EXPERIENCE DESIGN TOOL: ENCOURAGING DESIGNERS TO CONSIDER DIFFERENT DESIGN AND EMOTION STRATEGIES

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ABSTRACT

This paper presents an overview of the existing research in the area of design and emotion and the resulting design strategies that have emerged to support it. Design strategies concerning, pleasure, personality, memories and longevity, self-expression, the senses and novelty are discussed. This paper then presents a design tool, called the 'Experience Design Tool', developed by the author, to provide guidance and enhance creativity when considering the emotional aspects of design. The tool, which supports the idea generation phase of the design process, provides advice, product examples and probing questions to encourage designers to consider a number of emotional design strategies to enhance product experience. The aim of the tool is to translate the research generated by the design and emotion community into a form that design students can easily understand and utilise. In order to assess the effectiveness of the Experience Design Tool, it was used within a 2nd year undergraduate product design project. The process of using the tool, together with the feedback from the students on its usefulness, is presented for discussion.

Keywords: Experience, emotion, product design, education

1   INTRODUCTION

An increasingly competitive consumer market has led consumers to expect more emotionally rich product experiences. Designers are therefore being challenged to create products that extend beyond function and engage consumers on an emotional level. As a result, research interest in the area of design and emotion has grown significantly with numerous design strategies and a number of tools and methods being developed to assist with the integration of affective aspects of design. However, despite this growth, the area still faces criticism that it is not providing the design profession with usable design guidelines based on emerging research. There is also criticism that design research is not being embedded appropriately within design education in order to prepare design graduates for the challenge of designing for emotion [1]. An opportunity therefore exists to create a tool that translates the emerging research into a format that designers can understand and use easily. Furthermore, introducing this tool to design students would prepare them for the challenges they will face when designing emotionally rich product experiences.

2   EMOTIONAL DESIGN STRATEGIES

This section will introduce the various design strategies that have been proposed by the design and emotion research community, to encourage emotional consideration within design.

2.1 Pleasure, memories and product narrative

Jordan [2] advocates a pleasure approach to design, encouraging designers to address the emotional needs of their consumers. Four distinct types of pleasure: physical, social, psychological and ideological are used to define his pleasure approach to design. Physical Pleasure relates to the physical body and the pleasure experienced by sensory perception, including, touch, smell, taste and sound. Social Pleasure is derived from relationships with others and is also linked to status and image. Psychological Pleasure concerns people's cognitive (understanding) and emotional reactions. Finally, ideological Pleasure relates to peoples values and beliefs.

Schifferstein [3] also supports a pleasure strategy but further recognises the importance of memories and product 'use', in establishing product attachment. Csikszentmihalyi and Halton [4] investigated consumer's attachments to material objects and also found that memories play a significant role in establishing relationships. They proposed that memories provide consumers with a reminder of who they are and where they have been. Chapman [5] shares this view and proposes 'product narrative' as a design strategy for responsible design, claiming that if users emotionally invest in their products, they create a narrative that encourages them to cherish their products, therefore reducing the over consumption of products. Helms and Leifer [6] propose a similar design strategy called 'Agathonic Design' (synthesized from the Greek words for good - agatha and earth – chtonic) to design objects that improve 'through time' and 'with use'. This strategy, in addition to selecting materials that age well, is complementary to the product narrative strategy as it encourages users to invest time and to physically 'use' their products, in order to gain a perceived product improvement.

2.2 Personality

Janlert and Stolternan [7] were the first to propose a design strategy to embed products with personality. They suggested that people often attribute character to inanimate objects and that a designer could exploit the links between appearances and perceived personality by manipulating the appearance of a product to evoke certain emotions in the user. Jordan [2] and later Mugge et al [8] also saw great potential in personality as a design strategy and created product personality scales to enable designers to profile the personalities of their products.

Govers et al [9], found that designers could embed products with personality in a way that consumers could understand. They further found that it was difficult to differentiate between personalities that were semantically similar i.e. happy and cute.

Desmet [10] explored the possibility of designing interaction devices with different personalities and found that appearance had a more powerful effect on personality than the effect of dynamic interaction. This is similar to how a person's appearance is often used to assess their personality as it allows for quick decision making to facilitate social interaction [11]. Desmet [10] proposed that, perhaps similar to how a person's visual appearance becomes less important as a relationship progresses, so might the visual appearance of products.

Govers and Mugge [12] advanced product personality as a design strategy to include Sirgy's [13] Self-congruity Theory, which suggested that if a consumer makes a psychological comparison, between their self-concept and a product, then their evaluation of that product, would be positively influenced. Sirgy relates this to the human need to express and create a positive and consistent view of one self.

2.3 Personalisation and Self-expression

Based on Sirgy's theory [13], product personalisation and self-expression are also proposed as design strategies to enhance the emotional experience of the user [14]. This is because product personalisation affords the user some control to express themselves through the personalisation of some aspect of the product.

Kleine et al [14] found that people become more attached to products that, in some way, express their personal identity. Mugge et al [8] found that the more effort a person invested in personalising their products, the more self-expressive value the product obtained which led to a stronger emotional bond between the product and the user. In addition, Franke and Piller [15] found that, providing functional quality was not affected, consumers preferred their own aesthetic designs to designs created by others. Contrary to this, Huffman and Kahn [16] argue that endless choices and creative customer freedom can confuse the customer. Similarly, Schwartz [17] advises designers to exercise caution when adopting product personalisation as a design strategy, warning that increased and endless choices can lead to unrealistically high consumer expectations, ultimately leading to consumer dissatisfaction. Dahl and Moreau [18] advise that consumers should be given guidance to ensure they can confidently complete the task of personalisation without removing the feeling of autonomy.

2.4 Sensory and Novelty

A study conducted by Schifferstein and Spence [19] found that stimulating multiple senses created more pleasing user experiences. Furthermore a study, using a split-modality approach, conducted by Schifferstein and Clerin [20] found that vision and touch were the most influencing modalities within product experience. Ludden et al [21] further investigated multisensory experiences and suggested that

in addition to creating coherent messages, this approach could be used to create in-congruent messages in order to evoke an emotion of surprise. She found that surprising products are perceived by consumers to be more interesting to interact with. Furthermore, Ludden et al [21] found that people experience products that are visibly novel as more interesting to products with hidden novelty. Introducing novelty within product design has always been of interest to designers due to the human nature to seek new and unfamiliar things [22]. Whitfield's [23] "Preference for Prototypes Theory" rejected novelty in favour of typicality suggesting that people prefer the most typical examples within a product category. American designer Raymond Lowey [24] introduced the design principle 'Most advanced, yet acceptable' in 1951. He believed that design solutions should not be a vast departure from what has been accepted as the norm. Hekkert [22] studied Lowey's principle and found that, contrary to the 'Preference for Prototype Theory', people preferred products with an optimal combination of both typicality and novelty.

3 EXPERIENCE DESIGN TOOL

The experience design tool was developed as part of a wider research study to summarise the design strategies surrounding emotional design, introduced briefly in the previous section. The aim of the tool is to provide guidance and enhance creativity when design students are considering the emotional aspects of design and is focused on the idea generation phase of the design process. Many design students, although very interested in the topics surrounding emotional design, do not necessarily have the academic interest to read and understand academic journals and papers. If research is to inform design education then research output must be in a form that design students can quickly and easily benefit from. The experience design tool provides design tips, product examples and probing questions to encourage design students to consider a number of emotional design strategies to enhance user experience and encourage product attachment. The Experience Design Tool is made up of ten cards. On one side of the cards is a product example relating to a design strategy, this view of the cards is shown in Figure 1. On the other side of the cards are prompting questions and design tips relating to the strategies described in Section 2. Table 1 gives an overview of the questions and tips included on each of the cards.

Figure 1. The Experience Design Tool Cards (Front View: Product examples)

Table 1. Questions and design tips included on the Experience Design Tool Cards.

1. Can you afford the user some control to personalise the product? Tip: Allow users to feel they have contributed to the design in a controlled way, eliminating negative comparisons and becoming overawed by choice.
2. Can you embed meaning or provide means for memory association? Tip: Let the product tell a story; how it was created, where it has been, what it is for. Consider companionship and social aspects within the design of products in order to encourage emotional investment. Consider ways in which a product can capture memories.
3. Can the user and the product develop together? Tip: Build in the ability for a product to develop, adapt and change as the user does.
4. Can the product have a personality or convey the personality of the user?

Tip: Consider designing products with exuberant personalities as these are often the most desirable and memorable. When trying to embed personality into a product, first, try to visualise the desired personality traits in terms of a human.
5. Can the materials become more desirable with use/time?
Tip: Use materials that are perceived to improve with time and use, such as leather or wood.
6. Can you create pleasure through olfactory, tactile or auditory properties?
Tip: Designing products that engage multiple sensory modalities will create more pleasing user experiences.
7. Can you create surprise through the in-congruency of product properties?
Tip: Consider new materials with unknown or hidden characteristics or new materials that mimic familiar materials. Create unfamiliar product forms or use visual illusions.
8. Can the product facilitate social interaction or group affiliation?
Tip: People become attached to products that symbolise their belonging to a group or organisation. Consider designing products to be shared or used in a social context.
9. Can the product convey the values and beliefs of your target user?
Tip: Afford users the opportunity to express the values and beliefs with the products they own and use.
10. Can you create novelty whilst also maintaining some typical product attributes?
Tip: Typical product attributes allow a user to understand a product and perceive it to function appropriately. Novel features create intrigue and encourage users to explore and interact with a product.

4   TACTILE DESIGN PROJECT

Schifferstein and Cleiren [20] found vision and touch to be the most dominant sense modalities, when considering product experience. These two senses are also the most influential senses in experiencing surprise [21] or in assessing the typicality and novelty of a product [22]. To introduce students to these issues, a project focusing on the tactual aspects of a products design was given to 2nd year undergraduate product design students. Students were provided with the experience design tool to assist them with the generation of ideas. The brief required the students to consider 'haptic' as a design philosophy. Their task was to design a kitchen or homeware product (e.g. tableware) focusing on tactile perception, interaction and experience. Their challenge was to encourage users to interact with their product through touch, either to explore it, or to control the function of it. They were advised that the tactile interaction should enhance the user's experience of the product. This could be by surprising the user, encouraging play or by providing pleasure.

5   PROJECT RESULTS

Many of the design concepts developed by the students responded to more that one of the cards from the experience design tool. For example, the concept shown in Figure 2, an Eggcup, responds to cards 2,6,7,8 and 10. The shell of the Eggcup is slightly textured and resembles a duck egg in colour. The inside of the Eggcup is white with a yellow centre, similar to a real egg. The Eggcup therefore has meaning and responds to card 2 – Meaning and memory. The two halves are held together using magnets, which gives a pleasurable tactile interaction and therefore also responds to card 6 – Pleasure. The Eggcup is also quite surprising as you may not expect to be able to open it to reveal two halves. It therefore also responds to card 7 – Surprise. As the Eggcup opens to reveal two halves it allows the user to share the product with someone so they each use one half. The Eggcup therefore also offers social interaction and responds to card 8 – Social interaction. Finally the Eggcup is in the shape of an egg which is novel but when opened to reveal two halves it appears typical in terms of an Eggcup form and it is easy for the user to understand how to use it, therefore responding to card 10 – novelty and typicality.
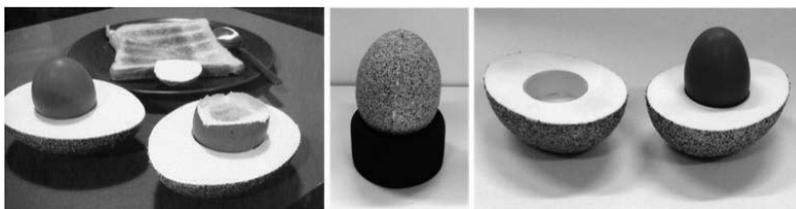

Figure 2. An Eggcup concept designed as a result of using the experience design tool

Two other concepts created, shown in Figure 3, included a dinner set in response to card six - Pleasure and a salt and pepper shaker in response to card seven - Surprise. The dinner set includes a placemat filled with iron filings and magnetized cutlery enabling the user to play with the placemat. The salt and pepper shaker looks like a brass pipe connector however on closer inspection the user will discover the hidden novelty of its real function. The user must unscrew the bolts to line up the holes allowing the salt and pepper to be released.
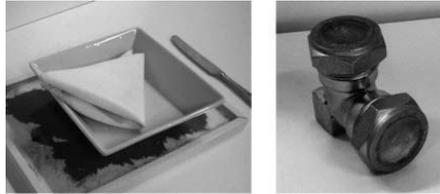

Figure 3. A dinner set and a salt and pepper shaker

6   DISCUSSION

On completion of the project, the students were asked to give feedback on the experience design tool. They were asked to comment on whether they found each of the, very useful, useful or not useful. Cards 1, 4 and 10 were reported as the most useful. Cards 1 and 4 relate to product personalisation and embedding personality. The students had previously addressed both of these issues via previous class workshops. Perhaps the students found these questions more useful due to their familiarity with these approaches. Card 10 considered novelty and typicality, which was a new approach and one, which the students seemed to find very useful. Cards 8 and 9 were reported as the least useful. These cards asked the students to consider social interaction or group affiliation and convey the values and beliefs of target users. These cards were reported as the least useful as the students found these issues difficult to address within the design of domestic products. Perhaps to enhance the usefulness of these cards, further product examples could be provided to show their value as effective emotional design strategies. Overall, the students gave a very positive response to using the cards to enhance their idea generation. The products that the students designed as a result of the project evidenced their effective use of the tool. Furthermore, in an informal discussion with the students after the project, they commented that they would never have considered using the majority of these strategies without the tool. They also commented that they found it helpful to be challenged by the probing questions and that the product examples were useful to put the questions into a context that they understood. They also found the design tips useful to help them develop their ideas.

7   CONCLUSION

The concepts that the students created, in response to the tactile design project were very creative and the students reported that they had never before been challenged to engage a particular sense. Providing the students with the experience design tool afforded them the opportunity to create a wider variety of ideas in response to the brief. Many of the concepts generated, could be aligned with more than one of the cards. The example of the Eggcup presented in Section 4 was described as responding to five of the ten cards. The students voted this concept as the most interesting design. This may suggest that considering multiple design strategies could create more interesting designs and enhanced user experiences.

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