MODELLING OF MEMORIES THROUGH DESIGN

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ABSTRACT
This article explores how to design for product longevity. The design approach *Contexts of Experience* (COE) makes the basis for this interdisciplinary study which combines research on consumer-product attachment (CPA) and related psychological mechanisms, design and design practice.
The conceptual design approach COE was explored through a case study with student projects on master's level in product design and interviews. One specific project namely the "Spa radiator" that to a great extent infused various experiences as part of the product made the main subject for this study. Through the case analysis done by concept mapping, five different *Levels of Activation* (LoA) were disclosed: cognitive, motional, relational, perceptive and imaginative.
The activation dimension identified is argued to have emerged primarily through the process of making experiences for different contexts of use and the awareness of psychological mechanisms, facilitated by the COE approach. The COE approach seems therefore to contribute to the making of products that facilitate the modelling of memories and associations through user activation. As these emotions and thoughts are potentially tied up to the product it seems essential to create functions that elicit different levels of activation in order to design for product longevity and hence the environment. Memories can furthermore contribute to the commercial value of products since the experiences they elicit are closely tied to brand value. The LoA is therefore suggested as an analytical and creative tool in order to evaluate the ability of a design concept to stimulate CPA, in addition to the COE approach.

Keywords: Product longevity, product attachment, activation, sustainability, design and psychology

1 ACTIVATION

Aesthetics has a glorified status in design education and practice in relation to why people like products and why they choose to hang on to them. Typical reasons given for why a product remains a favourite and perceived meaningful are related to memories and relational events that have been experienced with or activated by the product. Activation elicited by products therefore influence peoples the degree of feelings of attachment towards a product and following how long they wish to keep it.
Designers can contribute to the environment through making long lasting products. However people replace high quality products, working according to functional needs, out of emotional sentiments [1, 2]. The joyful feeling evoked by owning products purchased partly out of the desire of feeling pleasure [3], drains quickly and interest for new products therefore build up [1, 2, 4]. The perceived qualities of the next generation product overpower the ones of the existing ownership through experience of that everybody else has one, increased technical functions and innovative aesthetical qualities etc. Such premature product replacements are generally unfavourable for the environment [2].
This paper introduces how designers can activate people by design through the design approach "Contexts of Experience" [5] and by such activation influence the product replacement rate. The COE makes use of strategies to elicit CPA through knowledge about psychological mechanisms and awareness of the potential of designing experiences for different stages of an ownership [6].
The study explores and describes the process of the: interdisciplinary cooperation that made the premises for making the design approach COE. Secondly how this research design can give new insight both to design and pedagogy theory, in relation to research based education, creative self-efficacy, motivation and project relevance by the involving of student practice in the research, and possibly psychology. Thirdly how the COE in practice facilitates the making of experiences and concepts. Fourthly how the concepts that were created with the COE make the grounds for products

that elicit user activation and consequently the making of experiences and memories related to the product.

1.1 Making attachment with the Contexts of experience

The degree of CPA can be understood as the strength of the emotional bond a consumer experiences with a durable product [7]. Research on CPA has engendered several strategies on how to strengthen the feeling of attachment towards a product. These strategies can serve as design parameters for the designer. Examples on such strategies are: product personalization [2, 8], "Do it yourself" products (DIY) [8, 9], "do it with others" (DIWO) [9], products serving as objects of transition [9], products believed to be scarce [10], products that are owned together with other people [7, 8] i.a. Except from studies on DIY products and partly product personalization, most of the research that has engendered the CPA strategies involves people's relation to existing products. Yet how to make products that will elicit feelings of attachment is an area that needs more research.

In order to bridge the gap between the dimensions of knowledge about CPA and the making process of products that elicit feelings of CPA the design approach "Contexts of Experience" (COE) [5] was developed in cooperation with a psychologist specializing on persuasion psychology (Figure 1.). Design approach in this context is understood as a technique that facilitates a designer to define project specific design parameters. The COE approach is meant as a non-hierarchic design process in the meaning that it does not suggest where to start nor a sequence of use.

The design approach COE was developed to enable designers to create long lasting products through influencing, changing and establishing of consumer habits and behaviour. The task to design experiences for the different contexts during the different stages of an ownership makes an essential dimension of the COE in relation to effect and outcome [6]. The approach is meant to enable the making of experiences for the various contexts in which the product is perceived with the help of awareness of psychological phenomenon and CPA strategies (figure 1.). Additional emphasis is put on the making of the product characteristics that facilitate different experiences during the ownership.

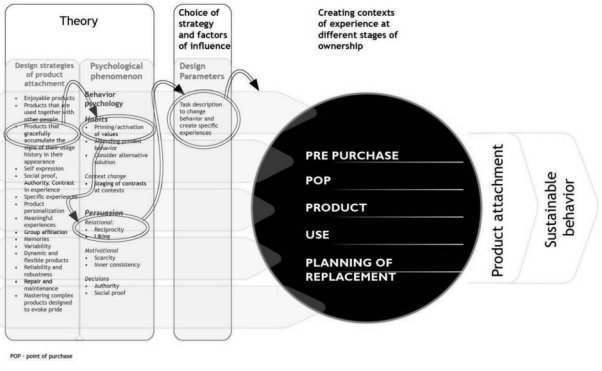

Figure 1. "Context of experience"

2 METHOD AND EPISTEMIC POSITION

The aim of this research was to disclose an approach on how to design emotionally durable products. The research question; "how to design for product longevity?" and the design approach COE emerged through interdisciplinary cooperation between a psychologist, designer/design researcher and design students.

The finding of the five different levels of activation emerged through a case analyses. A number of aspects in this research pointed towards case study as an apt method; the interdisciplinary nature and consequently plentiful dimensions represented and the formulation of the research question starting with interrogative how which implies that findings disclosed in this micro perspective might be valid in other and broader contexts (Maxwell, 1996; Yin, 1984).

In order to explore and adjust the COE design approach, master's students worked with developing product concepts by the use of the approach for six weeks. Hands on work, design skills and knowledge of construction, aesthesis, materials etc. made the analysis and modification of the design

approach possible. Hence in this specific context it was an imperative to make or design in order to understand and develop new knowledge, a research design inspired by the knowledge production system of "mode 2" [11, 12]. This experiment based research can both give insight to and the disclosure of techniques for how to design for product longevity as well as tendencies of behaviour possibly generic across cultures, which therefore might be of interest for social psychology in addition to the design research field. This represents an aim characteristic for the mode 2 approach.
The following case analysis was performed by the categorization of different activating factors based on possible stimulus and associations that the case concept could elicit. This analytic approach builds upon the *learning theory* from social psychology by Fishbein who proposed that "implicit (evaluative) responses become associated with a given stimulus object" and following that "according to the mediational conditioning principle there will be a tendency for this implicit response to become associated with the" [13] object itself. Consequently "when the new association has been learned, any other stimulus frequently paired with the object also has a tendency to elicit a positive mediating response" [13]. Thus when an object elicit stimulus, the connected associations will establish the opinion of the object, within this theoretical understanding. Furthermore the responses or associations connected to a product will influence the opinion of the whole product concept.
Achieving positive associations connected to products and brand is a typical part of a marketing strategy [14]. This research design was therefore believed to engender findings that combine factors for why people like products, why they choose to stick on to them and the possible commercial potential they might embody.
The above described analysis performed on 30 student project reports disclosed a tendency of user activation as a product characteristic infused in products that were designed by the use of the COE approach. The component of activation was further broken down into different levels through mapping the different activities that the one specific Spa-oven case project could elicit or demand.
For reliability and validity purposes the finding was further explored by discussing the levels of activation up against branding, design and psychology research, a study of explicit importance for this case study since it is mostly concentrated about a single student project. It is also of significance for the subsequent aim for this research, namely to disclose new factors that influence feelings of attachment towards a product of general character.
The empirical data in this case study did also consist of semi structured interviews performed with the students after the course was completed.
The research is based on the assumption of that people will keep their products longer if they are emotionally tied to them. The disclosed dimension of activation is argued to influence towards strengthened CPA, nonetheless a more elaborate assessment of the effect of these activations is suggested in order to strengthen the validity of the finding, however this is beyond the scope of this article.

3 CASE: SPA RADIATOR

Master's students were given the task to perform any design project but to use the COE as a design method in order to explore the usability of the approach and possible tendencies in the outcomes.
One student chose to design for an active experience of a radiator for home use (Picture 1&2.). Her process became focused towards heat in relation to pleasure as in situations of spa and relaxation. One of the ideas that emerged from this process was to include stones that could hold heat for some time, as instruments for massage and relaxation. She explored out her ideas by testing the experience with the stones alone with different people, without mentioning the radiator context (Picture 1.). As a result of the positive response of these tests, the stones became the main element in the student's further planning of the experience for the contexts of Pre-Purchase and Point of Purchase (POP) as well as for the Use phase (Figure1. & Picture 1.). Pre-purchase situations were suggested to activate and involve potential customers through prompting the possibility of: "bring nature home" through active marketing by priming [15]. If the customers lack a collection of stones before the situation of purchase, the concept offers the possibility to buy different stones with special shapes, materials and colours even though her main idea was for the user to collect stones.

4 LEVELS OF ACTIVATION (LOA)

Analysis of the student projects disclosed a tendency within the concepts to have an infused dimension of activation. The Spa-oven project by Siri Persen was chosen as a subject for further analyzes in order

to get an overview of the kind of activation the product might elicit through the stimuli and experiences it was intend to create. This additional analysis disclosed five typologies of activation namely: cognitive, motional, relational, perceptive and imaginative level (see figure 2.). The words written in italic in the text below, which describes the levels of activation identified, are situations that resemble with various strategies of CPA.

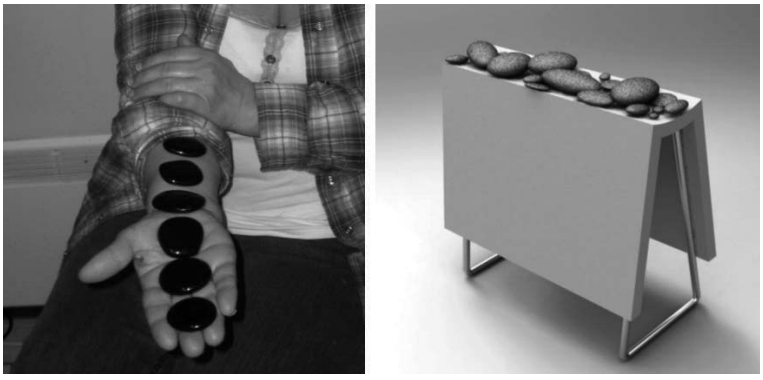

Figure 2. (left) Testing experience with heated stones, (right) Spa radiator, Siri B Persen

4.1 Cognitive activation

The Spa radiator represents an open ended concept in the sense that it offers the function of heating not only the air in a room but also any object. The concept presentation by the student illustrates for example a cup of coffee that is kept warm on the Spa-oven top. Hence the product opens up for different ideas of use in relation to a traditional radiator that might motivate towards the making other contexts of use.

The spa functions of the oven demand collecting and the selecting of stones. When gathering the stones one have to consider what the appropriate stone might be, thoughts about the stones ability to accumulate heat, or how it feels in contact with the skin, if it fits in-between toes, its colour in relation to the radiator and perhaps the interior in general, how some specific stones can contribute to new use and so forth, might emerge. When home the user will have to apply the stones on the radiator, an activity that demands *personalization* [8] through compositional or aesthetic considerations in relation to colour, surface etc. as a *DIY activity* [7-9]. These thinking processes caused by the product are recognized as cognitive activation.

4.2 Motional activation

The act of collecting stones is a typical leisure activity. The lack of anything to do with the stones when you come home is as characteristic as the act of gathering. The Spa radiator does offer a context that makes an easy access activity meaningful through the necessity of stones for the radiator to work properly. The; bring -nature-home concept suggests various facets of physical activation or *effort* [9, 10] like the searching and carrying of stones on the beach, in the forest and civic areas as well as for the massage itself. This activity is recognized as a motional activation.

4.3 Relational activation

The concept suggests future customers to be activated not only in the *planning* [7] of their own product but also to *personalize* [8] the coming purchase by the collecting of stones of unique interest, perhaps by *including* family and friends in such *DIWO* [7, 9] activity. The concept holds the function of gathering several stones in a textile bag in order to be used in the bed as a “hot-water bottle” allowing for example a parent to comfort its child [10]. The thinking processes mentioned above are natural to do in *cooperation* [9, 10] with others and can be used with the intention to enable communication and content for a family excursion when planning a meaningful experience. The spa function does in some cases demand more than one person in order to for example place stones on someone’s back. These events are recognized as relational activation.

4.4 Perceptive activation

The connection between nature or outdoor, material and individuals also involve perception directly through the scents in nature or underneath an interchange junction, sweat by walking and the texture of stones i.a. Heated stones as part of massage for *pleasure* [3] and rest imply direct skin contact with the objects on different parts of the body. The different handling of the stones like for example the act of gathering them in a "hot water bottle" makes sounds when the stones bump onto each other, each mineral making its own tone. The awareness of the spa function will logically involve thinking about perceptive qualities that the stones embody when collecting or choosing at point of purchase. If the customers have no collection of stones at home before the purchase situation, the concept includes the possibility to explore and succeeding to purchase different stones with special shapes, materials and colours that the customers can choose between at POP. This facet of product use is recognized as perceptive activation.

4.5 Imaginative activation

Planning [7] the outer aesthetical qualities of the oven through the *personalizing* [8] option motivates imagination which can strengthen CPA [7]. The horizon of possible other wants and needs that can be included in the spa concept over time. The use of stones might for example stimulate towards thinking of wanting to actually go to a massage parlour or wanting to travel to warm place etc. Such thinking and the above described activities can be regarded as a *safe haven* or *object of transition* [9, 16] in e.g. turbulent situations. This process is recognized as an imaginative activation.

5 MODELLING OF MEMORIES THROUGH LOA

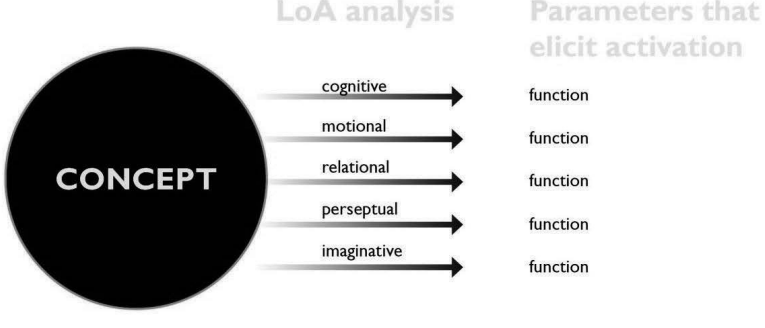

Figure 3. Tool for analyzing what levels of activation a product concepts might contain

The Spa-oven involves user activation. Research on DIY and DIWO processes involve activities like adding, breaking, tuning, making user modifications public to other users i.a. [9]. Such willingly or even enthusiastically performed efforts stimulated by products have significant synergies for the people involved in relation to elicited experiences, associations provoked by the entering of various contexts, feelings of mastering, perceived societal position, increase of network and view upon meaningful being [9, 16, 17]. Hence the stimuli that the product elicits motivates the "live creature" [18] as Dewey termed it to actively create its own experience. Furthermore the object also becomes enlivened by activation and experiences associated with the stimulus object, which in this case is the Spa-oven, as in accordance with the Fishbein's *learning theory* [13]. Thus if the experiences are considered valuable so is the product. Over time these happenings become memories, a situation known to stimulate consumer-product attachment [7]. Relational activation and a growth of network involve interaction and cooperation which stimulate situations of fellowship [10]. The product represents in such a context a social touch point [9, 19].

Memories of salient happenings are thus of importance when it comes to how a product is valued, separately of the brand, aesthetical qualities and physical robustness. The desire for short term blissful experiences through shopping where you can find novel and fresh replacement alternatives, is in other words related to the degree of how the product one already has, is "enlivened" [18] by the owner. Memories and history can only be linked to a product through use, a dimension that new replacement alternatives do not have. It is therefore reasonable to claim that a product that elicit activation and

therefore stimulate the modelling of memories contribute to cool down the replacement rate. Moreover the LoA can be used as an analytic tool in design education and practice in order to explore how a concept performs in relation to consumer attachment and product longevity by recognizing what levels of activation the product potentially elicits (Figure 2.). It seems reasonable to think that the number of levels active in a product concept and the experiences it will create is related to the degree of attachment.

6 FINAL REMARKS

Five facets of user activation have been disclosed through the exploration of the design tool COE in practice and by the analysis of the Spa-radiator concept. Furthermore the Spa radiator case suggests that it is possible to design different experiences for different stages of an ownership. Consequently it seems that the COE approach can facilitate the making of, or the modelling of, associations and memories that connect to a product which again can elicit feelings of attachment towards the product involved [13]. Thus the five levels of activation might serve as new strategies to attain consumer product attachment and moreover strategies on how to make long lasting products.

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