

A SNEAKY KETTLE: EMOTIONALLY DURABLE DESIGN EXPLORED IN PRACTICE

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ABSTRACT

Emotionally durable design is a genre of sustainable design that aims at reducing consumption and waste by enhancing the durability of the relationship established between users and products. Several design strategies and theories have been published on this topic; nevertheless, it is still underexposed in practice. This paper presents a case study of an emotionally durable kettle, which is used to explore the topic in design practice. We build onto the existing ideas on emotional durability using the insights from the case study and propose five product qualities for emotionally durable products: involvement, animacy, adapt to self-identity, evoke memories, and rewarding.

Keywords: case study, emotionally durable design, design guidelines, exploration, sustainability.

INTRODUCTION

Every day consumers are buying new hardware products, the majority of these purchases being replacement purchases. There is always a reason for buying something new. Wear and tear plays an important role, but also design, quality and social value are some of the factors influencing the replacement decision (Van Nes, 2010). This high replacement frequency is in conflict with the striving for sustainable consumption. Hence, researchers in the field of sustainability have proposed to create longer lasting products, because prolonging the product's usable life will result in less waste and consumption. To this end, several design strategies have been suggested. Some of them focus on prolonging the products' ability to remain well-

functioning over time (Van Nes, 2010; Smeels, 2000). Others try to enhance the emotional bond between the user and the product, also known as emotionally durable design (e.g. Chapman, 2005; Mullaney, 2010). The focus of this work was on the latter because it is not self-evident how to design emotionally durable products.

Despite that several design strategies have been suggested for creating emotionally durable products, the topic is still underexposed in design practice for several reasons. Companies previously had no reason to help customers to delay replacement purchases. However, longevity is becoming increasingly important. There is a trend of products becoming more service-centred (Brown, 2009; Esslinger, 2009). Such products are sold for lower prices, and the revenues are generated by the supported service. Extending the usable life of a service-centred product has therefore a positive impact on the revenues of a company. Furthermore, the time and coverage of product warranty is increasing due to legislation and competition enforcement (Karapanos et al., 2009). The European Union demands that a two year guarantee applies for the sale of all new consumer goods everywhere in the EU (Council Directive 1999/44/EC). In some countries, this is even more. In Germany, for instance, it is common for consumer products to have a manufacturers' guarantee of five years (European Commission, 2007). If products will last longer due to these rules, it is important to consider the long-term experience users have with these products. To achieve a sustainable brand image, consumers should not only love to use their products during the first months, but also in the years to come – the products should become emotionally durable. It is

therefore interesting to gain knowledge on the practical side of emotional durability.

In this paper a literature surrounding emotional durability is reviewed and a case study is presented that was used as an initial exploration of emotionally durable design in practice. The focus of the case study was on a mass produced household item to ensure the findings were pertinent to more industrial design situations.

PRODUCT QUALITIES FOR EMOTIONAL DURABILITY

In our definition products and services are emotionally durable when the relationship established between the user and the design remains successful or even enhances over time. Literature reveals various design strategies for designing emotionally durable products (Van Hinte, 1997; Chapman, 2005; Mugge, 2007; Mullaney, 2010).

To facilitate the design of an emotionally durable product in the case study the literature was reviewed for clear design qualities that were less ambiguous and at the same time less prescriptive. By reframing and combining the variety of existing theories on emotionally durable design the following five product qualities were formulated – involvement, adapt to the user's identity, provoke memories, animacy, and rewarding. The intention was that these qualities could be used during the case study when trying to design for emotional durability.

QUALITY 1: INVOLVEMENT

One of the characteristics of a product is to stimulate by providing novel, interesting, exciting or even fascinating functionality, content, presentation or interactions that raise the attention of the user (Hassenzahl, 2003). For many products on the long term, the user will become immune to this stimulation (Chapman, 2005). The product becomes less interesting and might eventually not be used anymore. As a consequence, the product and its meaning become more and more separated and the product gradually loses its meaning (Mugge, 2007). To prevent this from happening, the product should continue to stimulate and intrigue the user. The temperature sensitive wall paper, designed by Shi

Yuan, is an example of a product with involving qualities.

QUALITY 2: ADAPT TO THE USER'S IDENTITY

People use physical objects to express themselves; therefore, these objects have to communicate identity (Hassenzahl, 2003). Research on emotional attachment also showed the importance of self-expression and group affiliation (Mugge, 2007).

In order to achieve an enduring experience, the product should still communicate the owner's identity after a few years. This usually means that the product has to adapt over time. After all, one's identity and its context change over time as well. Rimowa suitcases (www.rimowa.de) are an example of how a product could slowly adapt to the user's identity. The dents and stickers represent the journeys of the owner. Buying the exact same product in the store is not possible once the suitcase has been used a few times.

QUALITY 3: ANIMACY

The German language has a good word for this attribute: *Beseeltheit*. Literally it means the degree to which the product has a soul. It is believed that the stronger this feeling is, the more likely it is that the user will cherish the product.

The product quality animacy can be found in vases designed by Hella Jongerius. Many mass-produced products clearly look as if they are made by a machine, giving them a lifeless look. By deliberately adding mistakes to products, Jongerius battles the smooth perfection of machines and tries to give products a soul via individuality (Boom & Schouwenberg, 2010).

QUALITY 4: EVOKE MEMORIES

Products can evoke memories (Csikszentmihalyi and Rochberg-Halton, 1981). When the product instills more and/or stronger memories people are more likely to keep the product for longer (Mugge, 2007; Schifferstein & Zwartkruis-Pelgrim, 2008). It is clear that this works for heirlooms and toys from one's childhood. Embedding this product quality in new products is difficult, but some of the previously presented design strategies give examples of how this could be done. A product could for instance carry

metaphors from the past (Van Hinte, 1997), like the Tivoli radios.

QUALITY 5: REWARDING

A product-person relationship is durable when it is rewarding (Russo Rodrigues, 2010). Mutual altruism could support the building of a relationship with a product. For example, some people like to polish their car for hours and enjoy the resulting look of the car and the attention they get from other people.

CASE STUDY

The application value of these five product qualities was explored via a case study. A water kettle was chosen to be the subject of the case study for several reasons. Firstly, many of the examples in the literature on this topic are specialist, high end or craft based products, so to add some realism and relevance to a company such as Philips, a mass produced household product was selected. Secondly, it had to be a product that people would use daily. To make such a long term study as effective as possible, a daily use product was preferred. Thirdly, the product must not be too complicated. This made it feasible to eventually build a fully functioning prototype. A kettle fitted these requirements perfectly.

IDEATION

The ideation process started with observing kettle users. This was done to identify relevant interactions and experiences with this product. During the ideation process ideas were generated, inspired by the previously presented design strategies as well as the five product qualities. Specific interactions and experiences people could have with a kettle were linked to the five product qualities, for instance, by asking questions such as: "How could the kettle remind the user that the water is ready in a way that remains involving?" Or: "How could the kettle be perceived as having a soul when the user spots it while walking through the kitchen?" Such questions were answered using sketches, resulting in new concepts for a kettle.

Ideas were scored on the five product qualities and one of top ideas was a rotating kettle. This kettle can express itself by revolving around its own axis. When applied carefully, the rotations could give the user the feeling that the kettle has a soul (animacy). They offer

the possibility to make the experience involving. Furthermore, the rotations of the kettle could become dependent on the identity of the owner.

EXPRESSIVE BEHAVIOUR FOR ATTACHMENT

The success of the rotating kettle depended on the type of rotations and their timing – in other words, its expressive behaviour. Products showing behaviour induce the perception of having a personality (Meerbeek et al., 2008; Reeves & Nass, 1996). All behaviours of the product should fit within the same personality. This will make the personality more understandable for the user and increases the degree of animacy associated with the product. For the design of a personality for the rotating kettle the method by Meerbeek & Saerback, 2011 was used.

THE SNEAKY KETTLE

The personality devised was a sneaky kettle which likes to play and party, but knows this is inappropriate. After all, he was produced to boil water and not to have fun. However, after the user has given attention to the kettle, he gets all wound up. He will restrain himself as long as the user is still around, but when he spots no movement anymore, the kettle sneakily starts moving. As the kettle gets to know the user, he will become bolder. The user may find this charming at first, but will be agitated eventually. At this point, the kettle becomes distant again, and will only rotate when the user is gone. This behaviour aims to involve the user more with the product. The character and the corresponding rotating movements should give the user the feeling that the product has a soul: animacy. For the prototype this behaviour is built up over a period of two weeks, because of the duration of the test with this prototype (see next section). When not restricted to a two week period, the timeframe to build up the tension can be stretched.

As soon as the user finds out that the kettle can rotate he will try to discover additional things the kettle can do. This kettle also shows movement when you pick it up randomly (as long as it is empty). This is something a user would typically share with visitors, increasing the involvement with the product. When picked up randomly, the kettle will sneakily move if it thinks you are not around anymore. After having been picked up a few times, the kettle will notice someone is trying to fool him, and it will stop moving.

EVALUATION

TEST SET-UP

The sneaky kettle prototyped and was tested in an evaluation study. Ideally this evaluation would demonstrate whether the emotional bond with the sneaky kettle was enhanced with respect to a regular kettle. However, the establishment of an emotional bond is a long-term process (Russo Rodrigues, 2010). The timeframe of this project did not allow for such a long term test.



Figure 1. Overview of the user study

Although it could not be proven that applying the product qualities for emotional durability would actually lead to an enhanced emotional bond, it could be tested to which degree the sneaky kettle was perceived to have the intended qualities. Furthermore, feedback regarding the prototype, and products showing expressive behaviour for attachment in general could be obtained. Hence, the aim of the evaluation study was to answer to following research questions:

- The product qualities 'involvement' and animacy were applied in the design of the sneaky kettle. To what degree can these emotionally durable qualities be recognised in the product?
- What is the attitude of people towards products that display expressive behaviour?

The kettle was tested by a Dutch couple, aged 60+, in their own home. The goal of the test, however, was not made clear to the participants so not to lead their expectations and invalidate the study. The study began with the participants using a regular baseline kettle for 12 days. Their experience was elicited through a semi-structured in-depth interview. This retrospective approach was chosen over a diary study approach, because the act of thinking and writing about their actions would rationalize the experience

with the kettles. This would have potentially interfered with the product quality 'involvement'.

After this baseline study the regular kettle was replaced with the sneaky kettle. This sneaky kettle was a modified version of the regular kettle. The only difference was that it showed a sneaky behaviour. After 12 days, the couple's experience with the kettle was again elicited through a semi-structured in-depth interview (Fig. 1). Furthermore, the concept of products showing expressive behaviour for enhancing the emotional bond was discussed with the couple.

RESULTS & DISCUSSION

The test with the regular kettle was completed without any problems. However, the test with the sneaky kettle was less successful. The sneaky kettle started showing its behaviour through rotations after two days as planned, but it stopped its expressive behaviour after four days. Nevertheless, some findings were still obtained from the study.

The interviews gave a first indication that the experience with the sneaky kettle was more involving than the experience with the regular kettle. The experiences the participants told about the regular kettle took place during the first two to three times the product was used. The stories about the sneaky kettle, on the other hand, were much more evenly spread over the testing period. After the first movements of the sneaky kettle, expectations were set. The participants expected the kettle to move once again and started paying more attention to the product. They were so curious to re-experience the effects that they altered their behaviour slightly. For example, they boiled more water and drank more tea than usual. The kettle did not rotate anymore. Instead of using a dynamic behaviour to make the experience more involving, the participants were kept curious because the kettle did not do anything anymore. It shows how a product could remain involving by showing something unexpected every once in a while. A longer test would be needed to prove whether the sneaky behaviour of the kettle is not just a gimmick that wears off over time.

Although some signs of the quality involvement could be found, the interviews indicated that the participants did not recognize the animacy quality in the sneaky kettle. This may be explained by the fact that they did not see enough movements to recognize a personality

in the behaviour of the kettle. The participating couple were not opposed to the idea of products having expressive behaviour for enhancing the emotional bond. However, it appears through the interview that this behaviour should be applied subtly:

“...if all products on the kitchen top start to move, you will get crazy. I am always a bit careful with this kind of things. It should not become too much.”

The couple also seemed to tell that the behaviour of the product had to be useful for them, besides just evoking emotions. Similar to what was found in previous research (Dautenhahn et al., 2005), the participants favoured personalities and behaviours with the notion of an assistant. They liked to see an anticipating and a reliable personality in a product.

GENERAL DISCUSSION

The sneaky kettle case study provides an example of how designers can develop an emotionally durable product based on five product qualities for emotional durability. More specifically it shows how a product with behaviour could contribute to the emotional bond between the user and the product. However, the sneaky kettle's manifestation seems to be too extreme. A first exploration in practice has shown that users are not opposed to products with expressive behaviour for attachment. However, the expressive behaviour should not only enhance the emotional bond – it should be useful too. Future case studies are needed to provide examples of emotionally durable products that will be accepted by users.

The five product qualities for emotional durability presented in this paper can be a useful tool for designers. However, as we both formulated these qualities and applied them ourselves, future case studies with other designers are necessary to explore how these qualities can enable and stimulate designers to design for emotional durability. Products designed with the five qualities for emotional durability in mind, can be inspiring for users. They will hopefully realize that products are not necessarily functional pieces of plastic and metal that can be easily discarded. They can be cherished, and taken care of too.

FUTURE WORK

Work into emotionally durable design will continue at

Philips in conjunction with TU/Delft under a Dutch National subsidy project titled *Products that Last*.

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