Extending product life by introducing symbolic meaning: an exploration of design strategies to support subjective well-being

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Abstract: Because products are often discarded while still fully functioning, it may be possible to support durability with design that stimulates a more enduring product-owner relationship. This paper is based on the proposition that one promising approach to support such prolonged relevance is by developing products with a higher predisposition for the attribution of happiness-related symbolic meaning. The study was based on a framework with six types of symbolic product meanings: positive relations with others, personal growth, purpose in life, environmental mastery, autonomy, and self-acceptance. In a pre-study, fifty existing symbolically meaningful products were selected based on these six symbolic meanings. In the main study, seven designers and design researchers analysed these fifty products with the aim to uncover underlying design directions. This resulted in sixteen design directions. The directions can act as a source of inspiration to designers when aiming to design for a long-term meaningful product-owner relationship.

Introduction

Many products are disposed of while they are still functioning properly (van Nes, 2010; Bakker, Wang, Huisman & Hollander, 2014). From a sustainability perspective, this is undesirable. For designers, it is interesting to search for ways to persuade consumers to keep and use their products for a longer period of time by designing products with more durable relevance and value for users (Champman, 2005).

Symbolic meaning is found to be an important source of product attachment (Mugge, Schoormans & Schifferstein, 2005; 2008). This vital insight served as the starting point for the present research, which focuses specifically on happiness-related symbolic meaning. If a product symbolizes aspects of a person's happiness, he/she is more likely to keep it, because losing the product implies that the strong symbolic meaning and thus the 'happiness trigger' is lost (Csikszentmihalyi & Rochberg-Halton, 1981; Belk, 1988).

The present study aims to formulate design directions that can help designers develop products with a higher predisposition for the attribution of happiness-related symbolic meaning.

To explore these design directions, we build on the work of Casais, Mugge and Desmet (2015) which describes how people's subjective well-being (i.e., happiness) can be represented in the symbolic meanings of products. Based on Ryff's (1989) model of psychological well-being, the framework proposed six types of happiness-related symbolic meaning in products: 1) the symbolic meaning of *positive relations with others*, found in possessions that represent meaningful affiliations which provide a sense of belongingness (e.g., an heirloom family necklace); 2) the symbolic meaning of *personal growth*, found in possessions that symbolize transitions, acceptance of past experiences, and continued self-development (e.g, a set of military name tags); 3) the symbolic meaning of *purpose in life*, found in possessions that symbolize the individual's goals and aspirations in life (e.g., a parenthood ring); 4) the symbolic meaning of *environmental mastery*, found in possessions that symbolize the individual's ability to master his/her context and build beneficial networks (e.g., a pair of soccer shoes); 5) the symbolic meaning of

autonomy, found in possessions that symbolize particular ways of living and life choices (e.g., a sewing machine); and 6) the symbolic meaning of *self-acceptance*, found in possessions that symbolize the positive aspects of the individual, promoting a positive self-image (e.g., a stuffed fluffy bunny).

While these six types of happiness-related symbolic meanings can be of use when analysing existing products, they are too abstract to be of direct use in design processes. In this paper we report a qualitative study in which participants were asked to analyse and uncover potential design directions from a set of product examples.

Methodology

Stimuli

To ensure a large variety in symbolically meaningful product examples, an assortment of 100 consumer durables was collected. The main search criterion was to look for products that were in some way open for symbolic meaning attribution, in which the work of Casais et al. (2015) served as a reference. The search was conducted in several well-known design blogs and online magazines such as Dezeen, Design Milk, Domus, Wallpaper, and Core 77. The assortment comprised of products available in the market and product concepts. It contained identifiable elements relating to one or more happiness-related symbolic meanings, either embedded in tangible features or implied in the activities suggested by the product (e.g., reflective activities, storage of memories).
A set of 100 stimuli cards was printed, each card representing one product example. The cards had a dimension of 10 x 5 cm, and contained an image and information about the product (Figure 1). Because the set of 100 cards was too extensive to use in the main study, a pre-selection of the 50 best product examples was made. This selection was done by four experts in Positive Design (i.e., design for subjective well-being) in a one-hour group session. Based on the specialist insights, the most striking and convincing examples were selected. The final selection can be found online at: http://symbolicmeaningresearch.weebly.com/.

Figure 1. Stimuli cards used in the study.

Participants

Seven design researchers and designers with experience in designing products (at least a Bachelor Degree in industrial design) were recruited (see Table 1).

Procedure

To keep the task feasible for the participants, the study was split into two subsequent sessions: categorization and analysis. These two sessions were conducted individually and recorded (video, audio, and photographs). Three days before the first session, the participants received the 50 product cards by email, and were asked to read each card to get acquainted with the product examples.

The first session started with an explanation about the framework of happiness-related symbolic meaning. The participant was asked to read a short summary of each type of meaning, which included examples of symbolically meaningful product stories discussed in Casais et al. (2015).

Following the introduction, the 50 product example cards were provided to the participant. The participant was instructed to divide the product examples over the six types of symbolic meaning in a quick and intuitive way, vocalizing his/her thoughts, and to use post-it notes in the examples that were suitable for multiple meanings.

Participant code	Qualification	Role
DRP01	MSc of Product Design	PhD candidate (Design Theory and Methodology)
DP02	MSc of Industrial Design Engineering (Design for Interaction)	User-centred designer
DRP03	MSc of Industrial Design Engineering (Design for Interaction)	PhD candidate (Positive Design)
DP04	MSc of Industrial Design Engineering (Integrated Product Design)	Industrial designer
DRP05	MSc of Design	PhD candidate (Design for Sustainability)
DP06	Bachelor of Engineering (Industrial Product Design)	Product designer / production assistant
DRP07	MSc of Industrial Design Engineering (Design for Interaction)	PhD candidate (Product Conceptualization and Communication)

Table 1. Summary of the participants (DRP= Design Researcher, DP=Designer).

In the second session, the participant was asked to analyse the categorization and uncover 'design for happiness' directions. Specifically, the participant was instructed to analyse the possible strategies behind the product examples in each group. To help the participant uncover potential design directions, questions were asked that stimulated exploration. For example, by asking why the participant placed a certain product in a category; by asking the participant to consider the designer's perspective and possible approaches that might have been used when designing the product example; or by asking the participant to consider his/her own descriptions from the categorization exercise. Once all groups of products were analysed, the participant combined similar design directions into better defined ones, and selected multiple examples to illustrate them.

Results and Discussion

Each participant took on average 3 hours and 50 minutes to complete both sessions and uncovered 10 to 30 design directions.

Following the procedure of Gioia, Corly and Hamilton (2012), the design directions produced by the participants were analysed in three coding cycles. In each cycle, the researchers looked for similarity in the descriptions provided by the participants (in the post-it notes used in the sessions, complemented by the video and audio recordings), identified labels trying to remain close to the participants' phrasing and intention, and grouped those into clusters. The product examples were used to illustrate each cluster according to the selection made by the participants. This process resulted in 16 design directions (Table 2), each illustrated by a product example. For the purpose of exemplifying design directions from each symbolic meaning, six examples are presented and discussed in this section.

Design direction for positive relations with others

A resulting design direction for the symbolic meaning of positive relations with others is: "Support meaningful affiliations, facilitating the practice of specific belongingness activities." This design direction suggests that by making a belongingness practice easier, a product can increase its value for the user because it makes him/her feel like a part of something bigger. This can be achieved by providing guidance or by simplifying said activity, which encourages the user to be a part of that meaningful affiliation or belief system. For example, the *EL Sajjadah* by SOPDS is a carpet that facilitates the praying ritual by indicating the direction of Mecca through an embedded compass and recreating the atmosphere of a mosque through light and printed patterns (Figure 2).

The desire to form social attachments and to feel inclusion is linked to a fundamental human need for belongingness (Baumeister & Leary, 1995), which can be answered and supported through belongingness activities.

Symbolic meaning	*Design direction*	*Description*	*Product examples*
Positive relations with others	Support meaningful affiliations	Facilitating the practice of specific belongingness activities	El Sajjadah (praying carpet)
	Embody characteristics of a group	Using unique characteristics of users (e.g. culture, profession) to design a representation of a group	El botijo (water colling container)
Personal growth	Support active personal development	Providing a platform for active reflection on lessons learned and future expectations	OWL: On the Wisdom of Life (time capsule)
	Embody personal growth	Providing an adaptable design that can accommodate physical and psychological change	My life urn (memento mori)
	Support acceptance and growth from past experiences	Designing a tangible representation of the passage of time	365 (clock)
	Enhance memories	Offering a positive context or activity to reflect on memories of loved ones	Heirloom (display and recorder)
Purpose in life	Encourage positive change	Providing a external trigger that suggests beneficial activities or behaviours	Blank Wall Clock
	Provide a sense of control	Allowing the user to manage the progress towards personally significant goals, or to eliminate or mitigate obstacles that threaten their fulfilment	Kitchen safe
	Keep track of progress	Providing visual feedback to keep track of progress towards personally significant goals	999 Bottles (water bottle)
Environmental mastery	Improve multi-sensorial communication	Improving communication mediums by translating a message into a sensorial experience, for example by simulating intimate physical behaviours	Elfoid (hybrid cellphone)
	Provide a context for meaningful interaction	Facilitating interaction by making use of the context, or props as an advantage	Family matters (role play toys)
Autonomy	Destigmatize	Focusing on and enhancing the aesthetic qualities of physically enabling products	No country for old men (furniture)
	Design for mindfulness	Slowing down processes or disclosing the mechanisms behind how products work to promote a mindful living	The standard collection (lamp)
	Redirect the user's attention	Designing a product that actively requires attention from the user to mitigate or distract from negative situations	Konnekt (game)
Self-acceptance	Allow shared transformation	Providing tools for user input at aesthetic and functional level, in a permanent or temporary way.	Meaning of time (clock)
	Allow self-expression	Providing a tangible platform to wear, share, or display aspects of identity, personally significant ideas, principles, relationships, etc.	Favourite things (lamp)

Table 2. Table with the resulting design directions illustrated by product examples.

Figure 2. The El Sajjadah by SOPDS. Source: www.sonerozenc.com/product/el-sajjadah.

Design direction for personal growth

An example of a design direction for the symbolic meaning of personal growth is: "Support acceptance and growth from past experiences, designing a tangible representation of the passage of time." This design direction indicates that a product that is designed to facilitate reflection by providing an overview of past events, moments, and lessons learned can influence the subjective well-being of the user. For example, the *365 Knitting Clock* by Siren Wilhelmsen is a wall clock that represents time by continuously knitting a scarf over the course of one year (Figure 3).

Reflection activities (e.g., journals, meditation) have been shown to improve subjective well-being (Csikszentmihalyi, 1990; Lyubomirsky, 2008). Literature on the topic adds that context influences reflection, and that reflection requires the individual's active engagement (for a review see Rogers, 2001). Thus, introducing (material) triggers in the environment can facilitate reflective practices. In the given example, the knitting of time allows the user to reflect about the past by allowing him/her to symbolically wear the previous year.

Design direction for purpose in life

For the symbolic meaning of purpose in life, a resulting design direction is: "Encourage positive change, providing an external trigger that suggests beneficial activities or behaviours." This design direction proposes that a product can be a catalyser which encourages a user into positive actions. As such, a product is able to become more relevant for happiness by symbolizing a desired behavioural change.

Figure 3. The 365 Knitting Clock by Siren Wilhelmsen. Source: www.sirenelisewilhelmsen .com/work.html.

Figure 4. The Blank Wall Clock by Alessi. Source: store.alessi.com.

For example, the *Blank Wall Clock* by Alessi has a blank face and comes with a marker which allows the user to draw or write self-chosen activities or thoughts in each hour (Figure 4). When these align with the achievement of personally meaningful goals, it becomes a source of inspiration for the user. This provides the user with the opportunity to define a feed forward on how an action can be performed by translating the mental image of the goal into a visual focal point that stimulates his/her volition.

Design direction for environmental mastery

A resulting design direction for the symbolic meaning of environmental mastery is: "Improve multi-sensorial communication; improving communication mediums by translating a message into a sensorial experience, for

example by simulating intimate physical behaviours." Communication is an essential aspect of the creation of a suitable context for human flourishing, and this direction incorporates motion and/or haptic elements as a metaphor for intimate human behaviours in order to make impersonal communication mediums more nuanced and rich. In that sense, a symbolic value related to the individual's ability to connect can be added to products.

Previous research indicated that product-mediated contact can effectively transmit affect, and is more effective when it considers elements of human physicality such as touch and intentionality (Smith & MacLean, 2007; Lenay, 2010). An example of this is the *Elfoid P1*, a hybrid cell phone-robot developed by ATR Hiroshi Ishiguro Laboratory (Figure 5). This concept is a simplified human figure that transmits voice and motion to convey human "presence."

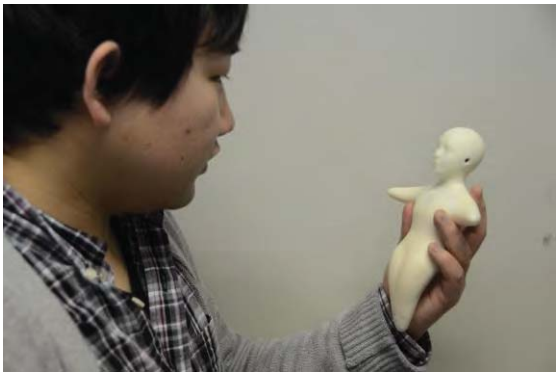

Figure 5. The Elfoid P1 by ATR Hiroshi Ishiguro Laboratory. Source: www.geminoid.jp/projects/CREST/elfoid.html.

Design direction for autonomy

An example of a resulting design direction for the symbolic meaning of autonomy is: "Design for mindfulness, slowing down processes or disclosing the mechanisms behind how products work to promote a mindful living". This design direction suggests that unveiling the way a product operates ritualizes its use, adding value and improving the use experience (Fuad-Luke, 2010).

The Standard Table Lamp by Knauf and Brown Studio does not have an on-off switch, but rather is presented in parts that need to be put together to function (Figure 6). The user is required to complete the electric circuit by placing the lamp in a low-voltage copper tower. This approach can contribute to delaying the anticipation of the product's function, by increasing the effort to use it.

Figure 6. The Standard Table Lamp by Knauf and Brown studio. Source: knaufandbrown.com.

Previous research has shown that the exercise of delaying gratification can contribute to self-regulation, an important aspect of subjective well-being (Ryff, 1989; Doer & Baumeister, 2010).

Design direction for self-acceptance

For the symbolic meaning of self-acceptance, an example of a design direction is: "Allow shared transformation, providing tools for user input at aesthetic and functional level, in a permanent or temporary way." This direction suggests that a product can trigger happiness by gaining symbolic meaning when it is open to aesthetic and functional investment from the user. The transformation of the object can lead, to some extent, to the transformation of its user: Someone that offers time and effort to modify something is also affected by it, for example, by releasing creativity. In addition, an object that is transformed by a person retains marks of intentionality that are as a signature. Accepting the result of such transformation can help the user have a positive look on the self ("I made this and it is beautiful/unique"). One way this design direction could be implemented is through temporary or permanent transformations in a purposefully incomplete product. For example, the *Meaning of Time* by Bomi Kim (Figure 7) is a clock mechanism that invites the user to insert a tangible element in the clock hands, involving him/her in the aesthetics and functionality of the object.

Research supports that unfinished products invite exploration, resulting in enhanced product attachment (Borjesson, 2009; Mugge et al, 2009).

Figure 7. The *Meaning of time* clock by Bomi Kim. Source: http://www.coroflot.com/bfsummer /meaning-of-time.

Conclusions

A product's inability to respond to the user's evolving aspirations (e.g., for technological or aesthetical upgradability) can promote premature discarding, but ultimately, the ending of a product's life is a consumer decision. The challenge resides, therefore, in designing products that support durable user-product relationships (van Nes, 2010) by focusing on durability of meaning and value (Chapman, 2005).

Several publications on the topic of emotional durability have explored the role of symbolic meaning in fostering durable user-product relationships (e.g., Chapman, 2005; van Nes & Cramer, 2005). While offering an important and novel perspective on durability, these explorations have not yet resulted in practical directions that support designers in their attempts to design emotionally durable products. The current study aimed to contribute by taking a step further in developing such design directions as hands-on, yet also malleable to the designer's point of view and interpretation. As such, the set of sixteen design directions are intended as exploratory rather than normative, ideally offering inspiration by displaying a diversity of opportunities to design with symbolic meaning.

In this manuscript, symbolic meaning is addressed as a gateway to enrich and deepen product experiences. Although many of the product examples used in this study are 'boutique products' that are produced in small series, our intention is to generate knowledge that can also be useful for mass-produced products. Ideally, the resulting design directions can help designing higher quality interactions with commodities, which could create differential advantage and stimulate brand loyalty. In the design process, these directions can serve as a source of inspiration to generate more relatable and personally relevant features and interactions, embodying (or facilitating the embodiment) of narratives (and in the effects in product use), with longer and more meaningful product-user relationships. For example, designing products that afford a 'freedom of intervention' allows unique interactions and usage narrations to occur, and opens the possibility for symbolic meaning to evolve during usage. This can strengthen the experience users have with a product, service, brand, etc.

We see at least five research opportunities to further develop and refine the present research: 1) developing and testing different formats of delivering and facilitating the design directions to designers; 2) exploring diverse uses of the directions, such as in setting design goals, idea generation, and product evaluation; 3) testing the effects of the directions (on both user subjective well-being and on product longevity) with longitudinal studies using prototypes that result from the use of the directions; 4) applying the directions in an education context, exploring possibilities and implications of their integration in product or industrial design curricula; 5) exploring the possibilities to apply the directions to other design domains, such as service design.

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