EMOTIONAL DESIGN AND SUSTAINABILITY

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Abstract

There is a paradigm shift in design from an emphasis on form and function to the emotional, social and cultural contexts and what they mean to the users. Functionality is taken for granted in products, and users are looking for fulfilment at an altogether different level of appreciation. Design directed by emotional content is regarded as the heart of current design practices, research, and education. This paper discusses the different levels of emotion processing given by Norman (2004) and their relation to design for sustainability. Everything we do has both a cognitive and an emotional component – cognitive to assign meaning, emotional to assign value. Without emotions, our decision-making abilities are impaired. Emotions make us smart and make us make value judgments to design for and choose products relevant for a sustainable lifestyle.

Keywords: Emotional Design, Emotional Attachment, Sustainable Design, Sustainability.

INTRODUCTION

There is a paradigm shift in design from an emphasis on form and function to the emotional, social and cultural contexts and what they mean to the users (Krippendorff, 2006; Boztepe, 2007). Product design is being rapidly transformed through materials technology, production technology, information-processing technology and other processes. Functionality, attractiveness, ease-in-use, affordability, recyclability, and safety are all attributes that are expected to already exist in a product. Users are expecting more from everyday products. There is an

inclination towards objects that inspire users, enhance their lives, and help in triggering emotions or even in evoking dreams. Functionality is taken for granted in products, and users are looking for fulfilment at an altogether different level of appreciation. Design directed by emotional content can be regarded as the heart of current design practices, research, and education (Demirbilek & Sener, 2003).

According to Damazio et al. (2010), "Emotional Design is an approach that extends beyond form, function, performance and usability to the emotional responses, experiences, effects, and social transformations that design actions may produce". Emotional interaction improves user interaction in product design. Products can be more closely associated with the users and support better user experience with provision of emotionally rich product-user interaction (Nam, et al., 2007). A key element in sustainable design is designing products that connect deeply with the users. The implications of emotional design are important for sustainability since products with attributes of emotional design have longer lifespan.

IMPORTANCE OF INCREASING LIFESPAN OF PRODUCTS FOR PRODUCT SUSTAINABILITY

The longevity or lifespan of a product is essential to sustainable design. However, physical lifespan of a product alone is irrelevant to sustainability, if the user is not prepared to keep it for the duration of the product's life (Barr, 2012). A more meaningful user-product relationship is therefore necessary for the user to want to keep the product for its lifespan and even beyond. According to Eternally Yours, there are three dimensions in the lifespan of products: *the technical, the economical,* and *the psychological lifespan*. The technical lifespan is the physical life

of the product and relates to longevity of product forms and materials. The economical lifespan concerns with the economic viability of products in the market before they are outdated with introduction of better or newer models. The psychological lifespan relates to the psychological time the user renders to the product. Psychological lifespan of products may be cut short because the products do not fit our preferences or lifestyle anymore. Products are often discarded because their psychological lifespan is over before the expiration of the technical or the economical lifespan. Therefore, increasing the psychological lifespan of products becomes very important in bringing about product sustainability (Verbeek & Kockelkoren, 1998).

Schifferstein and Pelgrim (2008) cited that a product's life can be lengthened by increasing the user's emotional attachment towards the product, as the person will handle the product with care, repair it when it breaks down and postpone its replacement as long as possible when he becomes emotionally attached to it. Mugge et al. (2005a) cites that product attachment and product lifetime are connected and that product lifetime is a direct consequence of the experience of emotional attachment to a product. A high product turnover is undesirable from the view point of sustainability because it produces wastes and uses more resources. Therefore it is worthwhile to lengthen the life span of products. A possible strategy to slow down product life cycles is by increasing the emotional attachment users have towards the products they own and use.

LEVELS OF EMOTIONAL DESIGN AND ITS APPLICATION TO SUSTAINABLE DESIGN

Donald Norman (2004) proposed a framework in which he distinguishes three levels of information processing for product

emotions. These levels of information processing can be applied in emotional design for sustainability. These levels of information processing are involved in emotional product experience and each level involves a distinct type of product emotion and a corresponding design focus. The design requirement for each level differs widely.
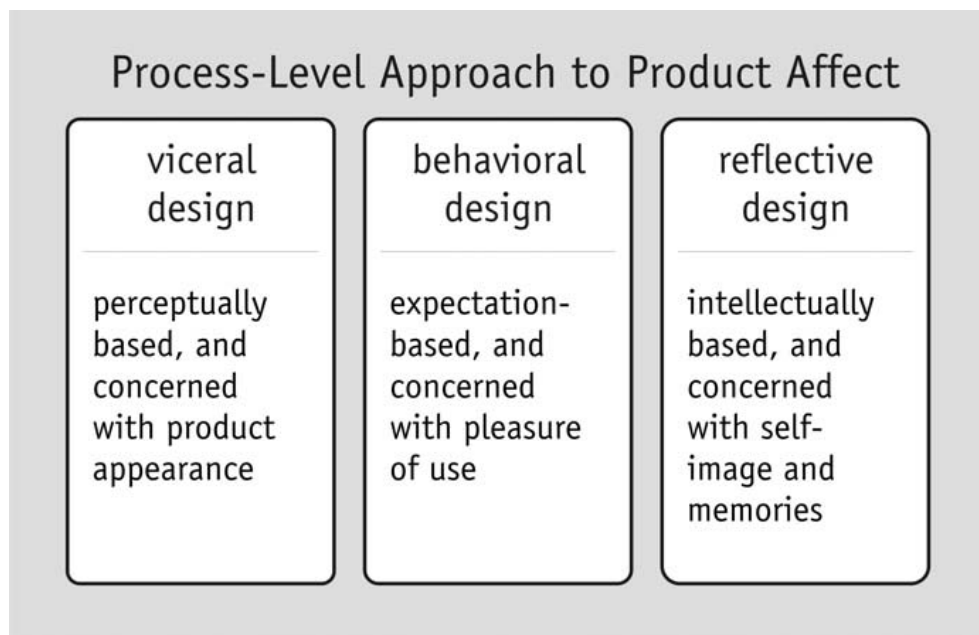
Figure No. 1: Process-level based framework of product affect as proposed by Norman (2004) (cited in Desmet, 2011)

a. **The reactive level**: This level of processing is fast, making rapid judgments of what is good or bad, safe or dangerous. The reactive level of processing is the start of emotional processing and is biologically determined. This level is pre-conscious and pre-thought. Emotions experienced at this level are usually outside of our control and directly related to our senses. We make rapid judgments that are largely biologically determined while experiencing visceral emotions. This level is dominated by our sense where we react to the senses in our environment.

The reactive emotion is perceptually based and corresponds with 'visceral design' which is concerned with product appearance. Visceral design is about the initial impact of a product and it is at this level that first impressions are formed. Physical features of products dominate visceral design. Product appearance is the physical composition of a product, how the product *looks*, *feels, smells* and *sounds* to the users, relating only to the exteriors of the product (Creusen & Schoormans, 2005; Veyisoglu, 2010; Garvin 1984). According to Garvin (1984), appearance of a product is clearly a matter of personal judgment and reflection of individual preference. Product appearances influence the user preferences wherein a user may prefer an "attractive" but "unreliable" product over the one that is "unattractive" but highly "reliable" (Grawal, 1997 in Veyisoglu, 2010). Product appearance also has lasting influences on the user. Pye, (1978 in Veyisoglu, 2010) views that although many products are quickly discarded or consumed, the appearance of a more durable product can create emotional bonds with users as products become part of their environment. The choice of a specific product conveys the kind of person you are or want to be and users use products to express their self-image. A product's appearance communicates messages as it may look 'cheerful', 'boring', 'friendly', 'expensive', 'rude', or 'childish'. Also a certain style of appearance can evoke associations with a certain time or place (Creusen & Schoormans 2005). To fully use the potential of product appearance in product selection, the appearance should communicate the central product advantage to users. The value that is most important to users in obtaining or purchasing a product should be the starting point in the design of the product appearance (Bruce & Whitehead 1988, in Veyisoglu, 2010).

b. The routine level: This level is the site of most human behaviour. The routine level is about use and experience with a product. This level has many facets: *function, performance* and *usability* of the product. A product's function specifies what activities it supports, what it is meant to do. The product value is decided by if the product function is adequate or inadequate. Performance is about how well the product does the desired functions wherein it determines the success or failure of the product. Usability of a product describes the ease with which the user understands how the product works and how to get it to perform. The routine level is the information processing of acquired behaviours and skills. This well-learned behaviours and skills can be quickly corrected for deviations from the routine expectations.

The 'routine emotion' is expectation based and concerned with pleasure and effectiveness of use and thus concerned with 'behavioural design'. Usability and functionality are very important attributes of products but are not sufficient on their own to convey pleasure and happiness to users. Positive emotions play an important role in user behaviour relating to decision making, motivation and social interaction (Demirbilek & Sener, 2003). Satisfaction in product use is an attribute relating to how pleasant the product is to use. Pleasure is the agreeable emotion accompanying the expectation, acquisition, or possession of something good or desirable. Pleasure has been distinguished as a reason to consider a product as special, cherished and treasured, indicating the presence of an emotional bond. Pleasure can be experienced during usage as a result of superior functionality, aesthetic pleasure derived from the product's appearance or pleasure from product benefits like

entertainment and relaxation. For example, the pleasure a person experiences by the great sound a high-quality stereo because it provides (Mugge et al., 2006b). A designer's task in behavioural design is to understand how people will use the product they design. A product becomes acceptable in the real world when it has become both socially and practically acceptable (Nunnes, 2006). It is through the knowledge of product use and understanding of its features, practicality and acceptability that the user is able form a meaning of the product. Understanding products involves connecting experiences relating to the context of their use and practice in our environment. It involves the affective value of products acquired from a product's capacity to arouse feelings and emotions (Kidd, 2001; Krippendorff, 1989; Lai, 1995). To understand emotional responses to consumer products, it is important to understand the users' concerns in which the product is or will be used (Desmet, 2003).

c. **The reflective level**: It is at this level that consciousness and the highest levels of feelings, emotions and cognition reside. It is only here that the full impact of both thought and emotions are experienced. The reflective level is the most sophisticated involving all higher-level cognitive processes like consciousness, ability to form generalizations, to make plans, and to solve problems. At the lower reactive and behavioural levels, there is only emotion, but without interpretation and consciousness. Interpretation, understanding and reasoning come from the reflective level. The reflective level is the most vulnerable to variability through culture, experience, education, and individual differences.

The reflective emotion is intellectually based and corresponds with 'reflective design' that concerns with self image, personal satisfaction and memories. People are motivated to establish and communicate a personal identity, distinct from that of others and the use of products is one way to symbolically display one's individuality to oneself and to others (Mugge et al., 2006b). Products serve as symbols of who we are, who we have been, and who we are attempting to become. People make a comparison between their own self-concept and the product image and prefer those products that have an image congruent to their self. A vehicle for self-expression is for designers to offer consumer with the ability to customize products to reflect their self-concept and identity (Tlhabano et al., 2013). People need to maintain a consistent and positive view of one's self and the use of products is one way through which a person can symbolically define and express his unique self and therefore, people prefer products that are congruent to their self-concept. Products can remind a person of people, events or places that are important to him and help him maintain a sense of the past, which is essential to define and maintain one's identity. Part of who we are today is a result of who we were in the past. For example, a souvenir from a place you visited, photographs of past events (Mugge et al., 2006b). Damazio et al., (2010) cited that memorable products are the tangible remains of our most valuable experiences which shape our future decisions and choices. People are more likely to become attached to possessions that are associated with pleasant memories, because they want to preserve the happy moments of life (Tlhabano, 2010).

CONCLUSION

Desmet (2011) notes that this framework is "an important contribution to the design and emotion discourse, because it clarifies and illustrates the role of cognition in the process of product emotion, and provides us with a basis for explaining why and how products elicits emotional responses". Norman (2004) remarks that emotion makes us smart. Without emotions, our decision-making abilities are impaired. Emotion is always passing judgements, presenting us with immediate information about the world, about potential dangers or comfort, about things nice or bad. Emotion makes us make value judgements. Everything we do has both a cognitive and an emotional component – cognitive to assign meaning, emotional to assign value.

Sustainability of people's consumption patterns can be stimulated by incorporating the users' needs and preferences to designs of products, leading to increased chances of the user's approach to product. The users' approach to products can result in increased users-product emotional attachment, thereby leading to increased life of the product. As Barr (2012) remarks, longevity of products is not the physical lifespan of the product but the length of the user's emotional attachment to the product. Designers can increase the sustainability of user's consumption patterns through the retention of products by stimulating the degree of user-product emotional attachment. Similarity in personality between a person and a product is relevant in the development of an emotional relationship between the user and the product. People become more attached to products with a personality that is congruent to their own (Mugge et al., 2006a) and as such, designers should design products that encourage the user's self-expression, useful and enjoyable products that evoke sensory and aesthetic pleasure, and products that can stimulate an engaging

user-product interaction to increase the opportunity for memorable events to occur.

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