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Applying the fundamental human needs approach to sustainable consumption corridors: participatory workshops involving information and communication technologies

Mònica Guillen-Royo

Faculty of Social Sciences, Nord University, Bodø, Norway

ABSTRACT

This article discusses economist Manfred Max-Neef's approach to fundamental human needs (FHN) as a potential framework for the study of and action on sustainable consumption corridors. The FHN perspective distinguishes between *human needs*, which are universal; *satisfiers*, considered culturally and historically relative; and *consumer goods*, which change with fashions and across socio-economic groups. The conceptual framework is supplemented by a participatory methodology designed to identify the constellation of synergic satisfiers, which, by not being detrimental to any human need, are ontologically linked to environmental sustainability. The article situates the FHN framework within the sustainable consumption literature by discussing three paradigmatic dimensions (analytical versus normative, individualist versus systemic, and reformist versus revolutionary and reconfiguration) that connect to socio-technical and practice theoretical perspectives on consumption. The results of needs-based workshops at the University of Oslo are drawn on to illustrate the contribution of a FHN perspective. Using the case of information and communication technologies (ICTs), the study finds that if synergic satisfiers such as shorter working weeks, noncommercial meeting places, simplicity-focused lifestyles, and direct participation in local policy making are present in the society, ICTs can contribute to the fulfillment of human needs and environmental sustainability. The constellation of satisfiers that define such a condition supports the emergence of maximum and minimum standards in the use of ICTs.

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Sustainable consumption; human needs; synergic satisfiers; sustainable consumption corridors; ICT

Introduction

Wellbeing researchers working on sustainable consumption are increasingly using theories of need as a conceptual framework for their work (Brand-Correa, Martin-Ortega, and Steinberger 2018; Di Giulio and Fuchs 2014; Gough 2017; Guillen-Royo 2010). Needs-based approaches link up with the classic definition of “sustainable development” in terms of production systems and consumption patterns for meeting the needs of current and future generations (WCED 1987). They add a normative dimension to descriptive theories of consumption through concern for intra- and inter-generational justice and equity, while making a strong theoretical claim with respect to satiation. The latter implies that the volume of goods, services, and infrastructures required to achieve an optimal level of needs satisfaction diminishes as the quantity increases and eventually levels off—a point highly relevant in connection with environmental breakdown (Gough 2017, 46).

Not all needs theories are equally suited for analyzing consumption and the development of sustainable consumption policies (Gasper 2007; Gough 2017). Doyal and Gough's (1991) theory of basic needs and Max-Neef's (1991) perspective on fundamental human needs (FHN) are frequently used for the study of sustainable consumption (Brand-Correa and Steinberger 2017; Büchs and Koch 2017; Gough 2017; Guillen-Royo 2016). The former is due to its amenability to quantification at the macro- and micro-levels and its focus on sufficiency and the latter for its sensitivity to local realities and its capacity to engage people in societal change (Guillen-Royo 2014, 2016). This is particularly important, as the scope of the transformation required in today's context of ecological and humanitarian crises demands proactive engagement in deliberative processes on the part of civil society, academics, policy makers and other relevant stakeholders (Pirgmaier and Steinberger 2019; Koch 2020).

This contribution examines Max-Neef's (1991) perspective on FHN as an analytical tool and as a

potential participatory framework for engaging people in co-designing sustainable consumption corridors. The concept, developed by Di Giulio and Fuchs (2014), proposes defining minimum consumption standards so every individual can realize his or her human needs, and maximum standards that ensure the resources necessary for everyone else—now and in the future—to experience a satisfactory life. It connects with the idea of sufficiency, stressing that consumption levels and not solely consumption patterns should be the focus of sustainability policy (Spangenberg and Lorek 2019). In the context of a FHN perspective, this implies shifting the analysis from an emphasis on consumer goods to an emphasis on *synergic satisfiers*: the constellation of values, attitudes, laws, organizational arrangements, technologies, infrastructures, environments, and cultural characteristics that support optimal needs fulfillment. Synergic satisfiers contribute to the satisfying of more than one need, while not harming others. As noted by several participatory studies (Guillen-Royo 2016; Jolibert, Paavola, and Rauschmayer 2014; Smith and Max-Neef 2011), this suggests that in communities or larger societies characterized by the presence of synergic satisfiers, negative environmental impacts can be greatly reduced.

The focus of the FHN perspective on interlinked synergic satisfiers resonates with approaches to sustainable consumption informed by work on socio-technical transitions or multi-level perspectives (Geels 2002; Geels and Schot 2007) and social practice theory (Reckwitz 2002; Shove 2003).¹ Reconfiguration of habits, infrastructures, taxation policies, technologies, and other elements is generally deemed necessary to transition toward more sustainable systems (Geels et al. 2015). Further, a FHN perspective assumes systemic relationships which imply that policy interventions to promote direct democracy or to improve work-life balance, often disregarded in most applied sustainability frameworks, might emerge as key interconnected factors in supporting, for example, the emergence of maximum and minimum consumption standards. Finally, the fact that a FHN approach relies on participatory workshops oriented toward the co-creation of endogenous (bottom-up) and exogenous (top-down) interventions adds a much-needed action-oriented perspective to the study of sustainable consumption (Fahy and Rau 2013).

The article starts by presenting Max-Neef's FHN framework and participatory methodology and its implications for the development of sustainable consumption corridors. Next, the FHN perspective is analyzed in relation to socio-technical transitions and practice-based theories—two often-applied

approaches to issues pertaining to sustainable consumption in social scientific studies. The section is organized around the paradigmatic characteristics of the theories, in terms of three specific dimensions: analytical-normative, individualist-systemic, and reformist-reconfiguration and revolutionary. The next section presents a Norwegian needs-based participatory study on the role of ICTs as empowering satisfiers and discusses the findings with respect to the implementation of maximum and minimum standards concerning ICT consumption. The final section offers several concluding remarks on the interconnection between sustainable consumption corridors and synergic need satisfiers.

Fundamental human needs and sustainable consumption: concepts and methodology

The Chilean economist Manfred Max-Neef (1991) introduced Human Scale Development (HSD) as an alternative to structuralism and neoliberalism, two development models that had failed in combatting poverty, inequality, and marginalization in Latin America. Linking up to alternative perspectives by contemporaries such as Amartya Sen, Robert Chambers, Fals Borda, Len Doyal, and Ian Gough, and together with a transdisciplinary team of academics and practitioners, Max-Neef proposed a people-centered approach to development that emphasized participation and empowerment. His HSD approach was articulated around three interdependent “pillars”: *self-reliance*, as opposed to socio-economic dependence; *balanced relationships* concerning organic articulations between, for example, people, nature, and technologies; and the satisfaction of *universal human needs*. These three components were integrated drawing on an ontological understanding of human needs as interdependent with the conservation and enhancement of the natural environment (Guillen-Royo 2016). Participatory processes were seen as providing a solid foundation on which to articulate human needs fulfillment, self-reliance, and a balance between humans and nature.

One of Max-Neef's most important conceptual contributions is the distinction between *needs* and *satisfiers* (Cruz et al. 2009). The former are limited, universal, and nonhierarchical and their fulfillment leads to wellbeing and the latter concern how needs are pursued in specific contexts and range from social practices to political models to personal values. The HSD approach does not view human needs solely in terms of prerequisites for wellbeing or deficiencies, but rather considers needs as a source of motivation and engagement, with the potential of becoming both a goal and a resource. Max-Neef

Table 1. Matrix of fundamental human needs.

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

identified FHNs as subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom. This admittedly open list was justified not on ethical, philosophical, or psychological grounds, but because of its usefulness for “policy and action.” Needs are expressed in cultural and socio-economic contexts through the existential categories of *being*, *having*, *doing*, and *interacting*. *Being* concerns individual or collective characteristics; *having* focuses on institutional arrangements, technologies, societal values, and habits; *doing* is associated with personal or collective actions; and *interacting* refers to the characteristics of physical and natural environments.

As shown in Table 1, how societies organize attending to fundamental human needs can be represented through a matrix classifying needs according to axiological (first column) and existential (top row) categories. Satisfiers are represented in each of the 36 cells in the grid, capturing the articulation of the personal, cultural, technological, political, economic, and environmental characteristics that define needs actualization in specific societies or groups. This reflects HSD’s systemic approach to development, characterized by simultaneities, tradeoffs, and non-linear relationships. Individuals’ own experiences of satisfiers and how they interconnect in society result in differing levels of needs actualization and associated environmental impacts.

Max-Neef proposed a classification of satisfiers in five categories: *synergic*, *singular*, *inhibiting*, *pseudo-satisfiers*, and *violators*. The first two concern satisfiers that contribute to the fulfillment of many (*synergic*) or one (*singular*) human need(s). The last three indicate negative satisfiers that over-satisfy certain needs (*inhibiting*), generate a false sense of satisfaction (*pseudo-satisfiers*), or eliminate the possibility of satisfying the need in question while reducing the possibility of meeting other needs (*violators*). This taxonomy is useful for analytical purposes, especially in participatory exercises aimed at evaluating specific satisfiers or tools, such as the research of Brand-Correa, Martin-Ortega, and Steinberger (2018) on energy services in Colombia or Mitchell’s (2001) workshops assessing living spaces in Argentina. However, research that associates certain satisfiers with specific needs might not

reflect the systemic perspective favored in the HSD approach. Singular or synergic satisfiers might not act as such unless they coexist in time and space with other locally-meaningful synergic satisfiers (Guillen-Royo 2016).

The HSD approach to human needs makes a conceptual distinction between economic goods and satisfiers which is relevant for the study of sustainable consumption corridors. As Max-Neef (1991, 25) explained, “while a satisfier is in an ultimate sense the way in which a need is expressed, goods are in a strict sense the means by which individuals will empower the satisfiers to meet their needs.” This implies that the factors that will support the fair and environmentally sustainable distribution of resources will be defined at the level of satisfiers and not at the level of goods or human needs. Figure 1 shows the conceptual distinction between needs, satisfiers, and economic goods and how the three levels are interconnected.²

As to methodology, Max-Neef proposed holding a series of participatory workshops to identify strategies or synergic satisfiers that contribute to optimal needs fulfillment. The original version involved three phases aimed at diagnosing problems and designing potential solutions (Guillen-Royo 2016; Max-Neef 1991). Most applications of the HSD approach have sought to explain the interlinked factors that lock societies or groups into pernicious situations. The matrix of needs and satisfiers has been used as a participatory tool to identify the *violators*, *inhibitors*, and *pseudo-satisfiers* that impede needs-fulfillment (Phase 1). Negative satisfiers discussed in needs-based workshops have frequently encompassed materialistic values, consumerism, environmental degradation, and pollution (Guillen-Royo 2010, 2016; Pelenc 2017). The framework has also been used for looking into the future, applying the matrix of satisfiers to co-design the *singular* and *synergic satisfiers* that define scenarios where needs are optimally met (Phase 2). This positive or utopian matrix has often included satisfiers that characterize sustainable consumption and production practices (Centgraf 2018; Guillen-Royo 2010; Guillen-Royo et al. 2017; Jolibert, Paavola, and Rauschmayer 2014).

An additional third exercise (Phase 3) aimed at identifying endogenous (stemming from the community) and exogenous (supported by outside agents) interventions and policy measures has sometimes been undertaken after the negative and utopian matrices have been filled up. By reflecting on the satisfiers in the two matrices, workshop participants have been able to propose specific measures or *synergic bridging satisfiers* to advance toward needs fulfillment and environmental sustainability,

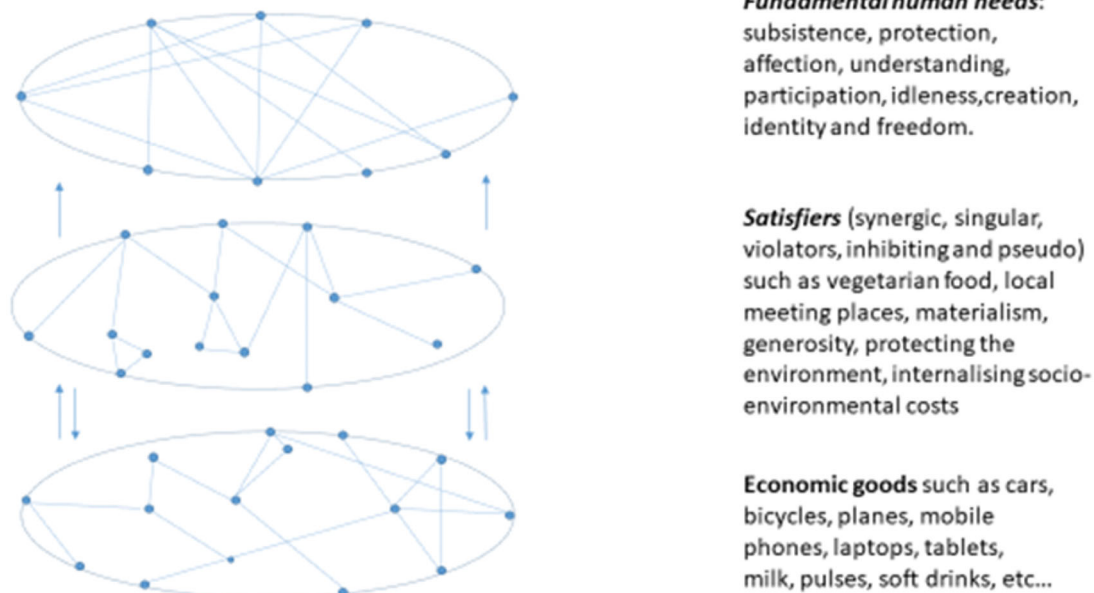


Figure 1. Needs-based conceptual framework for analysis of sustainable consumption. *Note.* This figure illustrates a *potential* constellation of economic goods, satisfiers, and human needs.

thus paving the way for a further implementation phase. As workshops in this third phase stimulate thinking in terms of endogenous and exogenous satisfiers, emerging interventions are always locally specific and often address individual (*Eigenwelt*), community (*Mitwelt*), or societal (*Umwelt*) levels (Max-Neef 1991). Furthermore, the proposed interventions have often comprised sets of satisfiers linked to minimum consumption standards (e.g., basic income schemes, universal primary education, open spaces for socialization and leisure) and maximum ones (limits to using chemical fertilizers or producing charcoal from timber, for example) (Guillen-Royo 2010, 2014, 2017; Smith and Max-Neef 2011).

A FHN approach to sustainable consumption: normative, systemic, and revolutionary?

This section discusses a FHN approach to sustainable consumption regarding three paradigmatic dimensions based on two theoretical frameworks widely used in sustainable consumption studies: socio-technical transitions or the multi-level perspective (MLP) and social practice approaches (Cohen, Brown, and Vergragt 2013; Greene 2018; Hielscher et al., 2013; Røpke 2009). First, following Sovacool and Hess (2017) the discussion considers the analytical versus the normative dimension. Second, the individualist versus systemic aspect is addressed, drawing on Spaargaren's (2011) claim that social-practice theories bridge the two paradigmatic dimensions with their emphasis on culture. Finally, based on Geels et al. (2015), this section offers reflections on the reformist, revolutionary or

reconfiguration character of the approaches. Arguably, it is the normative and revolutionary aspects of a FHN perspective on consumption that explain its compatibility for operationalizing and implementing sustainable consumption corridors.

In general, a socio-technical transitions approach takes as the unit of analysis systems such as those defining transportation, electric power, or agro-foods. The focus is on understanding the system dynamics that explain how new technologies or processes gain prominence, accounting for the interplay of niches (where new technologies or processes are tested and developed), regimes (dominated by established actors, regulations, norms, and knowledge), and landscapes (changing socio-economic, political, and biophysical pressures) (Cohen, Brown, and Vergragt 2013; Geels and Schot 2007). Social practice theories shift the unit of analysis from systems to practices such as cooking, showering, heating homes, and traveling (Røpke 2009; Shove 2003). They focus on routinized, everyday behavior, and view agency in consumption as being distributed between people, technologies, and socio-cultural contexts (Wilhite 2012). The complementarity of the two approaches has been noted at the conceptual (Geels et al., 2015; Spaargaren 2011) and empirical levels (Cohen, Brown, and Vergragt 2013; Greene 2018), highlighting their combined power for studying both the micro- and the macro-dynamics of consumption.

Analytical versus normative

Consumer choice, socio-technical transitions, and social practice theories are essentially analytical

frameworks, as they focus on describing the causal and/or systemic relationships that lead to (un)sustainable practices or behaviors (Cohen, Brown, and Vergragt 2013; Jackson, 2006; Kasser, 2002, 2017). They provide the tools for assessing the role played by factors such as macroeconomic conditions, culture, biophysical features, and technological characteristics in shaping consumption. For example, Røpke (2012) employs a socio-technical transition framework to study the reasons for a lack of environmental concern in the broadband transition, a relatively new and widespread information infrastructure. Kennedy, Krahn, and Krogman (2013) exemplify the analytical dimensions of social practice approaches in their description of the resources, norms, and infrastructures that explain sustainable transport practices in urban and suburban neighborhoods of Edmonton, Canada. Both studies show that theoretical frameworks designed to enable a detailed description of consumption practices, or their emergence, can be used in the context of environmental sustainability to inform policy in a particular direction. Thus, normativity is embedded not in the theoretical and conceptual framework, but in the research questions and policy recommendations that are derived from empirical studies.

A needs-based approach to consumption is fundamentally normative, as consumption practices and behaviors are evaluated in terms of their contribution to human needs (Doyal and Gough 1991). This is also the perspective favored by the sustainable consumption corridors concept, as the act of consumption is understood from its relation to human needs fulfillment while taking into account the scarcity of social and environmental resources (Di Giulio and Fuchs 2014). The latter concern, as discussed above, is addressed by a FHN perspective through the concept of synergic satisfiers as identified in participatory workshops. This is not because needs-based workshops explicitly discuss resource scarcity or the requirements of future generations, but because there is no empirical evidence to indicate that participants would consider a constellation of satisfiers characterized by pollution, waste accumulation, biodiversity loss, and so forth as synergic (Guillen-Royo 2016, 2017; Temesgen, Guillen-Royo, and Vangelsten 2018).

In addition to the normative dimension, a FHN perspective on sustainable consumption offers a categorization of the elements involved in sustainable consumption that enables descriptive analysis. Particularly useful is the distinction between needs, satisfiers, and economic goods, as represented in Figure 1. For example, socio-technical factors linked to the use of electric cars—from the network of charging stations to the regulations and

economic incentives associated with their purchase and use—may vary in their association with human needs and sustainability, depending on the types of satisfiers they enable. In socio-economic contexts characterized by pseudo-satisfiers such as consumerism, individualism, work-life centrality, and congestion, for instance, electric cars are likely to contribute less to needs satisfaction and sustainability than in contexts where intrinsic values, collective action, biocentrism, and thrift or simplicity are highly salient (Guillen-Royo 2016).

Individualist versus systemic

Spaargaren (2011) characterizes sustainable consumption theories based on their alignment with the individualist and systemic paradigms, highlighting the implications for the governance of environmental change. The individualist paradigm focuses on personal responsibility, which results in articulating environmental policy around information campaigns, “nudging” programs, and the promotion of green products and technologies. By comparison, the systemic paradigm emphasizes interdependence, accounting for a multiplicity of processes, levels, and dimensions that interact with each other to configure the articulation of laws, regulations, uses, practices, and environments that encourage sustainable consumption. Achieving sufficiency and negotiating sustainable consumption corridors is considered a multi-dimensional challenge that should account for the different levels of governance and the complex and interrelated realities that constitute consumption practices (Di Giulio and Fuchs 2014).

Studies drawing on socio-technical approaches exemplify the systemic paradigm as they consider how sustainable change is generated through interactions and network-building at the niche level and how existing unsustainable arrangements are challenged by external changes in the landscape. The latter can be exemplified by the Paris Agreement, which seeks to limit greenhouse-gas emissions and eliminate net carbon emissions by the second half of the twenty-first century. Social practice theories also resonate with the systemic paradigm, as they address complex interactions of different socio-economic, technological, and cultural elements. However, social practices emphasize everyday behaviors, where individuals, skills, knowledge, things, and their uses interact: broader systemic forces affecting consumption, such as international agreements, are not typically integrated in the analysis (Sovacool and Hess 2017).

A systemic understanding of the elements characterizing (un)sustainable consumption often emerges

in needs-based studies that focus on communities as a whole and not on particular policies or satisfiers. For example, Temesgen, Guillen-Royo, and Vangelsten (2018) analyzed the negative, singular, and synergic satisfiers identified in needs-based workshops by stakeholders from the Lofoten archipelago in Northern Norway. They found that in order to achieve sustainable transport practices it was necessary to consider several interlinked satisfiers. At the personal level, this involved being proactive, curious, and open. At the community level, it demanded maintaining and spreading the tradition of *dugnad* (voluntary communal work) and other forms of volunteering. And, at the governance level, investing in car-sharing apps, public transport, and bicycle lanes were found important in limiting the use of private cars and encouraging sustainable transport alternatives by increasing the availability of open spaces for socialization. Accounting for systemic relationships implies that only by supporting the emergence of as many synergic satisfiers as possible can a societal transformation toward sustainability and needs fulfillment take off. Targeting one synergic satisfier alone ignores the interconnections that the participatory needs-based perspective has helped to reveal and might reduce the success of sustainability policy.

Reformist versus revolutionary

Geels and colleagues (2015) classify approaches to sustainable consumption and production as *reformist*, *revolutionary*, or *reconfiguration*. The neoclassical economics perspective on consumer choice is associated with the *reformist* position and change toward environmental sustainability is regarded as an incremental process, building on the socio-technical, economic, and cultural status quo. Alternatively, socio-technical and practice theoretical approaches are associated with a *reconfiguration* position in which change is seen as occurring sequentially, through the interplay of the elements that define socio-technical systems and consumer practices alike. Importantly, alignment is necessary for change to happen. Regarding socio-technical transitions, this involves a range of pressures from landscape factors, internal fissures in the regime, and niche innovations that result in the uptake of new technologies and practices (Cohen, Brown, and Vergragt 2013). Concerning social practices, this implies the co-evolution and interaction of elements of practice such as resources, norms, and infrastructures (Kennedy et al., 2013).

In practice, a FHN perspective takes both a reconfiguration and a revolutionary position. It aligns with “new economics,” “degrowth,” and other

heterodox perspectives in economics, social policy, and international development advocating attention to the root causes of socio-economic inequality and environmental destruction. These are associated with the main features of capitalism: a focus on economic growth, competition, natural resource exploitation, and reproduction of exploitative relationships (Kallis 2018; Kasser et al., 2007; Wilhite 2017). Under revolutionary perspectives, environmental policy converges with economic, industrial, and social policy as the goal is systemic change where local bottom-up transformation is encouraged, environmental costs internalized, regulations are used to guide the phasing out of fossil-fuel technologies, and eco-social policies address the unequal burden of the transformation (Büchs and Koch 2017; Gough 2017; Seyfang 2009).

An example of the revolutionary and reconfiguration position of the FHN approach can be drawn from a participatory action research (PAR) project in the Peruvian highlands described by Guillen-Royo (2014, 2016). After partaking in needs-based workshops, members of a peasant community in the region chose to implement two *synergic bridging satisfiers*: organic gardening and a parents’ school. Neither of these propositions was new to the community, as nongovernmental organizations (NGOs) and governmental agencies had introduced similar schemes in the past. In the implementation phase, account had to be taken of the challenges posed by a culture of dependence (or *asistencialismo*) that had traditionally dominated relationships with outsiders and could threaten long-term collaboration with researchers.³ Despite the challenges, the two satisfiers were implemented across a ten-month period during which researchers and members of the community worked together. This process demanded both endogenous resources (community-organized cultivation of organic vegetables and provision of a meeting place, for example) and exogenous ones (seeds donated by the mayor and lectures and presentations by local experts).

Toward the end of this undertaking, members of the community were asked to assess the impact of the PAR project. Participants agreed that they were now using less chemical fertilizer and were eating more fresh vegetables. In the context of sustainable consumption corridors, the implementation of synergic bridging satisfiers might have resulted in the establishment of, for example, maximum consumption standards concerning fertilizers and minimum standards regarding vitamin, mineral, and fiber intake through organic vegetables. Although it is impossible to establish any long-term impact from a project of such limited duration, the implementation of synergic bridging satisfiers may have been

revolutionary. Entrenched habits of *asistencialismo* were challenged through greater critical engagement of the community with the provision of municipal services and the projects of national development agencies. The latter was particularly important as participants demanded that their soils be analyzed by chemists before engaging in a new project to plant native potato varieties promoted by the Peruvian state—indicating the participants' desire for a maximum level in the use of chemical fertilizers. The reconfiguration aspect was also present, as the reintroduction of organic farming was held to have influenced food habits in the community (Guillen-Royo 2014, 2016).

Participatory workshops involving ICTs in Oslo

Context and methodology

The study was conducted in May 2013 at the University of Oslo (UiO) as part of a seed-grant project exploring how participation in HSD workshops affected personal values and willingness to engage in socio-environmental activism. As the undertaking had a short duration and was meant to inform a larger initiative, the research team decided to recruit participants and to organize workshops in the institution hosting the project (University of Oslo, UiO). In total, we conducted six workshops (two rounds of three workshops), following the three phases of the methodology outlined above.⁴ Discussions in the first phase revolved around the negative satisfiers that participants considered to be obstructing needs fulfillment (negative matrix). In the second phase, workshop discussions focused on identifying singular and synergic satisfiers that supported the optimal actualization of human needs (utopian matrix). Finally, in the third phase participants debated on the endogenous and exogenous interventions (synergic bridging satisfiers) that could bridge the negative and the utopian matrices.

Participants were UiO staff members and students who were recruited based on a self-administered questionnaire distributed to a convenience sample of 260 individuals affiliated mainly with the faculties of humanities, social sciences, and natural sciences. We asked respondents willing to participate in the HSD workshops to provide their contact details in a form linked to the questionnaire through a code. In total, 26 persons working or studying at UiO participated in the six workshops (two rounds of three workshops). The average age of the participants was 32 years and 54% were women, 77% were students, and 54% were born in Norway.⁵ Most of the foreign-born participants were originally from Europe, although Asians and Latin Americans were

also represented. The least-attended workshop had four participants, and the best-attended had nine.⁶

The study followed the traditional structure of HSD workshops discussed extensively in Max-Neef (1991) and Guillen-Royo (2016). Participants were invited to join three-hour workshops around needs and satisfiers and were then asked for their consent to voice-record discussions. The chosen venue was a small classroom at UiO's Center for Development and Environment (SUM) where chairs were placed in a U-shape. An empty matrix in English, like the one featured in Table 1, was hanging on the wall. All workshops had one researcher in the role of facilitator and an assistant, often a PhD student, taking notes. At the beginning of the two initial workshops, the facilitator introduced the nine FHNs and gave examples of ways of being, having, doing, and interacting that could detract from or contribute to the satisfaction of human needs in their society. Participants were given the opportunity to critically assess the FHN framework. After reaching agreement on its suitability as a tool, the facilitator encouraged discussion about the satisfiers.⁷ There was variation in the level of conflicting views on satisfiers across groups,⁸ but in general, it was possible to achieve consensus on the one or two satisfiers that would be more impeding or synergistic in each of the 36 cells. In the third phase of the study, participants were given a copy of the negative and utopian matrices and a discussion was organized to identify bottom-up or top-down interventions that could help to bridge the two matrices.

As this exploration was intended to illustrate the suitability of a FHN approach for the study of sustainable consumption, and particularly the possibility of identifying maximum and minimum consumption standards through needs-based workshops, we jointly analyzed the data from the two groups. Accordingly, analysis of the workshop data (notes, recordings, and transcripts) did not emphasize the differences between the satisfiers that each of the groups had identified, but instead focused on the commonalities. The *violators* and *pseudo-* and *inhibiting* satisfiers (Phase 1), *singular* and *synergic satisfiers* (Phase 2) and the *synergic bridging satisfiers* (Phase 3) presented in the next section synthesize the discussion in the two groups. The pervasiveness of information and communications technologies (ICTs) is providing entertainment, communication, information, and shopping possibilities, among other activities, resulted in participants bringing up consumer goods linked to ICTs in the three phases of the study. This justified using ICTs to illustrate the many dimensions of the FHN framework and the way maximum and minimum consumption standards can emerge in needs-based workshops.

Main findings

Tables A1 and A2 in the Appendix present the *consolidated synthesis matrices*, featuring satisfiers common to the two participant groups. As Table A1 shows, obstacles to meeting needs were linked to *negative satisfiers* such as self-centeredness and intolerance, social control, market-based socio-economic structures, individualism and exclusion, deficiencies in public transport, and environmental degradation.⁹ Participants discussed the use of ICTs, including television, in connection with various negative satisfiers particularly detrimental to the needs for protection, affection, understanding, and freedom. Concerning protection, overexposure to social media, and the risks of being harassed and threatened through the Internet, generated feelings of vulnerability further exacerbated by the fact that people were not accustomed to or did not dare to report abusive practices to the corresponding authorities. Two additional negative satisfiers, intolerance and prejudice, when aligned with extensive use of social media, were seen as particularly detrimental to the need for freedom, as participants said they felt forced to censor their own opinions and behaviors online.

The need for affection was challenged by the fact that ICTs were seen as enabling people to “shut themselves in their own world,” which participants held fostered isolation and disconnection from others as well as from the natural environment. In a society characterized by such interrelated negative satisfiers as “being distant,” “an impersonal culture,” “living in one’s own world,” and prioritizing efficiency over generosity and care, behaviors like showing affection for others and love of the natural environment were likely to be constrained. Finally, participants associated the spread of ICTs with negative satisfiers such as the progressive depersonalization of services linked to digitalization. They contended that this situation made it difficult for many groups, particularly the elderly and immigrants, to grasp how society functioned and constrained the satisfaction of their need for understanding. Although the workshops did not focus on limits or minimum consumption standards, participants discussed current levels of private and public use of ICTs as interlinked with a network of violators and pseudo- and inhibiting satisfiers.

As shown in Table A2, participants felt that for needs to be optimally met there should be singular and synergic satisfiers such as open-minded citizens and groups, flexibly organized institutions and public services, balance between nature and the built environment, and assorted meeting points and spaces for participatory activities. They asserted that

in a society where singular and synergic satisfiers were prevalent, ICT use should be restricted. For example, one suggestion involved making programs to block hate speech from being readily accessible so that children and adolescents could be protected from online bullying and harassment. Restricting exposure to ICTs in the home was also seen as necessary, due to what participants saw as the inherently addictive component of mobile phones, tablets, and other digital devices. To enable satisfiers such as shorter working days, sports and leisure-time infrastructures, and access to outdoor/nature experiences to function synergically in meeting needs, the use of ICTs at home should be limited. Further, educational institutions were expected to support vulnerable groups in countering and reducing exposure to misleading information, in turn promoting fulfillment of the need for understanding and freedom.

Despite urging caution when using ICTs, participants in the workshops felt that they could enable satisfiers to meet subsistence, understanding, idleness, and identity needs. For example, they suggested that municipalities should develop an updated and easy-to-use Internet platform with information and contact details of collaborative initiatives to promote participation and facilitate social integration. Thus, in the context of the utopian matrix, ICT use emerged as enabling singular and synergic satisfiers, as long as its use was “limited” through, for example, social media education at school and the development of software to block hate speech, and was expanded at the local level through online platforms universalizing access to municipal services and local initiatives.

As this study was exploratory and did not focus on specific topics, most satisfiers shown in Table A2 do not explicitly represent consumption practices or low-impact lifestyles. However, workshop discussions showed that cooperation, caring, combatting consumerism, generalizing popular participation, and bringing the natural world back into urban areas were satisfiers explicitly linked to sustainable consumption practices. The following excerpts illustrate this point:

Institutionally, we should stop externalizing environmental destruction. Make things cost what they actually should cost... We cannot care about the environment if we don't care about someone who feels unwell and vomits on the pavement.

We have to understand and be aware of our environment and how it works in order to care for it properly. Urban gardening is a good thing. It reconnects you with how food is produced. That might make you aware of other issues. Wilderness nearby lets you experience for yourself how nature works... We should promote ways of structuring

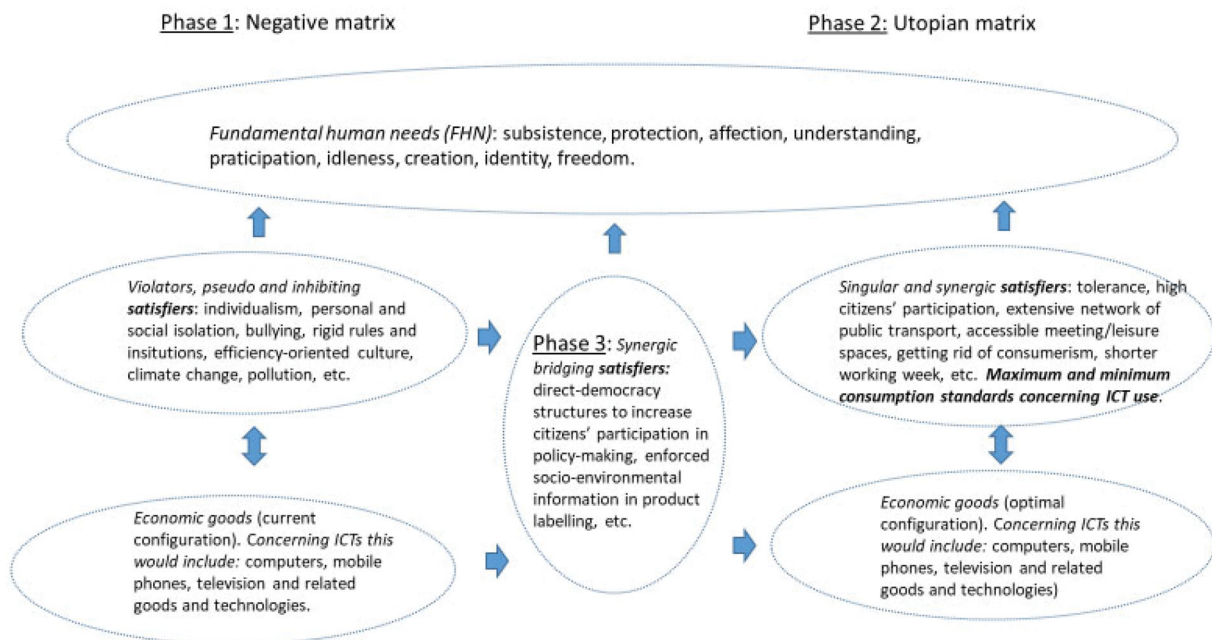


Figure 2. An FHN perspective on sustainable consumption and ICTs. *Note.* This illustration is a partial representation of the satisfiers and economic goods discussed in the workshops. Only a selection of the relevant satisfiers for the study of sustainable consumption and ICT is included here.

the city with the emphasis on creating local communities/spaces where people can exchange information and interact.

It is hard to get information about these things. How can we spread information about places to buy local food, for example? I'd definitely like to get involved in something like that, but have no idea where to find information. Community – or municipally – operated webpages that presented such initiatives would be ideal.

When the discussion turned to *synergic bridging satisfiers*, those endogenous and exogenous interventions that would enable a transition from the negative to the utopian matrix, ICTs were again considered as enablers. For example, when satisfiers such as “boosting citizen involvement in policy-making” were debated, participants mentioned Internet forums, online platforms to follow-up implementation of political programs, infrastructures to organize online polls and referendums as supporting mechanisms. In discussions concerning “greater transparency about the socio-environmental impacts of consumer goods,” developing a dedicated mobile phone application to scan product labels was considered an empowering factor. The product information that participants were interested in obtaining from labels concerned the type and amount of energy used, the carbon-dioxide (CO₂) emissions from production and transport, and the labor conditions of workers throughout the supply chain. Participants also noted that explicit support to the “sharing economy” on the part of local institutions (exogenous) could be facilitated by community-driven Internet platforms presenting local

sharing initiatives or opportunities to swap or dispose of unwanted goods (endogenous).

Discussion

This section draws on the case described above to illustrate how a FHN perspective based on participatory workshops can contribute to the analysis and implementation of sustainable consumption corridors. The discussion is arranged around the three paradigmatic dimensions introduced above.

Figure 2 shows the findings from the participatory exercise using FHN as an analytical tool. Contrary to common understandings of mobile phones, televisions, tablets, laptops, broadband, or Internet as “necessities” or needs (Røpke 2003), ICT-related products are considered here as economic goods that support the role of satisfiers. As Figure 2 illustrates, the current configuration of these technologies seems both to enable satisfiers in the negative matrix and to support the emergence and consolidation of *synergic bridging satisfiers*. Following workshop discussions, the singular and synergic satisfiers identified in Phase 2 of the study were also systemically linked to the consumption of ICTs. However, the characteristics of ICTs, and how they would interact with satisfiers in a situation of optimal needs fulfillment, corresponded to an alternative configuration characterized by reduced use of ICTs. This assemblage would imply minimal consumption of ICTs as access to municipal services and private local initiatives become universalized through online platforms and maximum

consumption standards concerning the protection of users from online harassment and excessive Internet use at home.

The *systemic* perspective of the HSD framework emerged when participants discussed singular and synergic satisfiers in Phase 2 of the study addressing the utopian matrix. Satisfiers such as high levels of social, economic, and political participation and engagement, and the availability of noncommercial places for socializing and leisure were considered by participants as contributing to optimal needs fulfillment (see also Sahakian and Anantharaman 2020). These satisfiers were systemically linked to balancing urbanization and wilderness in cities, re-localizing food consumption, moving toward shorter working weeks, and combatting consumerism—satisfiers traditionally associated with sustainable consumption practices (Coote and Franklin 2013; Kasser 2017; Seyfang 2009). Participants regarded this constellation of satisfiers as having limited use for television, tablets, computers, mobile phones, and Internet and implied the emergence of a maximum consumption standard. Voluntary restraint in ICT use has also been highlighted by studies addressing these technologies from a social practice and socio-technical transitions perspective. For example, participants in Davies' (2014) practice-oriented study of sustainable food-consumption scenarios expressed reservations about relying on ICT-driven solutions, as these could lead to de-skilling, superficial transformations, and diminishment of individual responsibility.

Any participatory exercise aimed at the analysis, design, and implementation of singular or synergic satisfiers might imply *revolutionary* measures. This is because the constellation of satisfiers emerging from such workshops often indicates a reconfiguration of the system, away from satisfiers that support traditional political and economic goals such as capital accumulation, consumerism, and competition (Guillen-Royo 2016; Kasser et al. 2007; Smith and Max-Neef 2011). In addition to the revolutionary implications, the participatory methodology used for identifying *synergic bridging satisfiers* or strategies yields a *reconfiguration* dimension to the FHN perspective. Among the synergic bridging satisfiers suggested in Phase 3 of the study, only two of them have been addressed here: direct-democracy structures to increase citizens' engagement in policy making and regulations to provide socio-environmental information in product labeling. These satisfiers were chosen because participants associated them with the use of ICTs, which was the category of goods and technologies used in this example.

But how to implement the two synergic bridging satisfiers while also supporting the emergence of the

maximum and minimum standards identified in the utopian matrix? Røpke's (2012) analysis of broadband from the vantage point of socio-technical transitions offers some assistance. She suggested that minimum and maximum consumption standards concerning ICTs called for regulatory policies to slow down infrastructural development and to encourage changes in sectoral interactions. The latter implied sector-specific low-carbon policies such as those that have enabled the emergence of systems for car-sharing and the development of smart grids. The two synergic bridging satisfiers—increased citizen involvement in policy making, and socio-environmental product labeling—require widespread access to the Internet. However—as Røpke notes concerning healthcare applications—Internet forums, online platforms to follow-up local policy, and use of QR codes or similar in-product labeling might not necessarily require higher-speed connections. In addition, slowing down the increase in network speed could also encourage reduced use of ICTs at home, as relatively “slower” access could limit the appeal of broadband-based entertainment. Thus, efforts at the governance level (exogenous) toward sector-specific low-carbon policies could enable both widespread access of Internet in society (minimum consumption standard) and reduced use at home for non-work related purposes (maximum consumption standard).¹⁰

Finally, it is important to acknowledge several shortcomings of using a FHN approach for the study of sustainable consumption corridors. Needs-based workshops might not automatically lead to detailed understanding of the practices in which people engage. This limits the possibility of analyzing direct and indirect relationships between resources, norms, and infrastructures as is typically done in practice-oriented studies. The roles of innovation, niches, and entrepreneurs are also not usually considered because communities—not industries—are the focus of the FHN framework. Thus, addressing specific policy options, such as a new regulation on broadband-speed expansion, might require more targeted workshops such as those developed by Brand-Correa, Martin-Ortega, and Steinberger (2018) on energy services or the events organized by Centgraf (2018) for renewable energy cooperatives. Moreover, the dynamics of needs-based workshops present a challenge when the goal is policy formation. In defining sustainable consumption corridors, a dual strategy that includes the codified knowledge of experts and the experiential knowledge of ordinary people, as suggested by Gough (2017), often implies managing opposing values and goals. This might pose a problem with regard to reaching consensus on satisfiers (Guillen-Royo 2016). In such

cases, Jolibert, Paavola, and Rauschmayer (2014) recommend adapting the HSD methodology with an initial phase in which stakeholders reflect on sustainable satisfiers individually and a plenary discussion where they reformulate satisfiers such that they converge across a wider range of stakeholders.

Conclusion

This article has discussed the Fundamental Human Needs approach as a conceptual and methodological framework for the study of sustainable consumption corridors focusing on its analytical, normative, systemic, reconfiguration, and revolutionary dimensions. The case of a participatory study at the University of Oslo in 2013 has shown how minimum and maximum consumption standards emerge as synergic satisfiers and are discussed in needs-based workshops. ICTs as a cluster of products might help to fulfill human needs, depending on their interplay with the satisfiers operating in the given society. When such technologies, similar to other economic goods, are used in conjunction with the negative satisfiers that characterize unsustainable consumption practices, their overall contribution to needs fulfillment appears quite limited. By contrast, when ICTs enable the emergence of singular, synergic, or synergic bridging satisfiers, their impact is enhanced, and consideration is given to maximum and minimum consumption standards.

The analysis of workshop data indicates that a society characterized by such synergic satisfiers as re-introducing wilderness in cities, re-localizing food consumption, moving toward shorter working weeks, or adopting simpler lifestyles might be supported by the reduced and sector-specific use of ICTs. On one hand, this may seem unrealistic. In Norway, for example, most people use the Internet on a daily or almost daily basis (91% in 2018) and time spent online keeps increasing (nearly three hours per day on average in 2018).¹¹ On the other hand, with the implementation of shorter working weeks and simpler lifestyles based on sharing, reusing, and repairing the total amount of time one might want to spend on the Internet, for example, is likely to drop. This might boost popular support for policies which limit the expansion of broadband speed, for example, favoring the implementation of maximum consumption standards. Other synergic satisfiers, such as inclusiveness at individual and group levels and greater opportunities to participate in local policy making might encourage the spread of ICT services to disadvantaged or otherwise vulnerable groups, in turn supporting the emergence of minimum consumption standards.

Notes

1. In this article, the multi-level perspective and socio-technical transitions are used interchangeably.
2. Following Max-Neef (1991, 28) economic goods are “objects related to particular historical moments” and they encompass artifacts and technologies.
3. *Asistencialismo* defines a culture of dependence spread in development contexts where gifts and donations are customarily provided in exchange for political support or to encourage participation in development projects. Without such offerings, interest in collaborating with external actors tends to diminish.
4. Each of the two participant groups engaged in a set of three workshops corresponding to the negative matrix (Phase 1), the utopian matrix (Phase 2), and the co-design of synergic bridging satisfiers (Phase 3).
5. Most students were enrolled at the master and PhD levels. This resulted in a relatively high average age of participants.
6. Ten out of 26 participants attended two workshops (either first and third or second and third). To avoid a situation in which the negative and utopian matrices represented opposites because the same people participated in both, no one in the first workshop was invited to join the second.
7. Post-it notes with the satisfiers identified by participants were placed in the corresponding cells of the matrix until the 36 cells were filled.
8. Additional information about the differences between the two participating groups and the challenges in achieving consensus are discussed in Guillen-Royo (2016, Chapter 8).
9. The concept of “negative satisfiers” is used here to encompass violators and pseudo- and inhibiting satisfiers.
10. According to the International Energy Agency and other relevant bodies, the recent COVID-19 crisis has resulted in a decline in CO₂ emissions partly due to falling transport activity. At the same time, many workers in locked down regions have required high-speed Internet connection to be able to work from home. More research is needed at this stage to assess the wellbeing and environmental impacts of increased telework.
11. See <https://www.ssb.no/teknologi-og-innovasjon/statistikker/ikthus> and https://www.ssb.no/en/kultur-og-fritid/artikler-og-publikasjoner/_attachment/384577.
12. Here “authority” follows Max-Neef’s distinction between power and authority “understood as the capacity of influence exercised by the person (or group) to whom legitimacy is granted because of recognized capacities and qualities” (Max-Neef 1991, 94).

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References

- Brand-Correa, L., J. Martin-Ortega, and J. Steinberger. 2018. "Human Scale Energy Services: Untangling a 'Golden Thread.'" *Energy Research & Social Science* 38: 178–187. doi:10.1016/j.erss.2018.01.008.
- Brand-Correa, L., and J. Steinberger. 2017. "A Framework for Decoupling Human Need Satisfaction from Energy Use." *Ecological Economics* 141: 43–52. doi:10.1016/j.ecolecon.2017.05.019.
- Brown, H., P. Vergragt, and M. Cohen. 2013. "Societal Innovation in a Constrained World: theoretical and Empirical Perspectives." In *Innovations in Sustainable Consumption: New Economics, Socio-Technical Transitions, and Social Practices*, edited by M. Cohen, H. Brown and P. Vergragt, 1–27. Cheltenham: Edward Elgar.
- Büchs, M., and M. Koch. 2017. *Postgrowth and Wellbeing*. Basingstoke: Palgrave Macmillan.
- Centgraf, S. 2018. "Supporting Civic Engagement in German Energy Cooperatives: Transdisciplinary Research Based on the Reflection of Individual Needs." *Energy Research & Social Science* 44: 112–121. doi:10.1016/j.erss.2018.05.003.
- Cohen, M., H. Brown, and P. Vergragt, eds. 2013. *Innovations in Sustainable Consumption: New Economics, Socio-Technical Transitions, and Social Practices*. Cheltenham: Edward Elgar.
- Coote, A., and J. Franklin. 2013. *Time on Our Side: Why We All Need a Shorter Working Week*. London: New Economics Foundation.
- Cruz, I., A. Stahel, and M. Max-Neef. 2009. "Towards a Systemic Development Approach: Building on the Human-Scale Development Paradigm." *Ecological Economics* 68 (7): 2021–2030. doi:10.1016/j.ecolecon.2009.02.004.
- Davies, A. 2014. "Co-creating Sustainable Eating Futures: Technology, ICT and Citizen–Consumer Ambivalence." *Futures* 62: 181–193. doi:10.1016/j.futures.2014.04.006.
- Davies, A., R. Doyle, and J. Pape. 2012. "Future Visioning for Sustainable Household Practices: Spaces for Sustainability Learning?" *Area* 44 (1): 54–60. doi:10.1111/j.1475-4762.2011.01054.x.
- Di Giulio, A., and D. Fuchs. 2014. "Sustainable Consumption Corridors: Concept, Objections, and Responses." *GAIA* 23 (3): 184–192. doi:10.14512/gaia.23.S1.6.
- Doyal, L., and I. Gough. 1991. *A Theory of Human Need*. Basingstoke: Macmillan.
- Fahy, F., and H. Rau. 2013. *Methods of Sustainability Research in the Social Sciences*. London: Sage.
- Frey, B. 2008. *Happiness: A Revolution in Economics*. Cambridge, MA: MIT Press.
- Gasper, D. 2007. "Conceptualising Human Needs and Wellbeing." In *Wellbeing in Developing Countries: From Theory to Research*, edited by I. Gough and A. McGregor, 47–70. Cambridge: Cambridge University Press.
- Geels, F. 2002. "Technological Transitions as Evolutionary Reconfiguration Processes: A Multi-Level Perspective and a Case-Study." *Research Policy* 31 (8–9): 1257–1274. doi:10.1016/S0048-7333(02)00062-8.
- Geels, F., A. McMeekin, J. Mylan, and D. Southerton. 2015. "A Critical Appraisal of Sustainable Consumption and Production Research: The Reformist, Revolutionary and Reconfiguration Positions." *Global Environmental Change* 34: 1–12. doi:10.1016/j.gloenvcha.2015.04.013.
- Geels, F., and J. Schot. 2007. "Typology of Sociotechnical Transition Pathways." *Research Policy* 36 (3): 399–417. doi:10.1016/j.respol.2007.01.003.
- Gough, I. 2017. *Heat, Greed and Human Need*. Cheltenham: Edward Elgar.
- Greene, M. 2018. "Socio-Technical Transitions and Dynamics in Everyday Consumption Practice." *Global Environmental Change* 52: 1–9. doi:10.1016/j.gloenvcha.2018.05.007.
- Grunfelder, J., L. Rispling, and G. Norlén, eds. 2018. *State of the Nordic Region 2016*. Stockholm: Nordregio.
- Guillen-Royo, M. 2014. "Human Needs and the Environment Reconciled: Participatory Action-Research for Sustainable Development in Peru." In *Sustainable Consumption and the Good Life*, edited by K. Lykke Syse and M. Mueller, 165–182. London: Routledge.
- Guillen-Royo, M. 2008. "Basic Needs and Expenditure on Health Care in a Shanty Town of Lima." *Research in Economic Anthropology* 26: 173–198.
- Guillen-Royo, M. 2010. "Realising the 'Wellbeing Dividend': An Exploratory Study Using the Human Scale Development Approach." *Ecological Economics* 70 (2): 384–393. doi:10.1016/j.ecolecon.2010.09.010.
- Guillen-Royo, M. 2016. *Sustainability and Wellbeing: Human-Scale Development in Practice*. London: Routledge.
- Guillen-Royo, M., J. Guardiola, and F. García-Quero. 2017. "Sustainable Development in Times of Economic Crisis: A Needs-Based Illustration from Granada (Spain)." *Journal of Cleaner Production* 150: 267–276. doi:10.1016/j.jclepro.2017.03.008.
- Hielscher, S., G. Seyfang, and A. Smith. 2013. "Grassroots Innovations for Sustainable Energy: exploring Niche-Development Processes Among Community-Energy Initiatives." In *Innovations in Sustainable Consumption: New Economics, Socio-Technical Transitions, and Social Practices*, edited by M. Cohen, H. Brown, and P. Vergragt, 133–158. Cheltenham: Edward Elgar.
- Jackson, T., ed. 2006. *Earthscan Reader in Sustainable Consumption*. London: Earthscan.
- Jolibert, C., J. Paavola, and F. Rauschmayer. 2014. "Addressing Needs in the Search for Sustainable Development: A Proposal for Needs-Based Scenario Building." *Environmental Values* 23 (1): 29–50. doi:10.3197/096327114X13851122269007.
- Kallis, G. 2018. *Degrowth*. Newcastle: Agenda.
- Kasser, T. 2002. *The High Price of Materialism*. Cambridge, MA: MIT Press.
- Kasser, T. 2017. "Living Both Well and Sustainably: A Review of the Literature, with Some Reflections on Future Research, Interventions and Policy." *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 375 (2095): 20160369. doi:10.1098/rsta.2016.0369.
- Kasser, T., S. Cohn, A. Kanner, and R. Ryan. 2007. "Some Costs of American Corporate Capitalism: A Psychological Exploration of Value and Goal Conflicts." *Psychological Inquiry* 18 (1): 1–22. doi:10.1080/10478400701386579.

- Kennedy, E., H. Krahn, and N. Krogman. 2013. "Taking Social Practice Theories on the Road: A Mixed-Methods Case Study of Sustainable Transportation." In *Innovations in Sustainable Consumption: New Economics, Socio-Technical Transitions, and Social Practices*, edited by M. Cohen, H. Brown, and P. Vergragt, 252–276. Cheltenham: Edward Elgar.
- Koch, M. 2020. "Structure, Action and Change: A Bourdieusian Perspective on the Preconditions for a Degrowth Transition." *Sustainability: Science, Practice and Policy* 16 (1): 4–14. doi:10.1080/15487733.2020.1754693.
- Max-Neef, M. 1991. *Human-Scale Development: Conception, Application and Further Reflection*. London: Apex.
- Mitchell, J. 2001. "Propuesta metodológica en el diseño de un asentamiento humano en una zona rural del centro-oeste de la República Argentina (Methodological Proposal in the Design of a Human Settlement in a Rural Area of the Central-West of Argentina)." In *La Casa de América (The House of America)*, edited by A. Benito Narvaez, 209–239. Nuevo Leon: Universidad Autónoma de Nuevo Leon.
- Pelenc, J. 2017. "Combining Capabilities and Fundamental Human Needs: A Case Study with Vulnerable Teenagers in France." *Social Indicators Research* 133 (3): 879–906. doi:10.1007/s11205-016-1399-x.
- Pirgmaier, E., and J. Steinberger. 2019. "Roots, Riots, and Radical Change: A Road Less Travelled for Ecological Economics." *Sustainability* 11 (7): 2001. doi:10.3390/su11072001.
- Reckwitz, A. 2002. "Toward a Theory of Social Practices: A Development in Culturalist Theorizing." *European Journal of Social Theory* 5 (2): 243–263. doi:10.1177/1368431022225432.
- Röpke, I. 2003. "Consumption Dynamics and Technological Change: Exemplified by the Mobile Phone and Related Technologies." *Ecological Economics* 45 (2): 171–188. doi:10.1016/S0921-8009(02)00281-1.
- Röpke, I. 2009. "Theories of Practice: New Inspiration for Ecological Economic Studies." *Ecological Economics* 68 (10): 2490–2497. doi:10.1016/j.ecolecon.2009.05.015.
- Röpke, I. 2012. "The Unsustainable Directionality of Innovation: The Example of the Broadband Transition." *Research Policy* 41 (9): 1631–1642. doi:10.1016/j.respol.2012.04.002.
- Sahakian, M., and M. Anantharaman. 2020. "What Space for Public Parks in Sustainable Consumption Corridors? Conceptual Reflections on Need Satisfaction Through Social Practices." *Sustainability: Science, Practice, and Policy* 16(1).
- Seyfang, G. 2009. *The New Economics of Sustainable Consumption: Seeds of Change*. New York: Palgrave.
- Shove, E. 2003. *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. Oxford: Berg.
- Smith, B., and M. Max-Neef. 2011. *Economics Unmasked: From Power and Greed to Compassion and the Common Good*. Cambridge: Green Books.
- Sovacool, B., and D. Hess. 2017. "Ordering Theories: Typologies and Conceptual Frameworks for Sociotechnical Change." *Social Studies of Science* 47 (5): 703–750. doi:10.1177/0306312717709363.
- Spaargaren, G. 2011. "Theories of Practices: Agency, Technology, and Culture: Exploring the Relevance of Practice Theories for the Governance of Sustainable Consumption Practices in the New World-Order." *Global Environmental Change* 21 (3): 813–822. doi:10.1016/j.gloenvcha.2011.03.010.
- Spangenberg, J., and S. Lorek. 2019. "Sufficiency and Consumer Behavior: From Theory to Policy." *Energy Policy* 129: 1070–1079. doi:10.1016/j.enpol.2019.03.013.
- Temesgen, A., M. Guillen-Royo, and B. Vangelsten. 2018. "Citizen Participation for Sustainability and Quality of Life in Vågan Municipality (Norway)." Paper presented at the 54th Congress of the International Society of City and Regional Planners, Bodø, Norway, October 1–5.
- Wilhite, H. 2012. "The Energy Dilemma." In *Development and the Environment: Practices, Theories, Policies*, edited by K. Bjørkdahl and K. Nielsen, 81–97. Oslo: Akademika.
- Wilhite, H. 2017. *The Political Economy of Low Carbon Transformation*. London: Routledge.
- World Commission on Environment and Development (WCED). 1987. *Our Common Future*. Oxford: Oxford University Press.

Appendix

Table A1. Negative synthesis matrix (University of Oslo students/staff).

	Being	Having	Doing	Interacting
Subsistence	Self-centered	Market-oriented society Discrimination	Excluding	Pollution, climate change
Protection	Chauvinistic Excluding	Social isolation Overexposure	Not reporting abuse Equating immigrants with threats	Unsafe bicycle lanes Climate change and environmental damage
Affection	Distant	Impersonal and heterosexual culture	Living in one's own world (with help of ICTs)	Efficiency-oriented society
Understanding	"Square" mind-set	Institutional and personal distance	Disregarding difference	Impersonal relationships at all levels (school included)
Participation	Inflexible and disinterested	Rigid rules and institutions (working-time)	Not caring	Work pressure and lack of follow-up when participating
Idleness	Easily influenced	Work ethic	Equating idleness with laziness	Social pressure to be active Overcrowded public spaces
Creation	Conservative	Social control	Demanding availability at all times Not daring to break norms	Market economy Lack of space for creativity
Identity	Nationalistic	Cultural and market- based norms	Pressuring people to fit in	Global warming Overwhelming reach of advertising
Freedom	Intolerant	Strong social norms and prejudices	Excluding Trying to conform	Deficient public transport Urban–nature divide

Table A2. Utopian synthesis matrix (University of Oslo students/staff).

	Being	Having	Doing	Interacting
Subsistence	Respectful	Free universal healthcare	Opening up and communicating	Balance wildness–urbanization
Protection	Courageous and supportive	Institutional and personal respect for authority ¹² (teachers, police, etc.)	Integrating and engaging	Less urban agglomeration
Affection	Tolerant	Multi-cultural and emotional education	Creating habits of cooperation	Enough time and open spaces to meet with others
Understanding	Open-minded	Media literacy and limited use of ICTs	Including left-out groups like older people	Easy access to indoor and outdoor places/nature for interaction
Participation	Inclusive and pro-active	Local council supporting participation across actors	Enabling participation regardless of background	Availability of spaces for interaction
Idleness	Open-minded	Shorter working week	Observing	Public open spaces for play and exercise
Creation	Open-minded	Opportunities for transdisciplinary cooperation; flexibility to change rules	Valuing creativity even if it does not sell	Informal meeting spaces at the workplace
Identity	Respectful and open-minded	Global identities	Caring and integrating	Diverse and inclusive city planning
Freedom	Tolerant and open-minded	Socio-economic equality; no pressure to conform	Getting rid of consumerism; learning others' values and norms	Widely available public transport