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MATERIAL PRODUCT RELATIONS EXPLORED THROUGH EVERYDAY STUDENT BEHAVIOUR

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ABSTRACT
Longer product lifetimes [1] are one of many strategies explored for more environmentally relevant design, and can as such be included in the product design curriculum at university level. A wider but less well defined theme which underpins longer product lifetimes is the question of (human) relationships to things as physical material. How much do things matter and how much does matter really matter to humans? Design and design education address both physical and virtual relationships of humans with their environment. In the context of environmental imperatives that encourage a logical shift of emphasis to the latter of these two relationships, questioning the former is increasingly important, even if this might appear counter-intuitive.
This paper presents and compares simple and complimentary exercises tested in different forms during teaching modules looking at the longevity of material product relations. The aim being to sensitise students to different facets of material relationships starting with their own. These exercises appear to be an effective support for generating group discussion on longer product relations and for encouraging the expression of individual diversity to the peer group. While we do not aim to present here a definitive model, the cumulated experience of these exercises gives an opportunity for highlighting a number of key themes, observations and opportunities.

Keywords: Longer product lifetimes, materiality, product attachment, personal inventories

1 INTRODUCTION

As one of many strategies that can be explored for more environmentally relevant design, questioning how human-product relations might become more long-lasting is a relevant addition to the product design curriculum at university level. This subject can and already has been included in design teaching in a number of different ways [2] [3] [4].
This paper presents and compares two simple and complimentary exercises that have been tested in different design education institutions, with different year groups. These exercises are part of teaching modules looking at the longevity of material product relations. The aim is to sensitise students to different facets of material relationships starting with their own. The exercises, based on different forms of personal inventory, involve visual communication of aspects of students' own object-related behaviour. These exercises were given over a period of four years in slightly different forms with the aim of improving their validity. The teaching examples described below, testing different versions of this approach are contextualised, compared and discussed, highlighting key themes. The aim is to describe an approach that seems effective, but that can no doubt be further improved and refined.

2 LONGER PRODUCT LIFETIMES

Longer product lifetimes are one of many strategies explored for more environmentally relevant design. In 2015, the first international conference on product lifetimes and the environment was held in the UK (PLATE) [1]. The conference editorial describes an emerging area of research and the need to explore the influence of product longevity on environmental, economic and social sustainability. Themes treated by the conference were: design approaches to product longevity, consumer influences on product lifetimes, questioning the throwaway society, product lifetime optimisation strategies, the role of product longevity in resource efficiency and waste reduction, economic implications and marketing strategies, and finally policies, regulation and legislation.

2.1 In Design

As the list of themes suggests, this subject demands a multi-disciplinary approach, but design and designers can be at the forefront of this reflection. Ramirez et al, 2010 [2], for example aimed to explore how industrial designers, as initiators of the relationship between products and users, might facilitate the generation and continuation of positive experiences that could potentially lead to the consumer's enduring attachment to particular products. Longer product lifetimes are often linked, as here, to the question of "product attachment", which has become a clearly defined research domain, spreading from design disciplines [5] [6], through to consumer science and consumer psychology [7] [8].

2.2 Attachment and deep relations

Product attachment research tends to emphasise self-symbolism. Kleine and Baker [7], explain that the key characteristics of "material possession attachment" are "self-definition and self-continuity/change". In more design-focused research, product attachment is linked to emotional bonding [5] or what J. Chapman named emotionally durable design, in the eponymous book, 2005 [9]. Rather than focussing on the multiple (material) things that go almost unnoticed in our everyday lives, a majority of user-attachment research tends to look at objects with deep meaning. This point was made by Chapman (2017) [10], questioning the "depth bias" in product life research, meaning that our relations with the "myriad objects in the shallows" of our everyday experience are often overlooked, despite the fact that these may be the objects that generate most ecological and social pressure. Chapman points out that deeper relations are more idiosyncratic, may not be wholly designable and a world where all products are deep, priceless and indispensable to their owners is inconceivable, even repellent. But, whilst promoting depth-appropriate design, the contribution concludes by suggesting designers have opportunities to engage users in deeper experiences in order to form longer-lasting bonds.

2.3 Spirituality

The focus on deeper experiences is also present in the approach described by Stuart Walker, 2014 [11], Designing for Sustainability, which advocates a new emphasis on spirituality in design. Walker suggests that the way our material culture is designed could and should be in greater accord with inner development, and less solely concerned with facilitating tasks, utility and practicality. Walker suggests that greater emphasis on wisdom and spirituality could moderate the place and significance of material goods in our ideas of the good life. While it would be hard to argue with Walker's comments that today's most widely distributed, often least enduring technological products are designed, produced and marketed with priorities incompatible with inner harmony and living a "good, active life", this meaning-focused approach may encourage even less consideration of materials and matter.

2.4 Matter relations

A wider but less well labelled theme which underpins longer product lifetime which goes beyond models of sustainable design (and sustainable consumption) is the question of our (human) relationship to things as physical material. How much do things matter and how much does matter really matter to humans? This question has been raised by scholars in a range of different disciplines. The philosopher Peter Paul Verbeek (with Petran Kockelkoren), 1998 [12] warns against a platonic approach by designers where objects are considered only as copies of more fundamental ideas, and proposes a material culture taking matter more seriously. JB Twitchell's 1999 study of commercial culture [13] suggests we may not be materialistic enough, with current consumers caring more about meaning than material. Unhealthy consumption, for Twitchell, involves letting producers generate meaning for consumers. Designer and educator Nick Gant focuses on the mediating capacity of matter [14]. The notion of meaning is shifted to materials themselves rather than products. Looking particularly at recycled materials, but citing research that highlights the meaning that materials themselves can convey, Gant advocates greater material literacy, encouraging designers to be(come) more aware of new advances in materials and become more involved in the design of materials.

3 LONGER PRODUCT LIFETIMES IN DESIGN TEACHING

Design addresses both physical and virtual relationships of humans with their environment. Current environmental imperatives encourage a logical shift of emphasis to the latter of these two

relationships, as can be seen in the rapid increase of Service Design and UX design in design education. But even in this context, questioning physical product relationships is perhaps increasingly important, even if conformity to current thinking might suggest the reverse. Karapanos et al. 2009, [15] highlight that product and product experience longevity may not have been widely researched until recently, perhaps because of a belief that motivating prolonged use does not lead to increased commercial revenues. But they argue that temporality is in reality increasingly important as in service-centred economies revenues come from supporting services, and prolonged use should therefore generate more revenues.

Longer product lifetimes are already addressed in the product design curriculum at university level. Ramirez et al, 2010 [2] introduced students to notions of product attachment, where product determinants such as providing pleasure, expressing user identity, articulating belonging to a group and evoking past memories, as well as product personality and personalisation, were linked to generating more product attachment. A day-long "Product Attachment Charette" was organised, where students were asked to question what might generate premature disposal behaviour in furniture, and generate quick concepts, based on product attachment theory, to counter this.

In another example, a longer project (6 weeks) with masters level design students, [4] involved the generation of product concepts that were subsequently analysed in terms of the different facets of user activation (cognitive, motional, relational, perceptual and imaginative) they potentially elicit. These five levels of user activation were proposed as possible strategies for creating longer lasting products.

Underpinning these cases is the idea that longer product relationships are likely to be multi-facetted.

4 CASE STUDIES

4.1 Illustrating relation "determinants"

The first two versions of the exercises, quick illustrated object commentaries, started from the notion, mentioned above, that longer lasting product relationships can perhaps be characterised by their multi-facetted nature. These exercises were given at the start of 5 day workshops on lasting product relations with second year Masters students (2 groups of 15 students). The aim was to demonstrate to design students the multi-facetted nature of their own more lasting product relations.

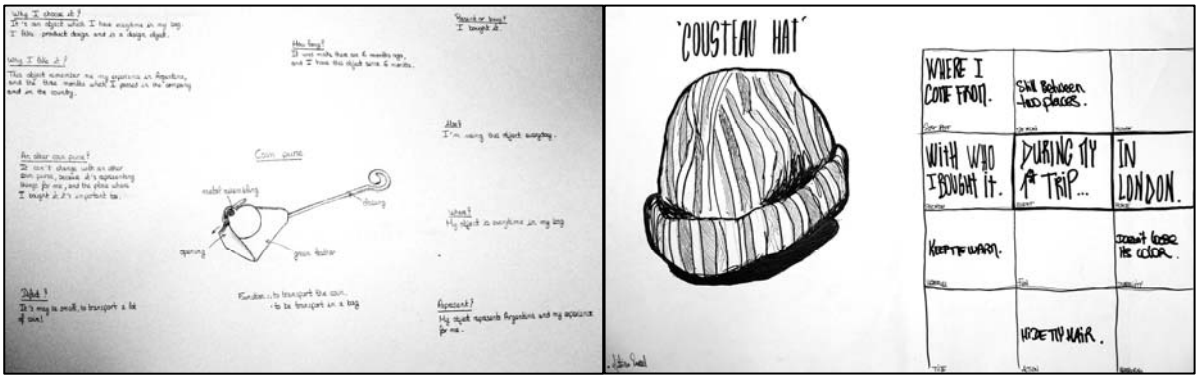

Figure 1. example from exercises given in 2013, left, and 2014, right

In the first version (2013), students had been asked to bring with them for the first day of the workshop an everyday product they were attached to and hoped to continue to use in the future. In class, students were asked to illustrate the object simply, and to note reasons why they chose that particular object and the reasons for their attachment to it. The resulting illustrated pages, in A3 format, were the basis for a group discussion which enabled the group as a whole to identify a large number of different facets that might be responsible for their product relationships.

In the second version, (2014), with a different group of students, as well as illustrating an object, twelve possible facets or determinants (the term used by Mugge, 2008 [5]) were given and students could put personal reasons in each of the determinant "boxes" that they felt relevant. The twelve facets were; self; past, present, future, memories; people, event, place, usefulness, fun/pleasure, perceived durability, long time ownership, remembered actions and reassurance.

Whilst the second of these two versions gave the opportunity to quantify and compare the more recurring determinants, (all students mentioned between 8 and 12 determinants), the exercise appeared to be less well perceived by the class, based on verbal student feedback at the end of the workshops.
The advantage of these exercises was their rapidity (roughly an hour for illustrating objects and thoughts), as well as creating simple visual artefacts enabling discussion on the workshop subject. They also created a form of ice-breaker, introducing the students to one another and to the teacher.

4.2 Illustrated Inventories

Based on the effectiveness of these first exercises, but also taking into account that an overly formatted version might not be appreciated, a similar exercise was given to Masters design students at the start of two 6 day workshops on lasting product relations (26 students in all, 2016 and 2017), and also to a group of Freshman students in product and transport design (37 students, 2017).

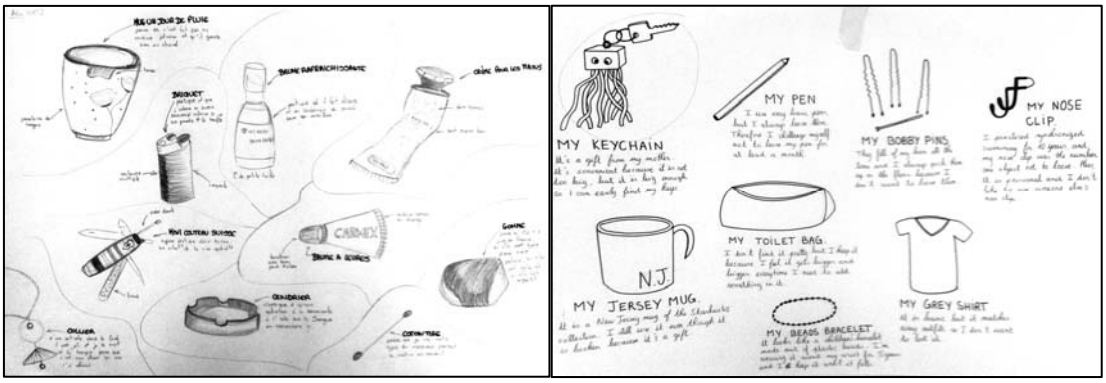

Figure 2. examples of inventories in 2017, Freshman group (left) and Masters student (right)

The exercises, (Figure 2) are based on a form of a personal inventory, with students asked to think of and draw ten everyday objects that matter to them, and that they hope to continue to use. In both cases the format was A3. In order to overcome drawing difficulties, particularly in the case of the freshman group, emphasis was placed on communicating rather than drawing quality. Students could illustrate objects that were physically with them or not. For this group the exercise was also presented as a form of self-research introducing user-research methods.
In all groups, students were initially not all comfortable with the idea of admitting to material relations, with several in each group stating that they are “not materialistic”. In order to de-dramatise the exercise, the emphasis was explained as being objects that you try not to lose, and that you hope to keep, and therefore more a question of what the students find useful and will not waste, rather than “stuff they accumulate” which seemed more environmentally acceptable.
While this exercise was done in class, and discussed with the peer group, half of the masters group in 2017 were subsequently asked to take their illustrated inventory home with them, and to add to/modify the page according to what they noticed. This additional phase generated some interesting comments, selections of which are noted in Table 1 below.
Thinking of ten objects was initially considered daunting by many of the students, a common first comment being “there’s only my phone”. Finally over 45% of the cohort illustrated and commented nine or ten objects, (70% between 7 and 10). The “only my phone” comment would suggest that the variety of objects illustrated by the cohort might be quite limited, but in all 110 different objects were listed.

4.3 Everything touched

A final exercise carried out in parallel to the inventories with the masters students in 2017, and with a separate group of second year product design students was based on the “Every Thing We Touch” protocol presented by Paula Zucotti in the 2015 book [16] of the same name. For both student groups, the book and website related to this project were presented and discussed prior to doing the exercise. For the masters group the exercise was carried out from the end of one school day through to the following morning. Students were asked to list everything touched, and were given time to compile their results into sketch posters in class and present their results to the peer group.

For the second group, the students were instructed to note everything touched in one day, and to make a poster of their findings. The students had one week to complete the task. This group were allowed to choose to leave out certain objects in their posters, or to emphasise the importance of certain objects.
In both cases the students were encouraged to re-interpret the exercise rather than copy the Zucotti model, and were asked to include some hierarchy and/or organisation in their visual presentation documents. Examples of the work by the second group are shown below, Figure 3.

Table 1. Selection of comments from students who took inventories home

1	the answers **depend on place and time**, during the summer (holidays) object selection would be different
2	the object **selection is very place dependent**, it represents the place where I am not
3	the objects **represent two different places and two different lives**
4	most objects are **about emotions and caring**
5	more about **practical objects** in my case, things **I have to use every day, and are replaceable**
6	the senses are really important for me, there seem to be **sensory references in all my objects**
7	the objects I chose are the ones that are **very important to me**
8	I chose some **objects in anticipation of the next season** (winter)
9	many are **objects I don't often use, but were in my mind**, and some I touch a lot everyday
10	only one of my selection is **an irreplaceable object**
11	for most of the objects **I'd almost be happy to lose** them
12	doing the exercise **put the objects back into my mind**
13	I know their origins, if someone gave them to me, **I remember the history easily**
14	the objects I chose are **things I depend on**
15	one category is life comfort, **reassurance and excess stuff**

In both groups, students were very keen to do the exercise, but in the case of the Masters students there was a slight sense of disappointment that the illustrated collection of objects showed that their lives were boring. The Zucotti project clearly creates a series of fascinating portraits suggesting interesting rather than mundane lives. The second group, who were able to make more visually appealing artefacts, were generally much more positive about the exercise. In both cases students singled out very few notable objects, which can be compared to the relative difficulty students had initially to create their inventories, most of their everyday stuff is not easily considered in terms of "mattering".

5 DISCUSSION

Despite the "only my phone" comment, only eight students listed their smart phones as objects that mattered to them, which could perhaps be partly attributed to self-censorship. The majority of comments in the inventory exercise suggest that students didn't particularly censor their inventories, but were to a certain extent aware that the illustrations would reflect themselves. Only one student out of the whole cohort explained that she was really not comfortable with the exercise as she considered herself a shopping addict, and felt embarrassed about her relationship with objects.
A clear finding from the inventory comments is that the cohort didn't appear to be "looking" at their objects, and over two thirds of the objects illustrated were from introspection rather than objects actually present with the participants.
The wide variety of objects illustrated in the inventories was clearly at odds with the students' own expectations at the start of this exercise. The inventory exercise in particular, and the object comments, gives a sense that the large majority of objects surrounding the cohort are invisible. Very few comments relate to physical visual product attributes, but interestingly touch/body related comments are much better represented.
While product attachment research places emphasis on symbolic and self-related determinants, the comments generated by the inventories cover a much wider range of relationship facets, with self

identity/style, social links/sociability, function/activity, daily rituals, body contact/feeling/touch, comfort/reassurance representing the majority of comments.
The relatively large number of inventory comments justifying attachment in terms of symbolic meanings (memories, links to people) suggests that these aspects of product relations are easier to express, particularly in discursive form. The advantage of the "Everything" exercise is that it refocuses on actual objects touched, suggesting that the two exercises are complimentary. A point confirmed in the workshop with Masters students in 2017.

Figure 3. Examples of "Everything Touched" illustrations by second year students

In conclusion both the mini-inventories and the "everything touched" exercises generated rich discussions, and created visual artefacts that demonstrated results not expected by the student cohorts. Students were able to see for themselves that their own relations to things that matter to them were more multi-facetted than they at first thought. But these exercises also highlight that matter relations are ambiguous, idiosyncratic and perhaps to a certain extent invisible. It appears important to encourage future designers to think more about how matter matters, and to avoid over-emphasising the importance of (deeper) meaning, which may be one of the culprits in our tendency to under-consider the materiality of things.

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