible for our actions. Put differently, there is no historical necessity determining what the Coronavirus effects will be. There are several options, some contradictory, some complementary, and of course there can be no straight path or single solution emerging out of this.

The False Promises of a Green New Deal

Hailed by some politicians and businesspeople as a solution to the climate crisis, a transition to non-fossil energy as a main resource in the economy is unlikely to solve the problem unless the economic world system changes in more fundamental ways. One of the most knowledgeable writers about energy, Vaclav Smil (2017), has argued that such a transition would require enormous investments in infrastructure over an extended period. His recommendation for now is therefore, for the affluent, to consume less, in other words to slow down and cool down. Besides,

renewable, carbon-neutral energy has its own issues to do with extraction and pollution. The most fundamental critique of the GND proposals is nevertheless that '[g]reen economy models continue to rely on the driving forces of capitalism (growth, efficiency, rationality, productivity) in efforts to transform to low carbon' (Wilhite, 2016: 78).

If the approach to economy, societal success, and human well-being remains the same during a proposed transition to green energy, rebound effects are likely. This means that the energy saved through some scheme or other will be used elsewhere. First described in economics by William Jevons (1835–1882), the argument is that increased energy efficiency reduces energy costs and therefore increases overall energy use. Jevons's paradox has been picked up by many later commentators on peak oil as well as scholars studying conditions for ecological sustainability, and it has not been disproven. Although there is a healthy growth in global investments in wind and solar energy, fossil fuel consumption continues to grow. As shown by Winther and Wilhite (2015), installation of energy-saving heat pumps in Norwegian homes did not generally lead to a reduction in their energy consumption. Instead, the energy saved was used to heat rooms, such as bedrooms, which had previously been cold and sometimes to extent the heating period into the warmer months.

Criticising the rhetoric of 'facing reality' in rebuttals of radical green critiques of capitalism, Wilhite argues that in fact the "reality" is that the logic of capitalism and the habits fostered by it are causing violence to the environment' (2016: 79). One could go further, adding that the contemporary, overheated global growth economy is undermining itself. Alf Hornborg (2019, see also Trawick & Hornborg, 2015) has showed that fossil fuel capitalism is inherently destructive by using up non-renewable resources in a world of limited good. Indeed, the very idea of endless growth, shown to be an impossible concept, is a recent one and one directly linked to the fossil fuel economy. Energy resources which have taken the planet many million years to produce are being burnt up and allowed to dissipate as useless and harmful heat into the atmosphere (in accordance with the laws of thermodynamics) in just a few generations. By doing so—that is, by creating enormous short-term material benefits and opportunities for a fast growing global population—we are simultaneously producing enormous environmental damage, ultimately altering

the geology and the climate of the planet irreversibly and catastrophically. Paradoxically, technology, in itself a powerful negentropic force, produces increased entropy as a side-effect. It is meant to create order out of chaos, value out of inanimate nature, but by doing so, it heats up the planet.

There is no easy way out. Not only the corporations and political leaders, but also a rather large proportion of the world population is committed to consumerism as a path to the good life. World trade has quadrupled between 1980 and 2019, and to a very large part of humanity, neoliberal globalisation seems to have delivered the goods by enabling growth in consumption. How to wean them, or us, off this narcotic dependency, or addiction, is not going to be easy. It is true that there exist thousands of alternative communities basing their existence on values other than increased consumption (see e.g. Kallis et al., 2020), but attempts to scale up these practices are complicated for several reasons, one being that certain services and infrastructures in a complex society by default must be organised as large-scale endeavours, such as railways and hospitals. After half a century of green countercultural movements, many of them theoretically waterproof, democratically organised, and rational in their resource allocation, one lesson learned is that capitalism is perfectly capable of tolerating a significant number of ecologically sound communities scattered around the world. Sometimes it succeeds in co-opting them, as the history of politically radical popular music from the 1960s shows; sometimes it just destroys them, as the history of small stateless peoples indicates—or capital may afford just to ignore its adversaries as long as they do not grow too big and vocal.

It is precisely at this point that Wilhite's work on consumption, inequality, and sustainability can turn out to be inspirational and important in building 'slow hope' (Mauch, 2019), pointing towards alternative futures.

Degrowth Economics

In an analysis of 'green capitalism' and in particular REDD-UN projects of the early 2000s, Wilhite and Cecilia Salinas conclude that it has benefited neither forests nor forest-dwelling peoples, and that it suffers from

a triple burden: (1) Extractive capitalism, (2) the consequences of climate change that has its sources elsewhere, and (3) the market-based global environmental regimes established in the name of climate mitigation (Wilhite & Salinas, 2019: 164). As is the case with other benevolent schemes intended to save the environment and empower people, these projects fail because they lack a systemic critique. However, as ecologically aware authors know, the critique of the last generation was inadequate because of its exclusive focus on the human world. Tellingly, the late David Graeber's voluminous and penetrating writings on the failings of global neoliberalism rarely discuss climate, the environment, or for that matter the limits of growth owing to physical constraints (see e.g. Graeber, 2012). Authors like Hornborg (2019) and Wilhite (2016) offer a more useful perspective for this simple reason.

To Wilhite's work on habit I shall soon turn, but first a few comments on degrowth and technology are necessary. Degrowth economics, often associated with Herman Daly's work (Daly, 1997), is marginal in academic economics, and actually much of the degrowth literature may well be seen as general social science rather than economics. Contemporary degrowth economists like Giorgos Kallis (Kallis et al., 2020; Kallis, 2018) come across, much like Adam Smith in his day, mainly as moral and political philosophers. Notwithstanding its frequent reliance on mathematics and modelling, economics is essentially a moral science with a message, be it implicit or explicit, about the good society and the meaningful life. As regards degrowth economics, the message is mostly explicit: Since the material resources in the world are limited, they have to be subject to responsible stewardship. Since much of the inequality on which the economic system rests is unjust, a redistribution of assets is desirable. Since growth is absurd and dangerous, it must be reversed. And finally, since the good life is about values and not mere value, the normative basis of economic activities should be shifted from profit-maximisation and consumerism to meaningful activities and conviviality.

Admittedly, several of the degrowth exemplars presented by Kallis and his co-authors are reminiscent of the ecovillage movement described by Wilhite (2016: 108–110)—not capable of, or necessarily interested in, contributing to systemic change. Kallis and his co-authors nevertheless do concede that decentralisation to the community level has certain limitations:

Are we proposing to feed nine billion people with urban gardens, lodge everyone in co-housing, and raise the world's children in neighborhood circles? Indeed not: we encourage support for cooperative modes of production, consumption, and caring in order to complement and renew large-scale public arrangements and forms of private use or ownership. (Kallis et al., 2020: 56)

It should also be kept in mind that the problem for the two-billion poorest is not overheating, but a persistent chill which has deepened as a result of the pandemic. A meaningful objection to degrowth economics, with which Wilhite was familiar not least owing to his work in the Global South, is precisely that complaints about neoliberal overheating seem to be an affectation of the affluent. The immediate problem facing many societies and communities in the south is not overconsumption, but poverty and a lack of opportunities, as a result of power disparities. Hornborg (2013: 51) speaks of this asymmetry in terms of energy flows:

[T]he world market conceals asymmetric flows of energy that contribute to global inequalities in the distribution of technology, purchasing power, and environmental quality—a proposition that I would wholeheartedly endorse—let us talk about precisely that: asymmetric flows of *energy*.

But let us for now focus on the global middle classes and not the global precariat. It is the former that is at the root of the problem, as the immediate beneficiaries of environmental destruction and the main instigators of climate change.

Perhaps the most fundamental insight from degrowth economics is the notion of limited good. Caricatured by Marx and Engels and seen as obsolete under industrial capitalism, it is now returning with a vengeance owing to the realisation that capitalism is too successful for its own good and is undermining the conditions of its own existence. For 200 years, the machine age entailed such monumental increases in productivity (Smil, 2017; Morris, 2017) that the physical limits of growth were irrelevant, environmental damages wrought by industrialism written off as externalities. In the Anthropocene world, this is no longer the case. Yields decrease, phosphorus (essential for chemical fertiliser) could become

scarce, biodiversity is dramatically reduced, plastic fills the oceans, and the climate has become erratic and overall warmer than it used to be.

There are just three kinds of traffic on a highway: Free flow (drive as you like), synchronised flow (adjust to other traffic), and the traffic jam. At the time of the Napoleonic wars, when there were still just a billion of us, we could—in James Lovelock's words—do pretty much as we liked (Lovelock, 2007); Gaia would recover. That is no longer the case, and rather than riding roughshod over the planet, as the torchbearers of expanding capitalism have been accustomed to, we will soon be forced to look in the side-mirror before changing lanes; indeed, we should have established that habit long ago.

Neo-Malthusianism

The spectre of Malthusianism, loathed by left-leaning intellectuals at least since 1848, threatens to raise its head once again. The late Enlightenment physiocrats, who held that wealth was a result of neither bullion, trade, nor industrial refinement, but ultimately food production and mining, may be due for a renaissance (see Hornborg, 2013), but directly connected to physiocracy is Malthus's infamous formula to the effect that whereas food production grows arithmetically (1, 2, 3, 4 ...), population grows geometrically (1, 2, 4, 8 ...), leading to famine unless people learn to abstain from excessive reproduction. Until recently, Marx and Engels seem to have proved Malthus wrong owing to massive development in the means of production. My father, born in the 1930s, once pointed out—at a time when I spent a summer as a teenage green fundamentalist—that when the malodorous black smoke descended on the city, people would say that it smelled of money. Keep in mind though that at the time we were fewer than 3 billion, and neither rainforest logging in Sumatra nor plastic clogging of Chinese rivers had made a dent in the belief in progress which was shared by nearly everyone who knew it, be they conservatives, liberals, or socialists.

There remains a skeleton in the closet whenever degrowth economics is brought to the table, namely that of Malthusianism (see Kallis, 2019 for a rebuttal). Populations grow much faster in the south than in the

north, while the shrinking minority of white people contribute far more than anybody else to climate change and environmental destruction. More than a hint of racism thus accompanies any suggestion that world population should de-grow along with the economy. It is not irrelevant in this context to mention that the green pioneer William Vogt (*The Road to Survival*, 1948) thought famines in India were necessary, and that the man who formulated the principle of the tragedy of the commons, Garrett Hardin, eventually became a card-carrying white supremacist and hardcore Malthusian.

Degrowth economics nevertheless presupposes a reduction in population. Neo-Malthusianism carries too much colonial and racist baggage to be a feasible option. However, recent projections indicate that the global population will shrink substantially on its own accord during the present century. The main exception is Sub-Saharan Africa, and recent predictions now indicate that Nigeria may be the world's most populous country by 2100 (Vollset et al., 2020).

Habit and Structure

It is arguably in his research on everyday habits in the global middle classes that Wilhite is at his most original. In his work from Kerala (Wilhite, 2008), he showed how class and caste articulated with consumption and mobility in a setting where many low-caste *Malayalis* returned with money after having worked in the Gulf. While their new wealth upset the traditional caste hierarchies, a more striking and perhaps surprising change concerned the first investment in household appliances. Houses electrified and refurbished, the first major purchase for many was an air conditioner. The direct environmental impact is obvious, and Wilhite has later showed how new dwellings in many parts of the world rely on artificial air cooling since they lack natural ventilation. This shift was also apparent in the subtropical Queensland city where I did fieldwork in 2013–2014 (Eriksen, 2018), where the traditional 'Queenslander', a wooden house on stilts, has by and large given way to airtight concrete bungalows with no entry points for the cooling breeze.

The example is telling. Since private consumption amounts to about two-thirds of the global economy, the shift from naturally ventilated houses to houses reliant on air conditioning is not trivial. The cumulative effects when not just Americans, but also Brazilians, Chinese, and Indians ‘discover’ that they simply cannot live without air conditioning, and can afford to have it installed, should not be underestimated.

Seen through the myopic lens of the small scale and short term, it stands to reason that an individual’s energy use makes no difference. The sheep has already been slaughtered, and the plane would have departed anyway; the emissions from my air conditioner are negligible, and besides I do take my pushbike to work, don’t I? In research on consumption and climate change, the significance of findings relies on the connections made between the household and the systemic level, in other words the unintended, cumulative, significant effects of a great number of individual actions which in themselves are relatively harmless. A version of the tragedy of the commons (Hardin, 1968, but cf. Ostrom, 1990), the large-scale effects, or unintended consequences, of innumerable individual actions ultimately serve to undermining the system as such. Thus, at the political level, following the analysis, the task consists in making these linkages visible in such a way as to make a difference.

In order to visualise the force of habit, Wilhite has been concerned to show how quickly it changes, and how different habits can be between otherwise similar societies. For example, the contrast between forms of mobility in the USA and Germany is striking; in the USA, middle-class people fly and drive, while in Germany, they take the train. The number of electric light sources in a typical Oslo living room is 9.6, while in Fukuoka, Japan, it is 2.5 (Wilhite et al., 1996). Norwegians tend to heat their entire house except the bedroom during winter, while the Japanese restrict themselves to heating one room. Following up on this insight, Sahakian and Wilhite (2014: 30) describe changes in the preferred indoor temperature in Europe, showing that it has increased by about five degrees in a couple of generations.

Other habits have also changed in the last century of growing affluence. Wilhite (2016: 55) observes that his great-grandmother’s ice box, purchased in 1910, was about 0.10 cubic metres, while the average refrigerator today is more than four times the size. Floor heating is another

example. In my childhood, bathrooms were chilly. In the 1980s, heating cables came into our world, and the experience of walking barefoot into a bathroom in winter became an act associated with sensory pleasure. Just a decade later, however, a bathroom without floor heating was considered a cold and disappointing bathroom.

Owing to the law of diminishing returns, new luxuries quickly become necessities without affecting the perceived quality of life, and for this simple reason, people in a consumerist society are given to understand that they ought to increase their consumption in order to maintain their quality of life (Eriksen, 2015; Wilk, 2009). It must nevertheless be kept in mind that habit is framed by circumstances. Drawing on Bourdieu's work on *habitus* (Bourdieu, 1972) as well as Lave and Wenger's (1991) theory of community learning, Sahakian and Wilhite point out that it should be seen 'not as an individual experience but as participatory and social' (Sahakian & Wilhite, 2014: 31). This insight can be expanded to knowledge in general. It has been confirmed by cognitive research that knowledge, often believed to be individual, is in fact distributed and shared within a community of communication (Sloman & Fernbach, 2018). In other words, belief in individual choice and will power as a means to change one's way of life is misleading and ultimately unproductive (see also Bateson, 1972).

Sahakian and Wilhite (2014) identify a few best practices nudging everyday habits in a sustainable direction. The London on Tap campaign in 2007 succeeded in shifting consumer preferences away from bottled water (see Wilk, 2006 on bottled water as a commodity). In the 1990s, the mayor of Oklahoma City saw the obesity problem in the city not as a result of individual decisions, but as structurally determined, and took initiatives to make the city more attractive to bikers and pedestrians. Their third example, from Geneva, shows how a campaign for local, sustainable food had an impact on consumer preferences.

Such initiatives, which insist on seeing consumption as being embedded in a wider social context, have influenced and modified habits in many areas. Wilhite (2016) also speaks of collaborative housing (the size of households has shrunk, leading to reduced sustainability), collaborative consumption (such as carpooling), and models of community which strengthen the moral responsibility of residents. Yet, he has no illusions about the potential

of these changes to alter the world system, which remains committed to growth and short-term profits. The degrowth economics and communal solutions advocated by Wilhite for many years (see e.g. Wilk & Wilhite, 1985) are poised against powerful alliances of politicians and corporate leaders. The coal billionaires Charles and David Koch ‘have openly dedicated millions of dollars to climate denial research’ (Wilhite, 2016: 121)—at the time of David Koch’s death in 2018, the figure was, to be exact, \$168 million (Greenpeace, n.d.), just to mention one example. Norway, where Wilhite spent most of his adult life, has marketed itself abroad as a sustainable, ecologically responsible country, while simultaneously continuing to expand its oil and gas operations, increasingly into extremely vulnerable ecosystems in the far north, regardless of whether the senior partner in the government coalition is the Conservative or the Labour Party.

Cranes and Skyhooks

Breaking the habits of capitalism, to quote the subtitle of Wilhite’s, 2016 monograph, is not exactly a straightforward and simple task. A main problem consists in scaling up successful local experiments and practices. It is not as if there is a dearth of knowledge about environmental destruction and climate change, but powerful interests militate against taking steps to mitigate or reverse the destructive path on which we find ourselves. Their final and most powerful argument consists in appealing to people’s right to consume. As an Australian coal executive retorted when I asked about the ecological wisdom of exporting large amounts of coal to China and Japan: ‘What right do we have to deny the Chinese the same opportunities and material welfare that we enjoy ourselves?’ *Touché*. Yet, the answer should be that ‘we’ should change our ways, as many do.

The theoretical interest in habit that informed Wilhite’s work for more than 30 years may be essential. Using his double competence in economics and anthropology, he was keenly aware of the significance of behavioural economics in order to understand why people act the way they do. However, he also showed that asking people about their behaviour is not sufficient—one has to observe what they actually do—and why the mathematical,

model-based abstractions which are predominant in economics (with many exceptions, from Herman Daly to Thomas Piketty) are inadequate.

Comparative research on habit may actually turn out to be a crane replacing the skyhooks of utopian thinking. In Daniel Dennett's Darwinist philosophy, the contrast is foundational. Skyhooks are invisible hands, minds, or forces shaping events in the physical world. In Dennett's words, '[d]esign can emerge from mere Order via an algorithmic process that makes no use of pre-existing Mind. Sceptics have hoped to show that at least somewhere in this process a helping hand (more accurately, a helping mind) must have been provided—a skyhook to do some of the lifting' (Dennett, 1996: 83). In the present context, skyhooks may be seen as desktop exercises, deductive schemes, or general theories to which the facts must conform.

By contrast, a crane is firmly anchored on the ground, but makes a bird's-eye view possible because it telescopes into the sky, providing an overview and an appreciation of connections which are not available if one stays on the ground. Dennett describes it as 'a subprocess or special feature of a design process that can be demonstrated to permit the local speeding up of the basic slow process of natural selection, and that can be demonstrated to be itself the predictable (or retrospectively explicable) product of the basic process' (Dennett, 1996: 76).

In Wilhite's work on habit and consumption, there is a potential of building a crane. As with biological evolution, the proof of the pudding is in the eating, which is to say that a tweak or change must be immediately beneficial (or at least neutral) in order to work. If it can be convincingly demonstrated that changing habits do not reduce the quality of life (but may indeed improve it), the cumulative effect may be that of a crane creating a snowball effect at the tipping point where a critical mass of people come to realise not only that ecological responsibility and degrowth do not undermine their quest for happiness, but that they form part of a global movement where knowledge is shared and habits are mutually reinforcing.

Concluding Reflections

It is time to return, towards the end, to the potential lessons to be gleaned from the pandemic. Now that the future has been put on hold recently, the pandemic may stimulate a political imagination indicating that things could be otherwise. The first priority may be to ensure that people who have lost their livelihood can once again be able to support themselves. If they cannot return to their former jobs, governments may give incentives or create jobs in new domains. Ecologically sustainable jobs can be made to replace unsustainable ones. Some states may introduce some kind of UBI (Universal Basic Income), which is unlikely to amount to the equivalent of a full salary, but even 10% of the average income in a country can make a difference, as experiments with UBI in countries like Namibia have shown (Standing, 2017).

Governments may be hard up economically, having spent billions on relief packages to prevent mass bankruptcies and widespread unrest, although the burden of debt was temporarily eased owing to the low interest in the global economy in the first year of the pandemic. This could nevertheless be the right moment to propose a reform of tax regimes. Taxation on consumption and production with a focus on climate and ecological sustainability would almost by default stimulate green businesses and reduce ecological footprint. Many governments are likely to give priority to saving companies rather than thinking ahead, but green taxes can be productive if wisely spent by the public sector. The leadership of the European Union has been unequivocal in stating that recovery has to nudge the European economy in a green direction, unlike countries like Australia, Saudi Arabia, and Norway, which continue to profit from fossil fuel exports.

A more radical proposition would be to rethink the economy in a more fundamental way. One might say, rhetorically, that until now the economy has served the interests of the few, enabling already absurdly rich people to grow even richer; now is the time to create a human economy with the explicit aim to satisfy the needs of people instead—the need for a livelihood, recognition, and social fulfilment (see Baer, 2021 for an engaged, academically sound defence of this view).

This argument may in turn be extended to interrogate the way we think about work in general. The boundary between paid and unpaid work has been criticised by feminists in the past, pleading for a recognition of housework as labour. In the present and near future, voluntary work with elderly, children, refugees, and disabled people, and perhaps voluntary work involving nature preservation, beautification, and civil society activity, may be recognised as valuable work on a par with the standard salaried job. Mechanisms to ensure that these valuable, but undervalued activities can sustain people materially can be put into place.

For years, some intellectuals and politicians have preferred to talk about the quality of life rather than standard of living as a measure of the way things are going in a society. Since the pandemic has enforced new perspectives on the economy and work, it is now more credible than it was before March 2020 to pursue this idea to its logical conclusion, as in degrowth economics. One might even use the slowed-down, cooled-down, and scaled-down lives during the pandemic, at least in the affluent countries, as evidence that the quality of life does not depend on high productivity and frantic consumption (Eriksen, 2015; Wilhite, 2016: 77).

Globalisation as such is already being questioned in new ways. Since globalisation is impossible to escape, which not least the pandemic has showed, views for or against globalisation are uninteresting until they are made specific. For example, some are favourable to extensive international trade and continued financial globalisation, but negative to immigrants and foreigners in general; with others, the view may be the direct opposite. A perspective growing out of the COVID-19 experience consists in combining an openness to global dialogue with restrictions on trade arrangements that create dependency and vulnerability.

Generally, the search for scapegoats seems to be endemic to pandemics. Just as the former president of the USA, true to character, spoke of COVID-19 as 'the Chinese virus', European Jews were often accused of being responsible for plague epidemics in the past. With the exception of China, in every country, there are voices emphasising that the disease is something imported through mobility from abroad. In Norway, the already stigmatised Somali minority is overrepresented among victims, which does not facilitate their full acceptance by the majority. Conversely, in some African countries, racist abuse against Europeans was been

reported in the early days of the pandemic, since the virus arrived to those countries from Europe.

Following a reasoning of this kind, the pandemic is being used by political forces favouring nationalist withdrawal, more policing of boundaries and less immigration. When other people are the potential bearers of a disease that may kill your family and yourself, suspicion of other people in general, and strangers in particular, is close at hand.

At the same time, the global character of the pandemic shows that we rely on and are connected to each other in multiple ways. There is close international collaboration among researchers working towards a vaccine, and not even North Korea is sufficiently capable of protecting itself from contact with the outside world. So there is likely to be more aggressive nationalism, but also more cosmopolitan humanism, as a result of the crisis.

Another aspect of globalisation concerns its very engine, the free trade doctrine which became a shared global ideology with the formation of the World Trade Organization in 1995, and the resulting interdependence that in turn created the vulnerabilities which were made visible by the Coronavirus pandemic. In some countries, people seriously began to question the wisdom of being dependent of global supply chains for anything from medicines to food and machinery. A possible outcome could therefore be a scaling down of production and a reduction in international trade. Seen from the perspective of climate and the environment, this would not be a bad idea.

In this lies a possibility to see the glass as half-full rather than half-empty. The Coronavirus pandemic is the creator of butterfly effects, a magnifying glass and a catalyst which highlights the interconnectedness and vulnerabilities produced by a globally interwoven economy. Small causes often have major consequences in this kind of world. And it is worth reminding ourselves that the same kinds of butterfly effects—channelled through global supply chains and webs of production, distribution, and consumption—have been a blessing for millions, possibly billions of our contemporaries, but a catastrophe for future generations. The situation calls for afterthoughts, humility, and political imagination.

Suddenly, the notion of a post-capitalist world is no longer a utopian idea nurtured by wild-eyed activists and intellectuals out of touch with

reality. It may force itself upon the world, as a viable alternative and a realistic option enabling us to kill several birds with one stone: The recent and future pandemics can be kept under control in a slower, more scaled-down world; a human economy will create more social justice; and an ecologically sound way of life may yet save the planet. The post-corona society may even prove to be a recipe for a more fulfilling life in the global middle and upper classes, with more slow time with family and friends, a deeper engagement with the physical environment, more time to read novels, walk in the woods, and bake sourdough bread. Perhaps in ten years' time, many will look back and ask themselves why we didn't make the transition sooner. As suggested, degrowth economics may come onto the agenda in unexpected ways, simply because the right to participate and contribute to society has become a scarce resource.

Many will respond to these ideas with shrugs and dismissals, and so far, they have history on their side. At the time of this writing, it is clear that since the easing of lockdowns, pollution levels have bounced back to pre-pandemic levels, and extractive capitalism was back on track by the end of 2020 (Watts, 2020). One of the few enduring insights from postmodernism was nonetheless that history does not have a predetermined direction. At the moment, something important is at stake, and the outcome depends on the ability to change our habits in ways that will prompt systemic change and save humanity from digging its own grave and that of many other species. No single solution will work for all of humanity, regardless of universalist economic models. In this endeavour, Hal Wilhite's contributions may turn out to be of paramount, indeed prophetic, importance. More than most, he was aware of the subversive, creative, and positive potential of the TAMA doctrine: There are many alternatives.

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