Where Furniture Goes to Die. Designing for Sustainable Behaviour in a Practice Perspective

Mobilier en fin de vie. Le design au service des perspectives durables

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Where Furniture Goes to Die. Designing for Sustainable Behaviour in a Practice Perspective

*Mobilier en fin de vie. Le design au service des perspectives durables*

Marie Hebrok
Introduction

Most social scientists agree that waste is a flexible category constructed by culture. Within the design community efforts are being made to increase the lifespan of products in order to decrease resource consumption and environmental damage, and reduce waste. This work is most often focused on durability of materials, reparability, modular constructions, and separable parts of different materials for recycling. Materials and construction are important aspects of creating more sustainable products, but a single-minded focus on those leaves a blind spot where the effects of life phases, routines, habits, knowledge, values and emotions remain hidden (e.g. Chapman 2010, Fletcher 2012, Hebrok 2014). Increasing the lifespan of products is in most cases regarded as reducing the environmental impact of consumerism. Eco Design, Design for Longevity and Sustainable Design are examples of concepts that aim to consider the environmental aspects of product design. Product longevity has recently been addressed by several scholars engaged with sustainable design (e.g., Cooper 2010; Nes 2010; Chapman 2010; Fletcher 2012). Life-cycle approaches such as life cycle analysis (LCA) (Franklin Associates 1991), and cradle to cradle design (McDonough and Braungart 2002) have also gained considerable attention, taking into account the impact of products from manufacturing through distribution, use and disposal.

Rather than extending the use phase and trying to avoid or delay disposal, design scholars tend to focus on recyclability of materials and creating closed-loop systems...
where materials are not wasted, but go back into an infinite cycle. This is important in order to reduce the environmental footprint of production and consumption. Nevertheless, it is as Chapman (2010) calls it: “the symptom-focused character of sustainable design” (Chapman 2010:66). Although using more sustainable materials and production methods is better than not doing it, it is not comparable in impact to reducing that same material flow and production altogether by prolonging the lives of products.

The article will explore the usefulness of practice theory and an ethnographic approach to Design for Sustainable Behaviour (DfSB) methodology. The hypothesis is that by including both the material and the social aspects of getting rid of things in the analysis, without giving primacy to either, efforts within design to prolong the lives of products may be more successful. In order for designers to design products that live a long life, it is important to understand the socio-material network of influences that make products obsolete. This article explores why people get rid of furniture, and how this knowledge can be useful to designers who aim to design longer lasting furniture. As furniture in many cases is a durable good that could live for centuries with the proper care, wear and decay do not fully account for its disposal. The large recycling centres outside cities were people can relieve themselves of excess ‘stuff’ are a good place to observe the action of wasting. It is where our things go to die, and the reasons behind their ending are not always as straightforward as we might think. This article is based on three visits to the largest recycling and waste handling centre in Oslo where the author made observations and interviews. The assumption is that people might reveal other aspects of wasting when they are approached at the exact moment they are engaging in the practice, and in the presence of the wasted object, than when asked in surveys and interviews detached from that context.

Haraldrud recycling station – the last stop

According to Punch (2005) the ethnographic approach aims to understand symbolic and cultural aspects of behaviour in a context. The researcher can be a participant, just an observer, or both, while conducting ethnography. The extent of intrusion into the situation influences the reactivity level in the data collected. To analyse and deconstruct practices it is important to make observations of the targeted practice. Thus, in order to gain a deeper understanding of disposal practice three field trips were conducted to Haraldrud recycling station, which is the largest station in Oslo and receives a wide variety of materials for recycling or incineration. The first two visits were shorter, to observe and talk to the employees on site. The last visit was longer, with the aim of observing and interviewing people disposing of furniture. This information was collected as part of a larger set of data that also included a web questionnaire with 204 respondents, and seven semi-structured in-depth interviews. The analysis from these have recently been published (Hebrok 2014).

This article explores whether applying practice theory to a more restricted data set can provide enough information to the designer in order to be able to find design solutions that would prolong the lives of furniture. Designers are often given a sparse amount of time to come up with new designs and solutions. Assessing the usefulness of limited fieldtrips to DfSB-challenges is therefor relevant. Thus, the focus will be solely on the fieldtrips in this article.
Prior to visiting the station, an interview guide for a structured interview of 13 questions was prepared, and consent from the administration to conduct the interviews while people were waiting in line in their cars to enter the station on a busy Saturday, was obtained. During the seven hours of observation and interviews, 410 cars visited the station, of which 303 contained only men, 27 contained only women, and 80 contained couples. The clear majority of male drivers indicate the physical act of disposal to be “a man’s task”. The issue of gender is not emphasized in this article, but would be an issue for further research.

Much of the waste disposed of was waste from building sites and garden waste. Some of the cars stopped were transporting furniture on behalf of other parties, which made them unfit to interview. Only cars with identifiable loads containing furniture in the back, the top, or on a trailer were approached initially. Some drivers whose loads were unidentifiable (due to closed trailers or vans for instance) were asked if they were bringing any furniture. Drivers who brought furniture and who were willing to answer a few questions were interviewed, mainly focused on the furniture they had brought with them. For instance, how it had been used, its age, what they thought about it when they first acquired the furniture and what they thought of it now, why it was being disposed of at the station, and if they had explored other options of disposal. The most emotionally loaded or morally inflected questions were asked towards the end of the interview to reduce the influence of shame and avoid too much adaptation of answers to fit what people might think is the ‘right’ thing to say. In total 14 interviews were conducted. The researcher’s presence at the station was surprising to the interviewees, and the majority were curious about the questions, answering them willingly.
Table 1: Interview guide

<table>
<thead>
<tr>
<th>INTERVIEW GUIDE - HARALDRUD RECYCLING STATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you bringing any furniture today? (What?)</td>
</tr>
<tr>
<td>2. Why did you originally buy it?</td>
</tr>
<tr>
<td>3. How long have you owned it?</td>
</tr>
<tr>
<td>4. Has it been moved around?</td>
</tr>
<tr>
<td>5. How has it been used? (for what? By whom?)</td>
</tr>
<tr>
<td>6. Why is it being disposed of? (Who has decided to dispose of it?)</td>
</tr>
<tr>
<td>7. Will it be replaced by something else?</td>
</tr>
<tr>
<td>8. Have you considered selling it or giving it away? (Why not?)</td>
</tr>
<tr>
<td>9. Do you have a special relationship to it? Memories?</td>
</tr>
<tr>
<td>10. Is it difficult to part with it?</td>
</tr>
<tr>
<td>11. Do you think it is complicated to dispose of things? (Time consuming etc.?)</td>
</tr>
<tr>
<td>12. Did you consider refurbishing it? (Was it possible?)</td>
</tr>
<tr>
<td>13. Do you feel any discomfort when disposing of things?</td>
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</tbody>
</table>

**Design for sustainable practice**

In this article practice theory will be applied to the analysis of why people waste furniture and subsequently how DfSB insights can be applied in the design process aimed at extending the life of furniture. The aim is to use social practices as a starting point for the analysis of wasting of furniture in order to pursue a better understanding of how designers may intervene to prolong the life of furniture.

Attempting to address environmental issues through design researchers have begun to develop a field of ‘design interventions’ (E.g. Lilley et al. 2006; Lilley 2007/2009; Bahmra et al. 2008; Elias et al. 2007; Elias 2009; Lockton et al. 2008a/2008b/2010; Wever et al. 2008; Rodriguez & Boks 2005; Pettersen & Boks 2008; Kuijer & Jong 2009/2012; Pettersen 2013; Laitala 2014; Scott et al. 2012; Zachrisson & Boks 2014). Design for Sustainable Behaviour (DfSB) is a young research field which is influenced by several fields both exogenous and endogenous to design, such as interaction design, user centred design, sociology, anthropology, and psychology. DfSB-thinking is based on the idea that control is distributed between user and product on a scale from the user being in complete control to the product being in complete control. How to gain the most useful knowledge of human action that can inform design in a fruitful way in order to influence use and the consequences of use in an environmental perspective is central to the development of the research field.

Practice theory seems to appeal to designers and design researchers due to the inclusion of the material in the analysis. It is a type of cultural theory that is not a unified theory or approach but builds on the works of a number of scholars such as Foucault (1969), Bourdieu (1972), Giddens (1984), Latour (1992), Reckwitz (2002), Warde (2005), Schatzki (2002) and Shove (2012). This article will focus mostly on Reckwitz’s (2002) and Shove (2012) accounts of the theory. It gives the material environment people live in more than
just a functional role, but also recognizes it in being part of shaping how we live. Moreover, it diverts the attention from pure mental, symbolic, discursive and communicational understandings of human behaviour towards a complex of body, mind, material, and structure. As Verbeek (2006) puts it: “Every technological artefact that is used will mediate human actions, and every act of design therefore helps to constitute specific human practices” (Verbeek 2006:8).

8 Design researchers have used insights from practice theory and other theories on behaviour to develop models and guidelines for designers aiming for behaviour change. Elements from the Loughborough model will be applied to the case of furniture in this article in order to suggest interventions to prolong product life.

9 The Loughborough model is based on the work of Lilley (2007/2009) and Tang (2010). In consists of a set of strategies that can be applied to product design in order to influence how people interact with the product. The different strategies can be placed on an axis were at the one end the user is in control of the behaviour and on the other end the product is in control.

Table 2: Retrieved from: http://homepages.lboro.ac.uk/~cddl/doing_it.htm

<table>
<thead>
<tr>
<th>The Loughborough model</th>
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<tbody>
<tr>
<td><strong>Eco-information</strong></td>
<td>Design oriented education:</td>
</tr>
<tr>
<td></td>
<td>Makes resources visible, understandable and accessible to inspire consumers to reflect upon their use of resources. Two types: 1 - Visualizing: expressing the presence and consumption of resources (e.g. energy/water); 2 - Experiencing: design for interacting with resource use.</td>
</tr>
<tr>
<td><strong>Eco-choice</strong></td>
<td>Design oriented empowerment:</td>
</tr>
<tr>
<td></td>
<td>Encourages consumers to think about their behaviour and take responsibility for their actions by providing consumers with options. Users have a choice and the product enables sustainable use to take place.</td>
</tr>
<tr>
<td><strong>Eco-feedback</strong></td>
<td>Design oriented links to environmentally or socially responsible action:</td>
</tr>
<tr>
<td></td>
<td>Informs users of the environmental or social impacts of their actions in real-time to raise awareness and encourage behaviour change. Provides tangible aural, visual, or tactile signs as reminders to inform the situation.</td>
</tr>
<tr>
<td><strong>Eco-spur</strong></td>
<td>Design oriented rewarding incentive and penalty:</td>
</tr>
<tr>
<td></td>
<td>Inspires users to explore more sustainable usage through providing “prompts” for good behaviour or penalties to “punish” unsustainable use. Shows the consequences of consumers actions through “rewarding incentives” and “penalties”.</td>
</tr>
<tr>
<td><strong>Eco-steer</strong></td>
<td>Design oriented affordances and constraints:</td>
</tr>
<tr>
<td></td>
<td>Facilitates adoption of more environmentally or socially desirable use habits through prescriptions and/or constraints embedded in the product design.</td>
</tr>
</tbody>
</table>
Eco-technical innovation
Design oriented technical intervention:
Restraints use habits, persuades or controls user behaviour automatically through design combined with advanced technology.

Clever design
Decreasing environmental impacts without changing user behaviour:
Enables consumers to automatically act environmentally or socially without raising awareness or changing user behaviour purely through innovative product design. Results in more sustainable consumption without needing a conscious change in consumer behaviour.

Some crucial questions arise when attempting to apply practice theory to the case of furniture and the design challenge of prolonging its life-span. If we are to find intervention points for Design for Sustainable Behaviour with the aim of prolonging the lives of furniture - what practices are we to study? Furniture is also involved in a number of practices such as eating, sleeping, relaxing, entertaining, working, playing and moving. However, since the fieldwork this article draws upon is conducted at the point of disposal - is it the practice of disposing of furniture that should be the focus of this analysis or should multiple practices be studied that involve furniture in some way? Perhaps it is the practice of creating a home, in which objects come and go in order in accordance with our aspirations, that is the overarching practice embodying several other practices?

According to Reckwitz (2002) a practice is a “‘block’ whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements” (Reckwitz 2002:250). Reckwitz sees the individual as a ‘carrier’ of many different practices which he sees as “patterns of bodily behaviour” and “routinized ways of understanding” (Reckwitz 2002:250). Not in the sense of just knowing about something, but understanding in the sense of knowing how, of feeling and wanting - knowing in an implicit and culturally defined way. In this case knowing how to create a home for instance through different practices. Not always, but very often a practice involves handling material objects. It is this “stable relation between agents (body/minds) and things within certain practices” that “reproduces the social” (Reckwitz 2002:253). Practices are reproduced by being repeated in sequences over time. Reckwitz argues that in order to change a practise there must be a crisis in routines where there is interpretive indeterminacy and lack of knowledge of how to engage in a particular situation.

According to Reckwitz the smallest unit of analysis is the practice, and the practice consists of different elements such as body, mind, structure/process, knowledge, language and things. Shove, Pantzar & Watson (2012) simplify this account of the elements of a practice and reduce the number of elements to three main categories: materials, competences and meanings, and explain the emergence, change and disappearance of practices by how the connections between these elements are made, sustained or broken. As the issue of wasting furniture involves a number of different practices it cannot be considered a practice in itself, rather a phenomenon constituted by several practices. A good starting point is probably to identify the practices that are represented in the data, which are of course not exhaustive in the description of what influences the disposal of furniture, but reveal some important aspects of the process foregoing the act of disposal. The practices that have been referred to in the data from Haraldrud recycling station are: reconfiguration of household interior, moving,
maintenance, inheriting and receiving furniture as gifts, giving away furniture to relatives and friends or to charity, selling used furniture, and of course disposing of furniture at the recycling station. The first five relate to practices that influence or lead to disposal decisions while the last are practices that include the actual act of getting rid of the furniture. The following analysis of the practices mentioned above will not attempt to dissect them into the different elements described by Reckwitz (2002) and Shove, Pantzar & Watson (2012), but rather to create narratives based on the elements that appear in the data in order to convey insights that the designer may incorporate into his/her design. The three narratives presented in this article were created based on the results from the fieldwork and show that there are many different elements that influence the practice of using furniture. The author will try to describe how they might help the designer create longer lasting furniture.

• The first narrative describes emotional elements that the author has found to be tied to the practice of wasting furniture. These may be categorized under what Reckwitz calls mind and Shove meanings.
• The second narrative describes how life changes in the lives of consumers also affect the lives of furniture.
• The third narrative looks into alternate trajectories for furniture that are being disposed of and why they are not chosen.

Shame, relief and new beginnings

Overconsumption and the subsequent creation of mountains of waste is an environmental challenge that is regularly addressed in research and popular media. For some people this issue is tied to a feeling of shame. This feeling of shame may not be present during the act of acquisition, but rather emerges when disposing of objects (Hebrok, 2014) - especially if they are still usable. Relocation of the object that has been deemed unfit to stay in the household is often a strategy used to postpone the discomfort of final disposal. Much of the furniture brought by the interviewees at the recycling station had been stored for several years in attics and garages before being disposed of. This 'discomfort' seems however to be regarded a necessary evil in the process of inventing and reinventing the material surroundings in the household in a way that they align with the present aspirations of the people living in it. The convenience of disposal at the recycling station makes the discomfort preliminary. Shame thus seems to be in competition with another emotion that presents itself during the practice of disposal - a feeling of relief. The relief comes quickly - after disposal the object is out of sight and out of mind. Below an excerpt from the author's field notes illustrating how the researcher struggled with this feeling of exposing people while doing something 'shameful'.

I went to Haraldrud Recycling Station to observe what people dispose of there and talk to them about why. First, I did a preliminary field trip to make some overall observations. As there was quite a long line of cars going into the station, it took me about 20 minutes to get in. Weekends are the busiest time of the week at the recycling station, so I chose a Friday afternoon in May. When I drove into the area, I pretended to be there for the same reason as everybody else, to dispose of something; I wanted to observe before I revealed myself. On this first trip I brought my camera, which seemed to make people nervous and was therefore perhaps not such a good idea. As I took a few photos, not of people as they threw things into the containers, but only of what was already down there I heard someone whisper behind me. The situation was a bit uncomfortable, like I was there to expose
someone and that people felt “caught in the act”. I was reluctant to ask someone for an interview because of the discomfort I felt. I was struggling with the feeling of getting too close to people, like I was disturbing them in a private matter. No matter how I rephrased my opening line, I felt like I was raising my finger at people, accusing them of something. There was a stressful atmosphere at the station and people were running back and forth between their vehicles and the containers.

After a while one of the staff approached me and told me that people were wondering what I was doing, since I was taking pictures. To my surprise the recycling station was not publicly owned and I had to clear the matter with a woman at the office. If not, I could risk being "thrown on my head into one of the containers", so the employee said. I decided to come up with a new strategy before talking to the right people. The discomfort I felt, and the discomfort I sensed within the people who were there seemed to me to be an expression of the shameful position the disposal of goods holds in society.

On my second field trip, which was cleared with the right people, I had another talk with the staff. I had observed many usable objects being disposed of in the waste containers instead of placed in the Fretex container for potential reuse, and asked the staff if they enlighten people on the location of the Fretex container. Their reply was interesting. They did not want to interfere in the "private" decision of something to be terminally disposed of in the container or to be placed in a location for potential reuse. It could seem that the staff was shielding people from being exposed in doing something that is considered shameful by defining their actions of disposal as private. The interference of the staff at the recycling station would for instance implicate the disposal of usable objects in the containers to be "morally wrong", thereby exposing the person's immoral action. The possible publication of the photographs I had taken on my previous trip could do the same, provided someone recognized the objects in them.

I did not conduct any interviews on this fieldtrip either, as people were not willing to talk to me while working to dispose of their belongings in the containers. To make the interview situation more comfortable for the interviewees as well as for myself I decided to return on a Saturday when the station is full to interview people whilst waiting in line in their cars to enter the station. This strategy turned out to be much more successful.

Interestingly, although there was a strong sense of shame and discomfort present in the experience of the researcher, this was not reflected in the interviews. When asked if they feel discomfort by getting rid of things, only four interviewees admit that they felt some level of discomfort or bad conscience by disposing of the furniture. One said that she gets a bad conscience towards society for wasting resources, and one interviewee thought of those that are not in a position to waste their things. The third felt discomfort because she once loved the chair she was discarding and found it to be beautiful back when it was new. The fourth said she felt a bit sick because she was throwing away some furniture she had inherited from her parents, but it was just too expensive to repair and refurbish them. Many of the interviewees emphasized that they did not feel discomfort because what they were disposing of was broken and unfit for reuse, but that they would have felt bad about discarding it if it was still usable. This might suggest that when arriving at the final point of disposal people have already dealt with whatever feelings of shame they may have struggled with before making the decision to get rid of something. For instance after storing it for a long time in the attic, or trying to pass it on to relatives. Now they are after the liberating feeling of relief, which they express in the interviews. The relief comes because they have freed up space for new furniture or for a new function of the room, and because they finally are getting rid of something they perceive as “junk”. Perhaps it is this status of junk that first must be applied, be it mentally or physically, or
both, to the object that is unwanted, in order for it to be discarded without discomfort. Certain practices can be said to facilitate this process. Such as storing it in cellars or attics with environments that speed up decay, or by changing the location and use of the object in a way that increases wear and tear whilst ignoring the need for maintenance and repairs. At some point the object will be junk, and it can be disposed of without shame. It is now officially useless.

**Emotional attachment and changing life phases**

This process from shiny new object to junk is what is interesting here. In an attempt to address the whole life of the furniture being disposed of the interviewees were asked why they originally had acquired it. The answers can be grouped into three:

- Because we inherited it, it was a gift from a friend, it was cheap (…) at a time when we could not afford much – now we want something we like.
- Because I liked the look of it, it fit into the room it was meant for.
- Because we needed - a lamp, a dresser, a table.

These reasons can be seen as grounded in a certain pragmatism. The furniture was to fulfil a certain function. It was usable and “fit in” at the time of acquisition. Nevertheless, over time, something changed. The interviewees were also asked how long they had owned the furniture they were disposing of. The length of ownership was between 2-30 years. This shows that furniture have potentially long lives, but that some are disposed of after a short period of time. Much of the furniture that was inherited had been in the owner’s possession for a long time, between 7-30 years. This might suggest that inherited furniture embodies some sort of additional value. Emotional attachments to artefacts influence how we assess their value (Chapman 2010; Batterbee & Mattelmäki 2004). They often affect the life of the artefacts because we want to keep them longer (Chapman, 2010). Thus emotional attachments influence how it is treated. Inherited furniture is often associated with emotional relations with the former owner, as well as his or her values and preferences. This emotional attachment can make it difficult to incorporate the furniture into one’s own household, but also difficult to part with, depending on the positive or negative nature of the attachment. Chapman (2010) argues that more durable relationships between products and consumers must be created through new commercial strategies. However, as Chapman (2010) points out, emotional attachment does not necessarily result in product longevity through a longer use phase. The designer has a difficult task in creating and predicting emotional ties formed with objects.
A central question in the interview guide was “Why is it being disposed of? (Who has decided to dispose of it?)”, and the follow up question “Will it be replaced by something else?”. Concerning why they disposed of the furniture a majority of the interviewees answered either that the furniture was worn, ugly and unfashionable, or that they no longer had use for it because they had moved or changed the function of the room it was placed in. Two male interviewees answered that their existing and new spouses disapproved of it. All interviewees but two had replaced or planned to replace the discarded furniture. These reasons for disposal can be seen as results of changing life situations. It is not necessarily the material or visual change in the furniture that causes end of life, it is also a situational influence. Examples of changing life situations are moving out from the parental home, new financial status, moving in together and getting divorced. It is for instance quite common in Norway when moving into the first apartment that young people are given old furniture by parents and relatives in order to be able to put together a home. Later on new financial status might create an urge to modify that home more in accordance with personal preferences (Hebrok 2014). Further on, when moving together with a life partner or splitting up a family home furniture may become obsolete because they do not fit into the new constellation of the households.

Alternate trajectories

There are of course alternate trajectories for furniture that have become obsolete either in a material or in a socio-functional way, or both. Before the decision is made to drive furniture to the recycling station there are other options that can be considered. Thus the
interviewees were asked if they had made attempts to repair and refurbish their furniture, alternatively to sell or give them away.

14 Regarding selling or giving the furniture away, none of the interviewees had made such attempts. Five believed that no one would want it, four found it too time consuming to arrange. One said that he could not because the furniture was broken, another stated that the furniture had "done its job". Only two said that they would place the furniture in the Fretex-container for reuse. Giving furniture to charities, friends or relatives seems to be a process that some people find challenging. The biggest challenge may be connected to the act of giving something to someone close to you. Whoever offers the other an object he has found to be unsuitable for his own use, may communicate an assumption that the other will be satisfied with the symbolic and functional qualities that are rejected by the giver. McCracken (1988) captures this phenomenon as rituals of exchange that channel objects that represent certain symbolic and functional properties to those persons who are perceived by the donor to lack these qualities. Thus, many were reluctant to offer used items to their nearest social environment, choosing instead to give to charity or drive it to the landfill / recycling centre.

15 None of the interviewees had considered refurbishing the furniture they were disposing of. Five people answered that the furniture did not need refurbishing because it was in good condition. Some argued that refurbishing was too expensive and too much work, whilst the rest just admitted that they had no interest in refurbishing and just wanted something new. One said that the furniture was beyond repair. In a lifecycle perspective reparability and maintenance are key elements to extending the life of artefacts. Furniture is often perceived as a "black box." Hidden structures and cast material make maintenance and repairs difficult. The design and complexity of the product can hide the potential for repair and maintenance from the eye of the owner. The current wide availability of knowledge about maintenance and repairs through literature and the Internet raises a question of whether this affects the life-spans of furniture. However, maintenance and repair activities are also motivated by other factors than knowledge, skills and opportunity. Over the past decades there have been significant changes in the way family life is organized in Norway and other comparable countries, and how time is valued. In Europe more women work than ever before, especially in the Nordic countries (SSBa 2004). In Norway households where both genders pursue a career are common, as are single households. According to the report "Times are changing. Time use 1971-2010" [author’s translation] (SSBb 2012) time spent on maintenance work increases with age. Over the last 30 years there has been a decline among young people that spend time on maintenance. In general fewer people spend time on maintenance, and those who do, use less time than before. Men spend more time on maintenance than women, and more maintenance work is conducted in small towns than in cities (SSBb 2012). It seems that the motivation to devote more than the time necessary for repair and maintenance activities may be weak. The high price of labour in Norway seen in relation to the prices of new products often make repairs more expensive than replacing the item with something new. Lack of motivation and inconvenience experienced during maintenance and repair can be seen as obstacles to maintenance and repair activities.

16 The implications for design for longevity have long been acknowledged by the design community. Nevertheless, as products have become cheaper and cheaper to produce and to purchase, maintenance and repair services have become less and less profitable. In the view of the consumer repairing something hardly ever is worth the effort and the money.
It is less time consuming and cheaper to replace the product with a new one. Burns (2010) calls this the economic mechanism of product obsolescence.

**DfsB strategies to prolong the lives of furniture**

How can designers use this knowledge in design of furniture? The strategy *Eco-choice*, as described in the Loughborough model, focuses on providing consumers with options for sustainable use of products. Knowledge of how different transitions in life affect the longevity of products may be used to create products that are more adaptable. A product can be more adaptable in that it is easy to change its appearance, renew its surface, and upgrade it both visually and socially. This can for instance be done through new business models providing rehabilitation services, and replaceable parts and surfaces throughout the lifespan of the product it puts out on the market. The designer plays a crucial part in the initial design of the product and should plan for future upgrades and maintenance. The *Eco-spur* strategy rewards sustainable use and punishes unsustainable use of products. The updated look and function of adaptable furniture as well as the feeling of acting sustainably may work as a reward for the consumer. Spurring them to do so instead of disposing of it. Disposing of the furniture should be made more difficult than upgrading and maintaining them. This may be out of the hands of the designer, and more a legislative issue pertaining to the regulation of the handling of household waste, and the business models of furniture manufacturers and retailers.

As shown by van Nes (2010) in the case of electronic products, one can design them to be adaptable through reprogrammable interfaces or changeable upgrade parts to fit new routines and users. Van Nes addresses the issue of replaceability by visualizing an example of an electronic device that is divided in parts containing slow- and fast-changing technologies, making the fast-changing technology parts easy to replace. If this approach was to be applied to furniture, one could imagine designers creating furniture that more easily could be altered in colour, material and shape by making it more modular and part of a business model that would make different interchangeable modules available to the consumer. Consumers’ need for novelty is often taken for granted. However, Van Nes (2012, p. 107) argues that people want “well-functioning and up-to-date products that meet their changing needs. This requires a similar approach in design: the development of products that are dynamic and flexible.” Thus it might not be the need for novelty, but the lack of flexibility that causes disposal. Designers and businesses could address this issue by making products more adaptable and versatile and by offering consumers the opportunity to change and rearrange their possessions to better match their changing lives, both materially and socially - both in the way they look and in the way they function. As shown, emotional attachments to furniture through for instance inheritance can make people keep the furniture longer. Thus it might be fruitful for designers to explore other ways to create this emotional attachment through spurring sustainable behaviour by adding this emotional dimension to furniture design.

*Clever-design* does not demand that consumers change their behaviour or their attitudes, but facilitates the desired outcome through its design. A more strategic use of robust and non-robust materials might be required in furniture design, similar to the example made by van Nes (2010) in the case of the strategic positioning of fast- and slow-changing technologies in a product, making the non-robust materials that are not suitable for maintenance replaceable. This approach demands some development within business
models, requiring businesses to consider the whole lifecycle of a product in connection with the life cycles of people. The new generation of products must come with a “maintenance-modification-upgrade plan”. This plan should include services provided by the manufacturer, distributor or retailer of the product. This will replace the income lost on selling more products. Several scholars have advocated this move towards product-service-systems (PSS) (Baines et al. 2007). A PSS is a system that provides both products and services that create value for the user. In this way economic success is made less reliant on material consumption, and a “dematerialization” of the process of giving the consumer what he needs in exchange for money is made possible.

Concluding discussion

According to the interviews conducted at Haraldrud recycling station, much furniture is disposed of not due to the decline in its physical performance, but due to other properties perceived as flaws. Furniture can for instance be worn on the surface while still being in a functional state. Properties often considered flawed are worn surfaces and undesirable designs and styles. Furthermore, the lack of motivation, financial gain and convenience regarding maintenance and repair of old furniture causes people to get rid of them instead. The trigger for getting rid of furniture seems often to be changing life situations - changes in the social structure of the household and changes in financial position for instance. There are also material aspects of furniture that cause disposal such as wear and tear, unfashionable designs and colours, poor construction and possibilities for repair and maintenance. Societal and economic structures make it unprofitable to maintain and repair most old furniture. Emotional attachments can both prolong and shorten the lives of furniture dependent on the nature of the attachment.

Summing up the practice elements that influence the disposal of furniture there are a lot of different aspects to pay attention to. The challenge for the designer is to identify where design might make a difference to the life span of certain furniture. Applying practice theory has helped construct three narratives that describe elements of practices that are related to the disposal of furniture. In order to take the insights from these narratives further into concrete designs that will prolong the life span of furniture and make people act in a more sustainable way regarding the use, maintenance and repair of them the author proposes to include strategies from Design for Sustainable Behaviour. Eco-spur, Eco-choice and Clever-design may be strategies that can be worth pursuing in order to facilitate a more sustainable behaviour regarding the disposal of furniture that will prolong its life spans.

The reason for proposing both practice theory and DfSB to the design challenge of prolonging the lives of furniture is to address both the social and material aspects of products simultaneously and subsequently connect them to strategies pertaining to the concrete design process. Analysing practices instead of isolated user behaviour or user-product interaction may open up for a broader, more complex view of how people and products interact and mutually constitute our everyday lives. Furthermore it may provide better knowledge to the designer for making decisions in the design process that will in fact make an impact on how the resulting product will be used and maintained, and for how long. This analysis has shown that it can however be difficult to define the relevant practice, since several practices may be influencing the behaviour that is being studied. This makes it difficult to focus the analysis, and can make it be about “all and
“everything”. On the other hand it reveals more complexity and context than a traditional user-centered approach might do.

This article illustrates how such an analysis can be done without providing a rigid template, which means that the designer must apply his/her analytical skills in order to gain a deeper understanding of all the elements that are relevant for a certain DfSB challenge. More research is needed that further explores the usability of merging interdisciplinary fields of research and their applicability to Design for Sustainable Behaviour. Moreover, research is needed that applies DfSB tools and guidelines to real life cases. Further research should focus on the next phase pertaining to the actual design of the product based on the insights generated from this approach. Furthermore, design researchers should attempt to study the actual effects of DfSB interventions in practice. As of now the focus has been on developing strategies and methods leading up to a final design. Business will certainly be interested in such a cost-benefit analysis of input versus real life effect, and so will designers. Because this study is based on a very limited set of data, it does not provide the same complexity of relevant information about how and why people waste furniture as the author’s 2014 study. While it is not exhaustive in finding all relevant aspects of why people discard furniture, it does however make some of the main pressure points visible to the designer. Perhaps enough to make some design interventions that will make a difference. This remains to be tested. However it seems to demonstrate the feasibility and usefulness of conducting brief field research, an important consideration when time is money. In business DfSB might be an unknown concept with an uncertain influence on profit. Thus, finding the right areas to apply this sort of design research and development is crucial, as well as finding the actors and contributors that are interested and willing to invest. There are of course limits to what the designer can control, thus design can only get us so far. In the case of wasting behaviour the social, economic and political context is as important as concrete design features and functions. Issues such as legislation concerning handling of household waste, tax and producer responsibility create structural challenges that are outside the control of the designer.

BIBLIOGRAPHY


ABSTRACTS

This article explores the fruitfulness of an interdisciplinary approach to Design for Sustainable Behaviour (DfSB). Through an ethnographic approach and Practice Theory the author creates narratives that illustrate social and material antecedents of why people waste furniture. Furthermore, the insights developed by the narratives are approached with DfSB tools, in order to point to possible design efforts that may contribute to prolong the lives of furniture. The aim is both to provide designers with a methodological approach applicable to DfSB challenges in general, as well as to the case of furniture in specific.

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