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Fostering absolute reductions in resource use: the potential role and feasibility of practice-oriented design☆

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ABSTRACT

This article explores the potential role of design in fostering absolute reductions in everyday consumption. It links ambitions to achieve absolute reductions to concepts from social theories of practice and design. Practice theory directs attention towards expectation levels, opening up questions about sufficiency. Design activity is often pointed out as a potential key instrument for creating change in sustainable directions, and the social practice as a relevant starting point for such work. Little attention is however paid to what may help and hinder practice-oriented initiatives. Consequently, this article asks what the role of design may be in fostering actual reductions in resource use when social practices continuously are in flux, and, what the space for action is, given societal arrangements rooted in ideas about boundless consumption.

This is done on a theoretical and empirical basis, by drawing on practice theory and system innovation theory, and a case study on television entertainment practices and work by related actors. This is relevant given the increasing contribution of electronics to the environmental impact of households. The analysis shows how standardisation and predominantly technical experience and value definitions have consequences for resulting resource use levels and the feasibility of creating change. The lack of policy attention to the relationship between resource use and practical value may prevent actors from making use of the theoretical space for practice-oriented action. The article concludes by presenting recommendations for policy and practice on how to foster further exploration of it.

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1. Introduction

Human activities already exceed the boundaries of the planet (Rockström et al., 2009). Actual or absolute reductions in resource usage are necessary preconditions for a sustainable development. The policy instruments traditionally deployed have proven incapable of fostering change at the rate and scale needed. They have largely relied on technologically and individually oriented strategies (e.g. Shove, 2010). In response to that, a new wave of research has formed. Drawing on practice theory, this branch takes the social practice (Schatzki, 2001; Reckwitz, 2002, Warde, 2005) as the unit of analysis in studies of consumption (e.g. Shove, 2003, 2010, 2012; Spaargaren, 2003, 2011). A practice is a routinized and ordinary everyday life activity such as staying warm, laundering or cooking. It is an activity in which many people engage, according to shared ideas about what is acceptable and desirable: How to stay warm and comfortable at home, wash towels, or prepare a decent dinner meal. This is environmentally relevant because as people try to achieve what they see as normal and appropriate, resources are consumed. Consumption is seen as happening 'within and for the sake of practices' (Warde, 2005, p. 145). Compared to approaches centred on technology or individuals, a practice perspective shifts attention towards what expectations and standards are, and how they are reproduced and change. This opens up for questioning what is taken for granted, and for targeting the levels of consumption by introducing sufficiency goals. It makes the social practice a relevant unit of analysis for understanding consumption, and a relevant unit of intervention for fostering absolute reductions in consumption levels.

Design and innovation activity is often pointed out as a potential key to the creation of change in sustainable directions (e.g. UNEP,

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2009). It is concerned with the interplay between humans, products, services, systems and the built environment, engages in future-oriented work and does not shy away from addressing open and complex problems (Dorst, 2011). While acknowledging that the process of framing or 'creation of a (novel) standpoint from which a problematic situation can be tackled' matters to the ideas that are generated (Dorst, 2011, p. 525), design literature is equipped with relatively limited understandings of consumption and everyday life (Ingram et al., 2007). To exemplify, ecodesign or design for sustainability (DfS), is a profit-driven strategy in which efforts typically are geared at fulfilling consumer 'needs', catering to demand or providing benefits while lowering impacts in the supply chain and throughout the product lifecycle (Luttropp and Lagerstedt, 2006; UNEP, 2009). What needs and demand are mostly remains unquestioned.

The lifecycle impacts associated with the use phase of products and services are in many cases the most significant ones (e.g. Brezet and van Hemel, 1997), and vary with actual use patterns. The topic of consumption has therefore caught the attention of researchers, who explore the opportunities for transforming consumption activities through design. Similarly, research in fields such as human–computer interaction (HCI), traditionally concerned with making computer systems easier to use, has over time moved towards the contextual, social and cultural aspects of technology use, and recently also new topics such as sustainability (Rogers, 2009; DiSalvo et al., 2010). In both cases scholars have turned to the behavioural and social sciences for theoretical support. Practice theory has been put forward as a relevant starting point to design, to understand the dynamics of consumption and intervene in them (e.g. Ingram et al., 2007; Shove et al., 2007). It has been picked up and explored both in research within DfS and HCI (e.g. Kuijer and de Jong, 2012; Pierce et al., 2013).

At the same time however, design work may be described as sets of distributed but situated, embodied and contingent practices carried by designers and others (Kimbell, 2011). This enables and constrains the opportunities for change. Up until now, design research exploring and developing what is referred to as practice-oriented design has focused on extracting the implications of social practice theory for design and developing approaches for it (e.g. Scott et al., 2012; Kuijer et al., 2013). It has paid little attention to the conditions by which designers work, and what may help and hinder practice-oriented initiatives.

For this paper, the starting point is therefore the ongoing research coupling social theories of practice with insights and approaches from design. The ambition here is to explore and discuss the potential for practice-oriented action to bring about actual reductions in resource use levels, with particular attention to what the space for action may be, given societal arrangements embedding ideas about boundless consumption and perpetual growth.

This is done on a theoretical and empirical basis, by drawing on practice theory and system innovation theory, and on a recent case study on television entertainment practices in Norway, work in the industries catering to them, and European policy for sustainable consumption and production (SCP) (Pettersen, 2013). This allows for tracing the directionality of design and innovation work, and discussing what helps and hinders change-making in sustainable directions. By doing so, the article contributes to the existing literature with an analysis relevant to research, policy and practice. Concentrating on the conditions for *commercial* design and business activity is relevant. These are the settings in which key everyday tools are developed, and firms, as part of networks and systems (Schumpeter, 1943), are in the business of creating change as they work and compete to co-produce value (Prahalad and Ramaswamy, 2004).

The article is structured as follows. First, the conceptual basis is explained, along with what absolute or actual reductions entail from such a perspective. Next, the empirical example of television entertainment practices and related design and business work is introduced, and directions for design intervention proposed. This is in turn discussed, with regards to what helps and hinders change in current practices and regimes, and how policy and practice may foster design work for absolute reductions. Finally, the article concludes on the potential role and feasibility of practice-oriented design as means for fostering actual reductions in resource use.

2. Conceptual basis

2.1. Absolute reductions

First a brief note on the goal to bring about actual or absolute reductions. To measure whether reductions have been achieved, be they relative or absolute as compared to resulting service levels, it is necessary to define some baseline scenario. In ecodesign or DfS consumption has traditionally been addressed from a product use perspective, and the lifecycle perspective used to map impacts and prioritising efforts. A user scenario and functional unit – the quantified performance of the product-system, are taken as the starting point (UNEP, 2009). This includes estimates on where, by whom, how often and for how long a product will be used. Such estimates allow for analyses of environmental impacts over all lifecycle stages. The prioritisation of efforts is done to develop the product that results in the lowest impacts possible over the lifecycle: 'The challenge for eco-product developers is to fulfill a need or to provide a benefit to the customer/user at the lowest environmental/economic "cost"' (Luttropp and Lagerstedt, 2006, p. 1397). As expressed by Roy (2000, p. 291): 'Ecodesign is essentially an attempt to enable existing patterns of production and consumption to continue into the future, at least in the industrialised North, without destroying the environment.' The needs 'fulfilled' and benefits and services produced or 'delivered' are not questioned. The goal is rather improvement in the efficiency of this service 'delivery', or the ratio between resource input and service output. In line with that, Elias et al. (2009, p. 1) for example propose an approach for improving the 'energy efficiency of users' and creating lasting savings by redesigning products to reduce 'unnecessary' resource use relative to user goals. While such strategies may improve the efficiency of technologies, they are not enough to achieve absolute reductions in resource consumption: They cannot cope with systemic responses such as rebound effects (see e.g. Hertwich, 2005). Moreover, 'solutions' designed to prevent specific behaviours risk breakdown when faced with time and the dynamics of everyday life (Brynjarsdóttir et al., 2012; Scott et al., 2012).

Sufficiency goals do on the other hand open up for questioning the types and levels of consumption, as in looking at how to maintain quality of life but reduce consumption volumes (e.g. Tukker et al., 2010). Again however, technically oriented disciplines are not equipped to understand human activity. In the following, and as done before (see Pettersen et al., 2013; Pettersen, 2015), I will introduce a theoretical perspective which may help capture the details of everyday life, and describe and discuss some implications for the design of interventions.

2.2. Practice-oriented design

2.2.1. Social practice theory

From a social practice theory perspective, the social practice is taken as the unit of analysis. Social practices are everyday activities

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