Causes of Emotive Response to Artefacts

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Abstract
Emotions are one important aspect of how we experience artefacts. The question is what influences these emotions? As the first of a series of studies addressing this issue, a Focus Group session has been conducted. The participants were all adult consumers, men and women, in different ages. The topics investigated in the interviews concerned what emotions are associated with artefacts, and what product characteristics may have evoked these emotions, as well as more open-ended questions about other influencers of emotions.
The results were descriptions of situations in which the participants had experienced emotions related to artefacts and the design of artefacts, as well as a list of factors expected to influence the emotive response to products. The results have been analysed in order to describe the source(s) of the emotion related to artefacts, i.e. whether the emotions may be attributed to the artefact or other factors. The participants' comments tell us that the artefact in itself cannot always explain their experiences with products. The activity in which the products are used and contextual factors play an important role, as do the individual characteristics of the user.

Keywords: Affective design, Artefacts, Design, Emotion, Focus group interviews, New product development, User centered design

Introduction

We have entered into the Human Ware Age, an age in which part of the consumers' earlier fascination with technical functions has shifted towards requirements for other and more use related qualities. This means that previous values, such as functionality and cost, have been replaced by other values, such as comfort, enjoyment, and satisfaction (Yamada & Price 1991). Therefore, a product development process which aims at competitive advantage must encompass also affective aspects - how customers feel about the product and about using it (cf. March 1994).

Several authors describe the emotions elicited by products as being one important factor in the relation between man and artefact (e.g. Picard 1997, Jordan 2000, Desmet 2002, Norman 2004). The processes behind these emotional reactions can be of a reflective nature but also a direct reaction to some stimuli (Norman et al. 2003).

Product semiotics may be one way of addressing these issues (e.g. Monö 1997, Warell 2001, Vihma 1995, Wikström 2002). Drawing on communication theory it sees product attributes as signs. The goal of the producer is to load the product with signs, which later can be decoded by the user (Monö 1997). Product semiotics may explain why a product is interpreted as, e.g., expressing 'aggression' but not what emotions this evokes in the user. Even so, the communicative function (Monö 1997) of products may be one important aspect in understanding emotive responses, but it is not necessarily the only one. It can be assumed that users engage in activities involving different artefacts to meet different needs and, according to Desmet (2002), products elicit various emotions as a result of whether it meets the users' concerns or not.

We believe that through studying people's emotions in relation to artefacts we may gain a deeper understanding of the users and their relation to products, applicable in new product development. Are the users' reactions a result of the expression of the artefact? Is it the function of the product that evokes the experience? Are there other factors triggering the emotions?

In order to address the relation between users and artefacts, a focus group session was conducted at Chalmers University of Technology in December 2003. Focus Groups are group interviews, where participants draw on other peoples' statements. Normally, a facilitator moderates the discussions, moving from a general topic towards more specific issues. The purpose of the Focus Group is to get people to reveal feelings and thoughts (Kreuger & Casey, 2000). On its own Focus Groups can be used to explore research questions from the eyes of the participants, as well as to look into unknown territory (Morgan, 1988). They can also be used as a "as a supplement to both quantitative and other qualitative tools" (Morgan, 1988).

The goal of the particular session was to explore what people describe to be the aspects influencing their emotions in relation to products, and further to answer the question: How do people talk about their emotional relation to products?

Method

Altogether six participants were recruited from Chalmers Consumer Group. They were all adults, male (n=4) and female (n=2) with ages spanning from 24 to 81 years. In total the focus group session took one and a half hour. The conversation was recorded on a DAT-recorder and later transcribed for analysis.

The route of questioning followed five stages or steps (for interview guide, see Appendix 1). During the first step, the participants were shown a number of slides with rectangular fields of different colours (red - yellow - blue etc.). They were asked to take turns in commenting the resulting associations. The purpose was to get all participants to talk in order to engage them in the discussions. In the second phase, the participants were asked to think of what emotions a product may elicit, and what products do this. They were asked to first individually list these products on a sheet of paper and then compare notes with their neighbour at the table to see whether they could think of more products that evoke emotions. The results were then discussed in the group as a whole. The products and the emotions were listed on a Whyteboard so that all participants could see them. During the session the participants were given no formal definition of emotion, since we were interested in hearing their stories about affective relations with artefacts in their own words. In step three, the participants were asked to sort a number of products on a scale. Two smilies, one representing a happy face ☺ and one representing a sad face ☹, were drawn on A4 sheets of paper and placed towards different ends of the table. These smilies were used as anchor points for the scale. Participants were asked to place postcard-sized images of different products along this scale depending on how they perceived the product. If the product was, for instance, perceived as 'something very positive' it was to be placed close to the happy face, and if it was perceived as 'something very negative' it was to be placed close to the sad face. In total were18 images of various types of products shown, e.g., tools, a mobile telephone, and a teddy bear. Participants were asked to, one at a time, place an image on the scale and motivate why it belonged there. The rest of the group was encouraged to comment and discuss reasons for agreeing/disagreeing. The participants were then asked to look for patterns in how the images had been placed. With images still on the table and the answers from question two on the Whyteboard, they were also asked to reflect on and discuss what in products evoke emotions. The final part of the session concerned the strongest positive or negative emotion the participants had felt towards a product.

Results & Analysis

How do people talk about their emotional relation to products? In sum, our participants shared their thoughts and feelings regarding products through descriptions of situations. These concerned both positive and negative factors in respect to artefacts and what impact this had on their experiences. The comments included feelings towards products but also explanations. One example is a TV set one of the participants found comforting in that there was always someone there to talk to him.

In reply to what emotions could be evoked by products and what products did this, the participants brought up a variety of artefacts, see Table 1.

Product[1]	Emotions and associations
Mobile telephone	Stress, complicated, addiction, joy, curiosity
Coffee	Warmth, cosy, calm
Tram	Stress, lack of control, uncertainty
Hand tools	Lust, stress, joy
TV	Security, curiosity, stress, relaxation
Car	Freedom, pollution
Computer	Displeasure, joy, lack of control
Train	Relaxation, harmony
Book	
Music	Relaxation
Restaurant	Harmony

Table 1, Products brought up in question two along with the emotions and associations they triggered

In the picture sorting exercise (step three) the participants demonstrated a variety of opinions, see Table 2.

Product	Emotions and associations
Carpet knife	Creative joy, positive
Computer	A good tool
Alarm clock	A good tool for getting up, stress, symbol of time, unpleasant
PDA	Neutral
Statue	Interest, ambiguity in picture
Teddy bear	Joy, calming
Pliers	Joy, security
French coffee brewer	Joy, pause, warmth
Mobile telephone	Curiosity, stress, joy, security, excitement
Sofa	Pause, joy
Deck of cards	Neutral, ambiguity
Tennis equipment	Relaxation
Corkscrew	Joy
Spectacles	Joy, necessity
Paint brush	Joy
Water scooter	Joy
Boat	
Pair of dice	Neutral, ambiguous
Clothes-peg	Joy, fun

Table 2, Products commented in the picture sorting exercise (question three)

In reply to what products the participants had felt the strongest positive or negative emotion towards they brought up: a chess set, a French horn, a sailing boat, a book and a motorcycle. The participants used only a few emotion-words in describing their relation to a product. Table 3 summarises the emotions brought up by the participants.

Emotion	Example of Product	Explanation/comment
Relaxation (including: calm, pause etc.)	**Train:**	It is nice to fall asleep on trains
	Other products:	TV, coffee, bed, teddy bear, Tennis equipment, sofa
Freedom	**Car:**	
Joy (including: lust etc.)	**Tools:**	When I started one did everything by hand. I've built two houses more or less with hand tools and then I got hold of machine tools, drills and drill bits, partly of economic reasons and back then I felt a real joy and that's how I feel today too.
	Other products:	Carpet knife, teddy bear, pliers, mobile telephone, games, spectacles, water scooter, boats, clothes peg, motorcycle, spectacles
Harmony	**Restaurant:**	Restaurants can be quite harmonic
	Other products:	Telephone, music
Saturation	**Newspapers:**	I feel a bit saturated with newspapers, it's kind of too much. One can't really grasp it all. Its too much, one doesn't have time to read it all and then you feel guilty for paying a lot of money for subscriptions although you don't have time for it
Curiosity (including excitement)	**Mobile telephones:**	It evokes curiosity when one waits for it to ring- there can be SMS, its kind of an excitement in the situation. One must, well, be alert, something can happen and as you said fabulous things can happen within this piece of technology
	Other products:	TV
Displeasure (including: irritation, annoyance, disturbance)	**Mobile telephone:**	This shrill noise, it is an irritation and something negative in mobile phones
	Other products:	Computer, alarm clock
Fear	**Hand tools:**	I am afraid that I might shortcut a cable and get an electric shock
Stress	**Telephone:**	At my office there is always a lot of calls, and it may be stressful
	Other products:	Mobile telephone, hand tools, alarm clock, TV, tram
Security	**TV:**	There is always someone talking to you even if you don't reply
	Other products:	Pliers

Table 3, Summary of emotions mentioned by participants along with examples of products evoking the emotion

When asked to suggest reasons for why certain products elicit certain emotional reactions, it was suggested that the following factors play a role: differences between genders, the way the product is acquired, craftsmanship, the quality of the product, aesthetics, price, recognition/ brand loyalty, and novelty. The participants agreed that usage is more important than ownership in their relations to products.

Exploring the issue further, the participants brought up a number of products that evoked emotions and also displayed a variety of feelings for the products shown in the images. Some comments regarded properties of specific products, e.g. colour. Other comments show a concern for factors that are common to a whole category of products, e.g. mobile telephones. Nevertheless, not all comments concerned properties of products. Instead the participants made statements about individual concerns, a number of comments were made about the task in which the product was engaged, e.g. the joy of working with good tools, and in some cases were situational factors commented, e.g. a stressful office environment.

Product

The artefacts themselves generated comments about the product as a member of a category of products and about the product as a specific artefact. Some of the statements concerned general categories of products. An example of this is a picture where *a* tennis ball and *a* tennis racquet are portrayed on a tennis court. Comments about this picture concerned tennis equipment as a general category of artefacts. These were commented as being positive as they allowed one to engage in a leisure time activity. No comments were, however, made about the specifics of *the* tennis racquet or *the* tennis ball. Other comments regarded the specific properties of a product, e.g. the rust on a pair of pliers making it look old. One of our participants commented that his feelings about a picture of a paintbrush varied widely depending on whether he was to comment "paintbrushes" in general or the specific paintbrush shown. He appreciated paintbrushes because they for him represented craft and having something to do. On the other hand, he did not like the specific brush because he believed it to be of low quality, only suitable for certain types of paint. Another of our participants commented that when buying a new mobile telephone, the brand was a central feature. The reasons she gave for this was that it made her feel safe in that she thought she would have control over the interface of the new phone since she expected it to have the same characteristics as her old phone. Overall, being in control seemed to be a central feature in the discussions. The participants came back to this in relation to a range of different products. This was commented in respect to electronic equipment, e.g. mobile telephones and computers, but also in respect to tools and trams. In the case of the trams, one of our participants commented that he preferred these to subways because he could see where he was and was in control over the situation. This may be a quality of the product but also a result of the person's background. The feeling of being in control may be connected to what is recognizable and expected. However, our participants also showed a concern for the

opposite of the familiar, that is novelty and surprises. One participant commented that products that were too common became less attractive. The unknown was also found to be a thrilling and at the same time a stressful factor in relation to mobile telephones. The phone can ring at any point and depending on context and who may be calling, this could be either positive or negative.

Context

In some of the pictures shown the artefact was placed in a context, in others it was not. The context was commented in some cases. A picture of a sofa on a chequered tile floor led to comments not only about the sofa but also about the fact that it seemed misplaced. Another picture described a teddy bear in an armchair or sofa. In this case comments were made about the fact that there was no child in the picture. This changed the emotion associated with the picture from comfort and security to fear. Mobile telephones were found to be stressful in an environment where there is a lot of activity going on, e.g. an office. On the other hand they also represented security in that one could always call for help.

Activity

A lot of comments were made regarding the activity in which the product was used. The participants were of the opinion that there is a strong relation between the activities in which a product is used and the feelings elicited by the artefact. The product in itself has little value unless you use it for something. For instance, one of our participants found the pictures of a deck of cards and a pair of dice ambiguous. She placed both in the middle of the scale in the picture sorting exercise. As a reason she stated that the objects themselves were neutral but that they could be either positive or negative depending on what they were used for. The cards and dices could be used in an activity where one socialised with others, in which case she found them positive. On the other hand, games that were played in solitude were, according to her, something negative.

User

Our participants showed us that there is a range of different reactions to one and same product category. Depending on their experiences they associated different emotions with products. One example is tools, which brought true joy to one person but were associated with fear for another since she was afraid of causing an accident. Another of our participants described having strong emotions towards a chess set. He described how he as young man

used to play chess with his brothers. Playing chess he had managed to do what he could not do in sports, and he became good at it. This person's relation to chess sets was very positive since it triggered memories of being social and appreciated by his siblings. Another of our participants described how she bought a book about Egypt for a gift voucher. She described herself as normally only making rational decisions about what to buy and how to spend her money. The gift voucher meant that she could allow herself a treat that did not have to be justified. Her emotions in this situation cannot be attributed to the product itself but rather to the fact that she could allow herself a bit of luxury. Thus, the emotions people experience seemed tied to an individual in a specific context and it is not likely that other individuals would share the same feelings for the same artefacts.

Discussion

We found in the focus group session that what participants brought up was primarily descriptions of situations; our participants talked about how the artefact used in an activity in a certain context evoked emotions. Only a few of the reasons for experiencing emotions in relation to artefacts were related to the product itself. Nevertheless, these aspects are of particular interest since they are something we can control in new product development. The 'expression' of products is such a factor. Product semiotics may assist us in developing products with a certain expression. We may also address the quality of the products, making products that better fit the users' needs in terms of functions and usability. To do this we need to consider concerns related to the product type, as well as concerns related to a specific solution. The interview demonstrates that users' experience of the product is influenced also by the activity and context in which the product is used, and by individual factors. When developing new products these should all be considered.

It is likely that our choice of data collection method and of stimuli influenced the results; our study used for instance only visual stimuli. This probably means that the comments we gained in relation to the products were of a certain kind. The examples brought up concern strong experiences, what we gain is conscious reflection. We are less likely to be able to capture the direct, immediate reactions to artefacts. Also, since we did not define 'emotions' as such, the statements from the users may not concern emotions in a scientific sense. However, we have been interested in hearing the participants' own comments about their relation with products why their own, less formal, interpretation of the concept is more

relevant. In addition, the limited amount of comments that were directly related to product properties is likely to be influenced by the product representation chosen. In some of the pictures, the artefacts were placed in contexts and the comments made by the participants clearly showed that context play an important role. However, this lead to some confusion among the participants concerning a few of the pictures. The downfall of this is that it is not certain that all images directed the thoughts of the participants to the artefact shown in the picture. Actually, some comments also concerned the image as an artefact in itself. Therefore, it is likely that in future research we will use images without context but also look at other types of stimuli, e.g. real products. Using real, tangible products we expect to be able to shift the focus of the participants from categories of products to properties of specific products.

Furthermore, our focus group was not coherent; the participants came from a variety of backgrounds and different age groups. This was desirable in order to explore the variety of concerns and emotions that people may have in relation to products, though it may have suppressed some opinions. It is desirable to in the future undertake research with more coherent groups.

We cannot make any generalisations based on the results of one focus group. We do not claim to have identified all factors influencing the complex relation between user and artefact. However, the focus group clearly showed us that the participants' relations to the artefact are complex, and apart from the product itself also depend on other factors, e.g. the task in which it is used, individual characteristics of the user and the context of use.

Conclusions
Emotions can be triggered by the properties of a specific product, e.g. bright colours. Users have emotions that are related to a certain category of products, e.g. mobile telephones. However these factors alone only describe parts of the users' relation to the product. The emotions people have to products cannot be attributed only to the product par se. Users take advantage of products in conducting an activity in a context in order to fulfil a need. All these factors affect the relationship between the user and product and have to be taken into consideration.

Future research

This first exploratory focus group will be complemented by more focus groups to confirm the results. However, in order to make good of the results from this first session, some adjustments will be made to the structure of these. First of all, the opening question regarding associations and emotions in respect to colour will be excluded. This worked fairly well in that it got participants to talk, but contributed little information on emotions in respect to artefacts. Secondly, the images used in the picture sorting exercise were of different types, some objects were placed in contexts while others were not. This elicited comments not only about the artefacts but also about the images as such. We are hence not sure how well these pictures represent on the products to be commented. It could well be argued that any picture is at best a representation of an artefact rather than the artefact itself, and this may influence what comments and statements we get. We will instead try to present several physical artefacts of the same type at the same time. By letting participants handle artefacts and compare them to each other, we hope to get comments concerning the properties of the specific artefacts and in what way these properties evoke emotions or not. In order not to loose the general comments about product type, we will however keep the picture sorting exercise in an adapted form, showing drawings of prototypical products. Based on the results of these focus group sessions we will also conduct personal interviews in order to be able to compare the comments and statements of different persons.

Footnotes

[1] All translations from Swedish to English are made by the authors

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Appendix 1: Interview guide

0. Introduction to the session
1. What are your spontaneous associations with these colours?
2. Think back on a situation where you experienced a strong, positive or negative, emotion caused by a product. Describe both the product and the emotion. Please discuss this with your neighbour at the table.
3. Take turns to placing cards along the scale ranging from something you perceive as positive to something you perceive as negative. Please also state the reason for your feelings. If you agree/disagree with the positioning of a card please comment this.
4. Why are the cards that are placed towards the positive end of the scale placed there? Are there any motives that reoccur in the explanations you have given? What are the underlying reasons for emotions in relation to products?
5. What is the strongest, positive or negative, emotion you have felt in relation to a product?

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