Product Semantics & Attachment

How design can encourage happy long term relationships to products.

Pål Bierman Jørgensen
Department of Design
Norwegian University of Science and Technology

ABSTRACT

People are consuming physical products at a rate that is unsustainable, and own products which they do not necessarily gain positive and meaningful attachments to. This article is a literature review that examines ways in which product design can combat the trend towards high consumption of goods. It explores ways in which long-lasting products with a continuing high perceived value to its owner can be designed in order to generate a strong feeling of attachment. Well designed products can encourage long-lasting attachment if they generate pleasure and happiness. A discussion and exploration of the influence product semantics has on a person's attachment to products is also presented.

1.   INTRODUCTION

We live in a world of overconsumption [1], and we are using up the physical resources this planet has to offer. However people wish to own products to increase their physical and mental well-being. This offers a challenge when products are not made to last, and sometimes designed to fail [2].

It is postulated that the lack of strong emotional bonds between product owners and their possessions, is one reason why objects are prematurely discarded [3]. However, designers have the opportunity to give products longer lives by designing for deeper person-product connections [4].

Product attachment is defined by Schifferstein and Zwartkruis-Pelgrim as *"the strength of the emotional bond a consumer experiences with a product" [5].* This attachment is influenced by product semantics, and is defined by Krippendorf and Butter as: *"the study of the symbolic qualities of man-made forms in the context of their use and the application of this knowledge to industrial design" [6].*

This article is a literature review of the topics: happiness, perceived value, product semantics and attachment, and attempts to give the reader a better understanding of the field. The article then goes on to discuss if/how the knowledge about attachment can be used in a product design setting to make people happy about owning their products for a longer period of time.

The research previously done in the field of attachment has had a focus on emotional bonds with products. This article will focus on how product semantics influences the relationship between a person and a product.

Having feelings of joy, satisfaction or well being are important because happiness is a human concern [7]. Some products can evoke such feelings. With the goal of reducing the world's resource

consumption one can argue that this should be done in a way that avoids conflict with people's concerns if one wishes to create products and practices that are easily adopted. One way to reduce consumption is to keep products for a longer period of time, and in this way reduce the need for new purchases. If design wishes to cater to human concerns, and make meaningful products that are meant to be kept longer, it is important that products continue to make their owners happy.

2.   RESEARCH METHODS

The research for this paper is based on a literature review of books, articles, and other content such as videos (talks/lectures) that are related to the topics presented. In addition, general searches around the terms Happiness, Emotional Design, Attachment, Ownership, Product Semantics, and Perception of Value have been used to explore the topics further. The material has been used to present and explore ways in which we can start designing to meet the concern of happiness in order to aid the need for sustainability.

It is important at this stage to acknowledge that there are limitations to this article. Although most of the sources used for this article can be considered new, some are not. If no other sources of information are available the older information is presumed valid. Much of the material for this article has been found through secondary sources and verified in the original source material, often through tools like Google Scholar. The discussion and analysis of the content is however original, and while not attempting to give an absolute answer, presents an interpretation and discussion of the topic thereby offering suggestions to the field of product design.

It is relevant to note that the author of this article is a product designer by profession, and has chosen this field as scope and focus for the topic. Therefore preference has been given to research that relates to the influence of product design.

For the purpose of this article what is meant by the term "products" are designed objects, produced by labour, that are made to be interacted with by people.

3.   RESULTS

3.1 - Happiness

In ancient Greece happiness, or eudaimonia, is considered to be the basis of a good life and a life well lived [8]. Happiness is the experience of joy, contentment, or positive well-being, combined with a sense that one's life is good, meaningful, and worthwhile [9]. The level of happiness a person feels is therefore determined by a person's disposition to frequently experience positive emotions, and seldom experience negative emotions [8].

The taxonomy of human concerns by Ford and Nichols states that an affective human goal/concern is to be happy [7]. By this they mean happiness as experiencing feelings of joy, satisfaction or well-being and avoiding feelings of emotional distress, or dissatisfaction.

People want to be happy, because happiness is a factor of well being and living a good life. Happiness occurs through frequency and not intensity of positive emotions. Therefore one can say that designing for happiness goes beyond merely hedonic entertainment that might put a smile on your face and make you feel happy for the moment [8]. From a societal perspective, one could argue that today's modern western society promotes happiness, but also deprives people of it. In contrast to traditional values, people are today encouraged to place a high value and importance on themselves, to maximise their self-esteem [8]. The statement that happiness correlates with self-esteem supports the idea that a society that encourages high self-esteem also promotes happiness [8]. The individualist norm of today offers people the political and the social freedom to follow their dreams and inner desires to an extent that is unique in human history [4]. This freedom to `be oneself´ also promotes happiness in the context of modern western society. In addition it has been argued that people need a certain level of material wealth in order to be happy [8].

People are not just more happy with their lives, they also care about happiness while using products in daily life. If they are satisfied and happy with a product they often wish to maintain the frequency of happiness this can bring. This happiness and satisfaction may result in keeping the product longer. So if people are happy with

their product they will also look after it, and possibly even repair it if it breaks [10].

Daniel Kahneman elaborates somewhat on these ideas of happiness, and makes a distinction between happiness coming from the experiencing-self over time, and the satisfaction and happiness one can feel while thinking about life [11]. This notion is the driver when talking about attachment to products because the experiencing-self creates the memories. Taking this view, the concern for happiness may give an incomplete picture of the situation. It may be that long term satisfaction is a stronger determinant in encouraging people to keep their products longer.

Satisfaction on a customer level of approval is given when comparing a product's perceived performance with a person's expectations [9]. Satisfaction can also refer to discharge, extinguishment, or retirement of an obligation to the acceptance of the obligator, or fulfilment of a claim. While satisfaction is sometimes equated with performance, it implies compensation or substitution whereas performance denotes doing what was actually promised [12]. But satisfaction may not be enough when it comes to owning products over time. The Kano model [13] tells us that different product attributes move over time from being exciting and delightful to being perceived with indifference. If people are only satisfied with their product they might be inclined to keep it for longer, but might also fall pray to the joy of shopping and buying new.

Everything we think and do is embedded with emotion [14]. Emotions makes us act. In this way emotions guide us away from bad, and towards good. Products have to meet people's emotional needs, while still perform their intended functions [14]. In this way Norman focuses on the experience and psychology behind interacting with a product. He states that the experience had is happening at a Visceral, Behavioural, and Reflective level [14]. The Visceral and Behavioural levels of processing are both subconscious, but of the two the behavioural is concerned with the automatic use of products. This in turn is what can become attachment, through use of a product over time [14].

In his TEDx Desmet talks about design for happiness and what makes people feel good [15]. Typically one can say that the design of a product makes people feel good because it solves a problem. All the products, technologies, and services people are surrounded by do have an impact on people's emotions and even unremarkable products can make a person feel good. The majority of emotions people have towards a product are positive, so one can say that design makes us feel good. But those emotions are not sustainable because once a problem or a threat is solved a person adapts to this new situation, the problem becomes a standard and the positive emotions are gone [15]. So solving problems or redesigning the world has no sustainable impacts on a person's happiness. The key to happiness is what a person does in the given context, not the design of the circumstances [15]. Products should inspire to engage in activities that make people happy. Those activities can be talent, skills, contribution or pleasure which should not conflict with personal values. In Desmet's words, design has to be a beginning, not an endpoint, designers have to find how to inspire, design is an act of love [15].

Lionel Tiger divides pleasure into four categories – physio-pleasure, socio-pleasure, psycho-pleasure, and ideo-pleasure [16]. Physio-pleasures are bodily pleasures derived from sensory (touch, taste, smell) organs [16]. Socio-pleasures arise from relationships with other people or society as a whole. Social people need pleasures to avoid discomfort of not being socially accepted [16]. The psycho-pleasure plays a role in people's cognitive and emotional reactions. Jordan [16] groups usability as a product property that is connected to psycho-pleasure. Poor usability can cause annoyance, frustration and stress. Lastly Ideo-pleasures relate to people's values, and they are connected to personal aspirations and moral values.

3.2 - Perception of Value.

"Value is the consumers overall assessment of the utility of a product based on perceptions of what is received, and what is given"[10]. The perception of a product's value to a person often comes through memories and experiences had with the product.

In marketing there are four elements of perceived value: quality, price, service, and image [17]. Those elements are interdependent and influence each other. A repeated experience supports a high perceived value and enhances the brand over time [17]. *"A user's perception of value represents a tradeoff between the quality or benefits they*

perceive in the product relative to the sacrifice they perceive by paying the price" [18].

The quality and benefits of the product have to be perceived higher than the sacrifice of paying the price. This is the perceived value one has towards a product pre-purchase. Since the benefits of buying a product of high quality often show themselves over a longer period of time, the challenge often lies in convincing the consumer to buy the product at a higher price. The sacrifice is immediate, while the benefits become evident later. The attachment to the product is therefore built on the benefits, and positive experiences with the product. [3]. The function and durability of a product can also create value. Products that do what they are supposed to over and over again are prone to create a connection to the owner [10].

People value the benefits of the product more than its function while making a purchase. The product's perceived value often deals with abstract cost, not the actual price. This perceived value is the relationship between the perceived cost in terms of money, time and labour, and the the perceived benefits on the physical, logical or emotional level. Typically a customer will buy the product if the benefits outweigh the costs. This gives design the challenge of communicating high value and benefit the product can give the customer [19].

Since people are mostly unaware of the factors involved in the pricing of a product, such as the actual or estimated costs of production, people rely on the emotional appeal of the product and the interpretation of the benefits they believe the product will bring. It has become crucial to understand the consumer [20] [21].

3.3 - Product Semantics

Firstly, product semantics have to be distinguished from semantics within the field of linguistics [22]. In linguistics, it is the meaning and interpretation of words, signs, and sentence structure [22]. Here, semantics largely determine our reading comprehension, how we understand others, and even what kind of decisions we make as a result of our interpretations [22]. Product semantics on the other hand are concerned with the collection of cultural, societal and material-centric meanings and values that people place in products. Product semantics largely determine our reading and

understanding of the world, how we understand others, and the decisions we make as a result of our interpretations. A products consist of components that have their own signs and signals, and the reading of this structure of form and material creates a whole. Understanding this can give key insights into designing appropriate products.

As introduced Krippendorff and Butter define product semantics as *"the study of the symbolic qualities of man-made forms in the context of their use and the application of this knowledge to industrial design"* [23]. By symbolic qualities, they are referring to the psychological, social and cultural context of a product, they are not only considering a product's physical and psychological functions [23].

Since product semantics are the studies of the symbolic qualities of man-made forms in the context of their use, this gives designers the opportunity to design products that communicate what meaning the product can have for the customer [23]. Because we wish to understand how people see products it is important to know which parameters we as people are looking at.

An object's form says three things: something about itself, something about the larger context of its use, and something about the user who interacts with it and develops a conceptual connection to it [24].

The communication of product semantics between a designer and a user cannot be described as linear because objects get more meaning through interaction and individual interpretation during use [23]. Krippendorff says that *"… product semantics seeks to understand users' understanding of their practices in interfacing with designed things and provide strategies for designing products that can either afford or supportively intervene in that understanding"* [24]. Dorsa has argued that such an approach is concerned essentially with: *"… the non-verbal communication of objects. It is based on a belief that objects can be designed to communicate information about themselves and that when these objects are properly designed users will be able to "decode" this information"* [25].

Krippendorff and Butter identified five main opportunities for errors when designing without respect for product semantics which are important

to consider when designing for attachment over time [25]. The opportunities for errors are: designing a product unidentifiable by users, designing a product that does not promote manipulation in the proper way, designing a product that lacks transparency and limits user exploration in a non-harmful way, designing a product that forces the user to read a detailed manual rather than encouraging the user to be curious and explore its possibilities and designing a product that does not fit into the symbolic environment it will exist within [23].

An interpretation of Donald Norman's key principles for designing meaningful products is the importance of visibility, the provision of appropriate cues and clues, and feedback to users in respect of their actions. It constitutes a form of psychology – the psychology of how people interact with things [25]. His concern lies within the understanding and representation of product features through societal codes and metaphors.

Another way to view products is through Gibsons approach of affordances through user-world interactions. He says that "the term of affordances refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" [25]. These affordances are the raw relations between person and product, devoid of meaning.

An understanding of the interaction people have with their products, in terms of the cognitive models that are active during use, is necessary for an effective product semantics driven design process [25].

3.4 - Attachment

Product attachment results whenever there is a strong commitment and emotion towards a product [3]. Attachment to products happens for various reasons, such as recurring pleasurable experiences during interactions, a suitable match with one's self-identity, and pleasant shared memories [3]. It is important to distinguish attachment as a separate, but related concept to ownership, which is defined as the act, state or right of possessing something. Ownership does not automatically imply immediate attachment because attachment is a factor that increases over time through experiences and memories with the product [3].

Ball and Tasaki define object attachment as the *"extent to which an object which is owned, expected to be owned, or previously owned by an individual, or is used by that individual to maintain his or her self-concept"* [9].

3.4.1 Ownership and Attachment

When considering attachment to products, it can be useful to look at the stages of attachment in relation to ownership, as presented by Ko, Ramirez and Ward [3]. They propose a model where ownership stages of Ball and Tasaki [26] are linked to the product person relationship model presented by Davis [3].

Possible attachment & detachment stages	Ownership stages (Ball & Tasaki. 1992)	Product-person relationship lifecycle model (Davis, 2002)
Pre attachment / detachment *Before product is purchased*	**Pre-acquisition**	**First encounter**
Early attachment / detachment *Soon after product is purchased*	**Early ownership**	**Commitment + Honeymoon period**
Mature attachment / detachment *After product is being used for some time*	**Mature ownership**	
Pre detachment / attachment *Thinking of discarding product*	**Post-disposition**	**Relationship breakdown**
Post detachment / attachment *After product is discarded or transferred*	**Post-disposition**	

Table 1: Stages of product attachment and detachment linked with ownership stages. [3]

The model divides stages of attachment into – pre attachment or detachment (before product is purchased), early attachment or detachment (soon

after product is purchased), mature attachment or detachment (after product has being used for some time), pre detachment or attachment (thinking of discarding product), post detachment or attachment (after a product is discarded or transferred) [5]. Those stages represent the stages of attachment and detachment.

Pre-acquisition is the stage where feelings towards a product start to develop before the product is actually obtained [5]. Producers, sellers and designers can stimulate such feelings towards new products through advertising. These feelings are likely to enhance the degree of product attachment a person experiences after the product has been acquired. The moment of product acquisition is very important in providing the first occasion for physical contact with the product and for opening up the possibility for memories to be formed [5]. If the product is a gift, a special person may present it at a special occasion or the current owner may have bought the product in a special store or in a place far from home. These circumstances affect a person's initial feelings toward a product and can affect easily the emotions experienced during ownership [5].

During ownership, consumption activities can be defined as storing, using, maintaining, repairing and disposing of the purchased product [5]. A consumer's emotions towards a specific product are likely to change over time. This is due to dynamics in the target product, for example the loss of functionality or the change of appearance; in the consumer, for example through increased age (an older consumer might not wish to wear clothes meant for teenagers), changes in family life cycle, moving to another house; or in the product-consumer interaction, for example through continually changing fashion, or technological improvements [5]. Looking at the large number of durable products that are bought and owned in wealthy societies, it is likely that detachment for many products starts soon after the product was bought, whereas only a few products remain cherished for a long time [5].

3.4.2 The Product-Person Relationship

A second important framework for understanding product attachment is the product-person-relationship model, also presented in table 1 as a relation to the ownership stages. Various authors state that owners of possessions have particular

objects which they want to protect against damage. There is an emotional bonding or a `person-product relationship´ that exists between the owners and their special possessions [3].

In this model one can equate the stages of ownership with the product-person relationship as shown (table 1): Pre-acquisition = first encounter; early ownership and mature ownership = commitment and honeymoon period; pre-disposition = relationship breakdown. The first interaction between a person and a product is described as the first encounter. It is a strong factor in shaping the users expectations in this relationship if the first encounter is achieved through advertising or through a personal connection. These first interactions will have a direct effect on the person-product relationship [27]. At this stage various reflections on the object's attributes will be conceived: latest model, functionality, ease of use, aesthetic (style and fashion), novelty, reliability, durability, cost and monetary value which have a direct impact on the person-product relationship. Then there is the commitment period in the early or mature ownership stage. In this period there are two different approaches that interfere in the purchasing process – the impulse purchase and the researched purchase [27].

The researched purchaser will consider a variety of facts, alternatives and needs. Here one can say that the object has a greater value and / or usage factor which requires a more in-depth decision making process. The consumer's research has a direct impact on the relationship towards the product, as the choice is more personal and educated. Impulse purchases however, tend to have a short life cycle as the reasons at that specific moment will capitulate over time [27]. The honeymoon period is centered to the stage of early ownership (can also occur during mature ownership) and relates to *"the passionate early stages of a subject-object relationship"* [27]. It can be described as the period of intense synergy with the product within which everything is new, interesting and the consumption is feverish [27]. In this period the complexity of the object is put to test. A person can discover pleasures with, or disapprove of, a product's usability and this influences the commitment within the product-person relationship [27]. This is the test of the consumers expectation set against the realities of the product-features in the user's life. In the pre-disposition stage there is the relationship

breakdown. A breakdown between a user and the object can happen when there is a conflict between the expected values and reality [27]. This happens often when advertising or the given information has not enabled the consumer to make an appropriate and educated choice at the point of purchase. The user can have been misguided by illusions of the attributes and qualities he or she desired or expected from the object. Other reasons for such a breakdown can be a newer available product, a new aesthetic, annoying traits or failure of the product, or if the product was a gift and the owner did not personally make the purchase. The last step in this relationship-model is the enduring relationship. *"A prolonged relationship occurs when the needs of the user(s) are more fully satisfied by the product, and the passage of time does not reduce the pleasure obtained from the product"* [27].

The person-product relationship can increase in strength during some time if the consumer grows a familiarity, a comfort with the product. So one can say that person and product flourish within a long lasting relationship [27]. *"As the user's needs, skills, and abilities change over time, products which can be adapted or can be used in a flexible way, will also provide a greater satisfaction and pleasure"* [27].

It is important to understand the consumer's post-purchase behaviour if one is to understand the reasons for product attachment and satisfaction. Positive relationships and positive experiences relate to the first three stages of ownership (pre-acquisition, early ownership, and mature ownership) while negative connotations are connected to the final stages of ownership (pre-disposition and post-disposition) [3].

Product owners experience feelings of attachment and detachment towards some of their possessions during the different ownership stages. Those feelings can either stimulate or reduce their relationship with the specific product. Those feelings are also the motivator for further steps – to move on to the next stage or to end the ownership. If the experiences with a product were positive, the relationship would continue to the mature ownership stage, but if the experiences were negative the relationship with the product would break down and the owner would move directly on to the pre-disposition stage [3].

Attachment is different from other consumer behaviour constructs because it focuses on the consumer's relationship with a particular product [5]. Other consumer behaviours are product involvement which addresses a person's feelings towards an entire product category, or brand loyalty or brand attachment, which focus on the brand instead of the physical product [5]. One can also observe that people are still attached to their products even when these products no longer function properly. A good product utility is not necessarily a reason for consumer-product attachment. One can also say that the fact that a product fulfils its primary function, such as indicating the right time for a clock or transporting a person from one place to another for a car, does not contribute to the degree of attachment [5]. When a product is stated as irreplaceable, then that product has a symbolic meaning to its owner that cannot be found in other products, even when they are identical. This shows the uniqueness to the owner because of memories or a specific usage during a specific time or event. The feeling of irreplaceability is probably the most important component of attachment, because it is based on the personal relationship with the product, whereas other components are mainly determined by the more distant producer or seller [5].

People are also using objects to define themselves, to create a sense of identity, to remind themselves and others of who they are or who they would like to be, and / or to protect and enhance their self-concept [5]. There are four directions which can show a person's self-schema – the diffuse self, the private self, the public self and the collective self. Each of those directions provides a basis for self-evaluation.
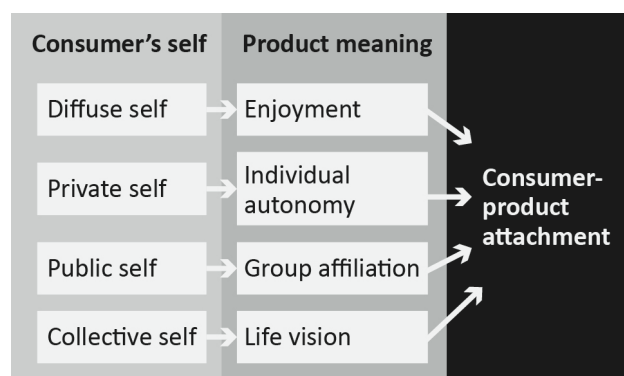

Figure 1: Proposed conceptual model of consumer-product attachment [5]

The diffuse self strives for hedonic satisfaction, and therefore product enjoyment is a driver for

attachment here [5]. The private self has the goal of individual achievement and products should therefore reflect the identity, individuality, independence, uniqueness, skills, goals and achievements of the owner [5]. The public self looks for approval from others, and therefore attachment is driven by products that symbolise a person's relationship to family members, friends or social groups [5]. The collective self searches for approval from a reference group. Products related to this reference do not refer to specific people in the reference group, but they symbolise an idea, a philosophy of life, an intangible, abstract entity or elements of a person's life vision [5]. Figure 1 illustrates how parts of the self lead to a possible determinant of product attachment: enjoyment, individual autonomy, group affiliation, and life vision.

Possible attachment factors	Possible detachment factors	Four pleasures (Jordan, 2000)
Physio attachment *Satisfying physical contact, aesthetic design, plesant touch and smell*	**Physio detachment** Product function faliure, product wear and tear	**Physio pleasure**
Socio attachment *Enjoying with others in a social or cultural setting*	**Socio detachment** Change of social and cultural status	**Physio pleasure**
Psycho attachment *Cognitive and emotional reactions, memories to person place event*	**Psycho detachment** Undesirable past self	**Psycho pleasure**
Ideo attachment *Alignment with personal values and ideology*	**Ideo detachment** Altered ideology	**Psycho pleasure**

Table 2. Factors of attachment and detachment, adapted from Jordan by Ko, Ramirez and Ward [3].

In a previous paragraph, this article described Jordans's ideas about the four different types of pleasure that people seek in products: physio-pleasure, psycho-pleasure, socio-pleasure, and ideo-pleasure. These types of pleasures have a connection to why people become attached to products, as shown in table 2. They also relate to the three levels of information which result in different types of design focus: visceral, behavioural, and reflective design focus.

In all three levels of design the first and most basic level involves direct sensory gratification, whereas the last level involves high-level cognitive elaboration linking the individual product experience to its societal, cultural, and historical context [5]. All these factors, which play a role in how a person perceives them self and what the product means to them, result in consumer-product attachment.

Inconsistencies within this model occur with the idea that behavioural designs focus on the execution of routine and well learned behavioural skills, whereas a product's cognitive demands can lead to psycho-pleasure. However the areas partly overlap because psycho-pleasure may contain complex cognitive elaboration, while behavioural design may contain emotional responses. The private self relates to life as a whole, and does not only contain personal achievements on cognitive tasks.

These determinants clearly state in what ways products can be used to support the owners self. - The diffuse self can for example be supported through the enjoyment of a product's beautiful appearance. The determinants are however not dependant on emotional reactions, but point to how products can give meaning to its owner, and can evoke positive emotional reactions [5].

4.   DISCUSSION AND EVALUATION

Within product design there is an opportunity to make people happy about keeping products longer, and this article seeks to enlighten the reader about some of the aspects that can be taken into account.

The design of the product must, in some way, communicate how it can be used in a setting where it will be memorable. It has to sustain and keep its function well over time, it has to not just satisfy, but delight the owner continuously, and if possible it should encourage activities and social settings. So through Kanemahn's view of happiness, products can be carriers of history, a mode for externalised memory. If this is to be possible, design should embrace the possibility

people have to mark their products, and build positive relationships and memories with them. Another way to evoke joy through products is by incorporating an element of surprise, since such products are found to be more enjoyable [5]. The challenge in these cases is to combine familiarity and originality within the same design over time, and lay a foundation for positive memories.

Products, and objects can be meaningful to a person. The perception of a product's value to a person often comes through memories and experiences with the product. In this way the tradeoff between the price being paid, and the benefits gained may relate to an end of life situation. If there is a high perception of value and attachment to a product, the sacrifice may be emotional distress, for example if a child loses a teddybear.

A challenge to the idea of sustainability through happiness and attachment, is the idea of novelty in itself being the reason to buy a new product. This is something that designers can use during the design of new products, but that also can work against the idea of people being happy with the products they already own. Curiosity can guide people towards new products and experiences, but also move people towards discovering the history of a product. Where it was made, by whom, in what context and time.

Material influences the meaning a person sees in a product. Designers have to use tools to manipulate shapes and materials with the use of principles in applied aesthetics and through the composition of a product. Designers often seek to give a product affordances that make a product understandable and communicative of its function. The context of the use of the product is also a key factor to consider in a design process. It is rarely static because the reading of a product's coding will age with the changing context of the world. The physical properties of a product influence design, and some materials can gain a history over time, and they are influencing factors in product attachment. For example a table with a stain from a specific time. This means that from a semantics and design perspective one should make choices to use materials that gain character over time, rather than materials that give a resulting perception of wear and tear.

The durability of the material and the technical functionality a product can give to a person influences the perceived value of the product. These factors are the possible benefits the product can give, and have an influence on the psycho and physio pleasures felt in relation to the product.

Signs and meanings can be built in to the product. Shapes are hard to change, but colour or tactility can in many cases easily be changed. In this way a product can have locked or unlocked features. The designer can let the product evolve with the changing context. It can also be helpful to look at products as either foreground or background products. Some products are meant to only fulfil their function well without the user noticing their presence. These can be interpreted as neutral products. In contrast there are products that openly shout out their presence. These types of products might be the products of trends and culture. This cultural factor within a product's semantics is important to account for. Products can also give people acceptance in social settings and raise or lower their social status in groups. Therefore asking people to keep their products longer may be challenging, because they are likely to go out of trend.

Also the meaning of a product might differ based on a person's occupation. The context a person is in, and the background knowledge a person has about a product, may influence the perception of the benefits the product can give. In this way a product can have social meanings, and give different product-person relationships based on the social and functional use of the product. In short, a well designed product has the psychological, social and cultural qualities appropriate to the context of the products use.

There is little correlation between experienced happiness, and remembered happiness [3]. In talking about attachment to products it is important to note that the experiencing self creates the memories. When it comes to the value, or perceived value of a product, there is, for a high cost quality product, a sacrifice made at the point of purchase. This might be a negative experience. The remembered experience however might be filled with all of the good experiences had with the product. The purchase experience may therefore be another important aspect to the remembered happiness with the product. Also, satisfaction with a product is not enough in the context of prolonging the product lifetime. The Kano model [16] shows that product features go from being novel, to being perceived as standard or necessary.

This transition makes newer products more attractive. In turn this drives the need for products to make people happy, not only because of well functioning features, but also through product semantics. Designers have the opportunity to influence the symbolic qualities, but have to take the context they are designing for into account.

It is reasonable to assume that in a product's lifetime it may go through many changes and could become damaged. This prompts the necessity for repairing it. If the product breakdown is a pleasurable experience [28], and it indicates how it can be fixed, it may give the user a stronger sense of ownership and attachment. Investment in time with a product may in this way leave a lasting reminder and memory within the product that reinforces the sense of attachment. The recollection of memories may be enhanced if a product shows physical signs of the event. These marks of use do not necessarily degrade the product's appearance, but can add to the richness of the shared history between the owner and the product. Designers should strive to design products that age with dignity, and that increase in perceived value through the emotional connection created through maintaining and repair. This strengthening of the person-product relationship may contribute to increasing a product's lifetime [5].

5.   CONCLUSION

To conclude, product attachment is a result of how a product's semantics influence a person's perception of value to that product, and how this can translate to attachment to that product over time.

It is important that products evoke feelings of joy and happiness. If a design succeeds in this, discarding a product becomes a sacrifice, and repair is an attractive option. Attachment through happiness gives sustainability. Designing products with this goal can make people happy about keeping their products longer.

Further development on this topic can give a fuller understanding of the impact product semantics have on people's perceptions of products. This can support design practices in creating products that will be appropriate to their context, and that aim to create joy and happiness.

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