Affective memory: An ethnographic approach to design

Cristina Luz Cardoso

cristina.cardoso@ufsc.br

Universidade Federal de Santa Catarina, Campus Blumenau. Rua João Pessoa, 2750, Bairro Velha, 89036-256, Blumenau, SC, Brasil

Leila Amaral Gontijo

gontijo.lei@yahoo.com

Universidade Federal de Santa Catarina, Campus Universitário Reitor João David Ferreira Lima. Trindade, 88040-900, Florianópolis, SC, Brasil

Maristela Mitsuko Ono

maristelaono@gmail.com

Universidade Tecnológica Federal do Paraná. Av. Sete de Setembro, 3165, Rebouças, 80230-901, Curitiba, PR, Brasil

Abstract

This paper examines affective relationships between people and artefacts, and focuses on items found in domestic environments. Employing ethnographic resources, German descendants living in Brazil were interviewed. The study suggests that memory is the main component of affective bonds between people and their artefacts. Beyond the possibility of providing quality relationships among people and their artefacts, affective memory inscriptions upon artefacts make strong bonds possible in improving individual and social group memory extension, as well as extending product lifetimes. Studies of memory and affective bonds are relevant to Design given that memorable experiences may be translated through research and strategies towards products' design. Further research is necessary to benefit the inscription of affective memories on the design process.

Keywords: design, affective memory, collective memory, ethnography, German colonization.

Introduction

Traditionally, human memory studies have followed a cognitive research approach, especially when experiments in controlled environments were used (Neisser, 1982). Studies in Design, however, need a more holistic approach. Such studies need to consider the user(s) of various products, the environment in which the product is used, as well as the greater spectrum created by the relationships and dependencies which arise among such users and environments. Thus, a study on the memory process may also involve an approach derived from social sciences. Concepts such as individual and collective memory (Halbwachs, 2006), affective memory (Russo and Hekkert, 2007), and nostalgia (Holbrook and Schindler, 2003) are fundamental to the process of design.

Memory and affection play important roles within design studies; they are central to a person's capacity to associate and recall witnessed or reported events, phenomenon, places, or people who recorded positive or negative registries in his or her mind. Those associations are materialized in people's objects and influence their interactions and interpretations. Several studies have documented a reverence for the past and have highlighted memory as an important factor in people's relationship with their artefacts.

One observes that people use determined artefacts in order to evoke memories of loved ones or events, which are transformed into positive experiences. Memory also influences the quality of the interactions, which people maintain with their artefacts: developing links that bring important memories to the forefront (Damazio and Dias, 2003), determining favouritism towards special items (Wallendorf and Arnould, 1988), and establishing a certain nostalgia in people's lives (Holbrook and Schindler, 2003).

Studies on affect and memory within design may enhance daily life, such as when a researcher observes people and their artefacts within the context of their use. This research approach permits an analysis of a person's mundane activities and emotions; it allows a person to remain comfortable discussing the subjects the researcher suggests. By using ethnographic resources, the present study finds support in collecting and analysing subjective data capable of providing such understanding. Our field study suggests that affective memory inscriptions upon furniture and other domestic artefacts serve as important markers of connection; memories allow the subject to feel connected to individuals who have died and to social groups and cultural references. Memories represented by furniture and artefacts are transferred to younger generations and are able to extend the lifespan both of the familiar memory and of the product itself.

The information obtained reflects the important role memory plays on people's affective relationships with their objects. As such, this study has value as a conceptual basis for future investigations and the inclusion of these suggestions in future application designs.

Memory

Memory is a complex of various systems. From the perspective of cognitive psychology, human memory corresponds to a process in which it becomes possible to recall past experiences in order to use information obtained through such experiences in the present moment. The memory process is associated with retaining and recovering information about past experiences, in which there are three common operations. Each operation represents a stage of memory treatment: encoding, storage, and retrieval. In encoding, the sensory data is transformed into mental representations; in storage, the already coded information is kept in memory; and in retrieval, the stored information is extracted or utilized (Sternberg and Borges, 2000).

Bartlett and Burt's pioneer studies (1933) indicated that memory is not something fixed, a passive evocation or a literal copy of a past experience. As emphasized by Gero and Kannengiesser (2004), memory receives new construction each time it is necessary to evoke it. The original experience is part of what is needed to evoke, but "this process is also governed by the situation pertaining at the time of the demand for this memory."

From the perspective of neuroscience, only experiences which have some type of meaning may be memorized. The first time in which a person comes in contact with an unknown object, cerebral processes occur which organize themselves in order to give meaning to what is being seen. The first interaction with an object depends on the brain's capacity to attribute meaning, based on the user's analysis of the physical characteristics of the *stimulae* (Ledoux and Santos, 1998). A stimulus can be anything: a written word, a person, or an object with some property such as colour, shape, size, etc. which brings together determined information concerning such stimulus.

On the other hand, different people do not codify the same experience in the same manner. According to Godden and Baddeley (1975), emotional intensity, mood, and different states of consciousness can affect memory. Such affective states provide an internal context for codification which, allied with external contexts, may later affect the capacity to codify and evoke. The authors suggest that when individuals find themselves in affective states (internal context) or in physical environments (external context) similar to that which they have previously experienced, it becomes easier to evoke information.

With respect to the storage process and the length of time that content lasts, the memory process may be divided basically into the sensory store, short-term memory, and long-term memory. Sensory stores are initial repositories for information that may later ingress into short-term and long-term storages. Short-term memory has a limited capacity and its storage process is faster, as opposed to long-term memory, which may be able to store information indefinitely (Sternberg and Borges, 2000). According

to Klein *et al.* (2010), one of the most important functions of long-term memory adaptation is storing information concerning the past, seeking to plan for a personal future.

The significance process, cited by Ledoux, suggests that meaning is shared among a social group (Ledoux and Santos, 1998). Given this perspective, authors from social sciences agree that memory is a social phenomenon and that individual memories may form collective memories. Memory would then be constructed collectively, with collective interpretations of facts in which there is a common interest to be maintained. For example, memories of the past may serve to keep groups and institutions that make up society cohesive, as well as to defend the boundaries which the social group has in common (Halbwachs, 2006; Pollak, 1989). Important points of contact – memories common to group members – are highlighted in the foreground, while memories related to a small number of its members are relegated to the background of memory (Halbwachs, 2006).

Nostalgia and bittersweet reminiscence (*saudades*)

Memory should not be confused with nostalgic or bittersweet reminiscent feelings (*saudades* in Portuguese). Nostalgia may be conceived as a feeling that regards experiences associated with objects, events, and/or people who were more present in previous phases of an individual's life, such as in his or her youth, for example. Most nostalgic feelings are attributed to prior experiences associated with objects that in some form have been lost. Such losses may be related to difficulties associated with a particular object, or the fact that the person has adopted a changed pattern of consumption with his/her habits, tastes, or geographical displacements. This critical formation period, which generally occurs between adolescence and the initial stages of adult life, often engenders preferences for a determined object that last for the remainder of a person's adult life (Holbrook and Hirschman, 1982).

Evoking nostalgic feelings involves a direct link to an idealized past and a corresponding dissatisfaction with the present moment. For this observation to occur, evidence of that more favourable past is necessary; that evidence is commonly represented by the reproduction of images or artefacts. Past evocation would not thus be perceived in the artefact but rather felt, when two different moments – past and present – emerge, generally loaded with considerable emotional appeal (Hutcheon, 1998).

For Belk (1990), nostalgia involves a greater emotional weight than a cognitive memory process. It deals with a state that may be elicited by an object, a scene, a specific odour, or piece of music. It links to memories of sacred times in which mystical, powerful, or mythical experiences are recalled, and it prompts feelings of ecstasy or flow. For the author, people customarily acquire and retain objects which, in some way, cause them to remember pleasurable moments from their past.

On the other hand, bittersweet reminiscences, given the variety of feelings they include, exhibit a direct link "with the perception of the passage of time and to implications brought on by such passage within a reminiscent conscience". Such reminiscences would most likely be

something attributed to a feeling from the past. In this process, the past may be invented and improved upon. Thus, an experience from a prior point in time may "return" as better in one's imagination (Nascimento and Menandro, 2005).

Affective memory

Emotions can generate a strong impact upon memory. Studies listed by Levine and Pizarro (2004) show that more vivid autobiographical memories tend to be emotional events that are susceptible to being remembered more frequently, more clearly, and in greater detail than events considered to be neutral.

Considering that memory functions selectively, memories are recalled at the moment one experiences relevant, traumatizing, or pleasurable aspects and which produce meaning for the individual. For Helender and Khalid (2006, p. 554), "many events are purely perceptual and do not require decision making, but there is an affective matching of events that are stored in memory. This helps in understanding and interpreting their significance".

When one recalls a traumatic experience, the emotional episode may present deficiencies which are accompanied with a selective amnesia towards the experience, in the place of amplified memory (Ledoux and Santos, 1998). From the perspective of social sciences, memories of traumatic episodes can remain silent or in shadow zones. A person does not verbalize such recollections out of fear of "not finding a listener, of being punished for that which they report, or a minimum of exposing misunderstandings" with respect to a social group (Pollak, 1989).

Much information recovered in the memory process is imprecise and may be partially reconstructed based on a current evaluation of the occurrence. Previous knowledge concerning a specific subject, such as a common cultural base for example, may affect content recovery and its subsequent interpretation. Previous knowledge at times leads to interference or distortion, and at other times leads to intensification of the memory processes. Thus, it is possible to construct memories which differ from that which really happened or was experienced (Levine and Pizarro, 2004; Sternberg and Borges, 2000).

Affective memory and design

The study of memory has become important in Design, given that memorable experiences may be translated through research and strategies towards new products or improvements to already-existing products. Within this set of relationships, the affect which each person develops with his material world conforms as an experience of subjective origin and contains both negative and positive aspects. Thus, the affective experience may be capable of outlining the quality of the relationship between a person and an artefact, as well as other people, measured by artefacts within the material and immaterial/spiritual polysystem environments.

It is important to observe that memories linked to material objects are not under the designer's control. Memories normally involve relationships with people, places, or events which are important only to a specific individual or social group. However, some "contact points", borrowing the term utilized by Halbwachs (2006), may be appropriate to a certain degree. These contact points, described as common memories among members of a social group, may conform to factors inserted within the design process and may seek out possibilities to recover valuable memorable content.

Downing's research (2003) concerning memories of places and physical spaces suggests that past content supports one's imagination for future aspects. There are places that bring up memories or sensations of well-being, or danger, or fear; locations of vulnerability or power; of dependence or independence; places that satisfy intellectual aspirations; places full of sensuality; places that reflect one's individuality or reveal dependence upon others. Further, everyday objects represent content associated to memories of past events, such as objects that evoke sensorial experiences, thoughts of one's homeland, rites of passage, friendships and loved ones, gifts of love, security, or of breaking away (Holbrook and Schindler, 2003).

In the family arena, "old pictures of grandparents, aunts and uncles, cousins, parents, and siblings… serve to remind one of familiar union, but also the furniture and objects" elicit memories. As parts of a past, furniture and other such objects represent familiar symbols and ties of descent "which may be transcribed as assets which contain a history." They may represent a social situation, a moral order, and may be transferrable from one generation to another (Barros, 1989).

Researching on the love experience, Russo and Hekkert (2007) suggest that recollecting affective memories makes it possible to offer sources of pleasure among people and their products. "People love to use products that hold affective memories and act like reminders of these memories".

For Schifferstein and Zwartkruis-Pelgrim (2008), if interacting with a product is so involving that it stimulates the product's use, then it may also increase the occurrence of memorable events. Thus, strategies to accumulate memories may be examined in product design so that giving/receiving presents on a special occasion transforms that gift into objects to be positively remembered. For example, products utilized within a social context may stimulate interaction such as electronic toys and games that provoke happy memories from experiences with friends and family. A second example would be items that bear physical signs of events, such as a scratch on a leather jacket that reminds someone of a fabulous festive night.

For individual memories, reference points generally presented in proximate memories speak to aspects of sensorial order – noise, scents, and colours (Pollak, 1989). Under this perspective, Mugge et al. (2004) propose inserting odours which bring back memories and the certification that products may age "with dignity".

Research method

This study examined existing affective relationships between people and artefacts in the context of their use, and we focused on items found in domestic environments to which their users relate in daily life. Using an ethnographic perspective – more specifically using ethno-se-

mantics resources – it was possible to reveal some aspects of these relationships.

Ethnography is defined by McCurdy *et al.* (2005, p. 9) as "the process of discovering a describing a culture". Ethno-semantics is the study of microcultures, small groups that exist within a society, through in-depth interviews. This process seeks to infer cultural knowledge from discourses, considered a form of behaviour, and based on cultural artefacts (McCurdy *et al.*, 2005). For Design, the study of speech reveals the subject's bias, the subjective significance of his/her desires, and the significance attributed to affective links with his/her artefacts.

This study's approach understood that neither the environment nor the variables are under total control of the researcher, a different context than found in approaches carried out in "controlled" laboratories. Semi-structured interviews carried out in the informant's environment allow them to feel safe discussing the subjects the researcher suggests.

Two interviews with each informant and other contacts were made by telephone or e-mail in order to learn more data or to clarify doubts, to make new observations or to film and photograph details necessary for a preliminary analysis of the data. The data were analyzed and inserted into comparative tables, based on the recommendations of Miles and Hubermann (1984). To support the qualitative analysis and organization of data collected during the interviews, we utilized ATLAS.ti software (Atlas Ti, [n.d.]). The first step in using the program was to create "codes" that correspond to search parameters found in our initial literature review. Each parameter was subdivided into a range of categories.

The second step was to establish "memos" to categorize the new subjects revealed during the content analysist. Codes and memos are created and linked to the corresponding text, and are then selected by the researcher. The software automatically proceeds to the foundation measuring (grounded) and the data density.

One advantage of this program is that during the analysis of texts produced after the interview transcripts, new categories emerged. Some categories that were considered important according to initial literature reviews lost their status. In qualitative research, especially with the application of interviews, a substantial amount of the data generated is then reserved for future development, given the delimitation of research scope.

Another advantage realized through the software program was the ability to cluster data and to visualize the networks that facilitated and accelerated the development and understanding of theories. Networks were created, bringing together the quotes from each informant about each code or memo and enabling the identification and/or the relocation of concurrent or redundant categories.

A network example with the code "Culture and its categories" is shown in Figure 1; an example of network with the memo "Item 1 – to be taken in case of change" is shown in Figure 2. The citations justifying the reasons why the artefacts were chosen are linked to the names of informants. After the organization of data codes, memos and networks were quantitatively analysed to identify the densities of each category and to note the possibilities of agglutinations of similar content. During these steps, targeted content around theories or themes were gathered, with the objective of achieving research objectives.

In the first stage the participants were solicited to describe their environment and to name the artefacts they considered to be important to them. Item selection was limited to living room environments, according to the logic that western culture uses this environment as one of the most public of domestic locations and the most involved in expressing one's personality. Either an individual's or a family's identity might be presented. In some cases, additional environments such as the pantry, dining room, and kitchen were included, upon the request of the informant.

The second stage consisted of soliciting the informants to select only five items to include in a hypothetical move of residence, as summarized in Table 1. This question sought to reveal with which artefacts the informants maintained the strongest bonds.
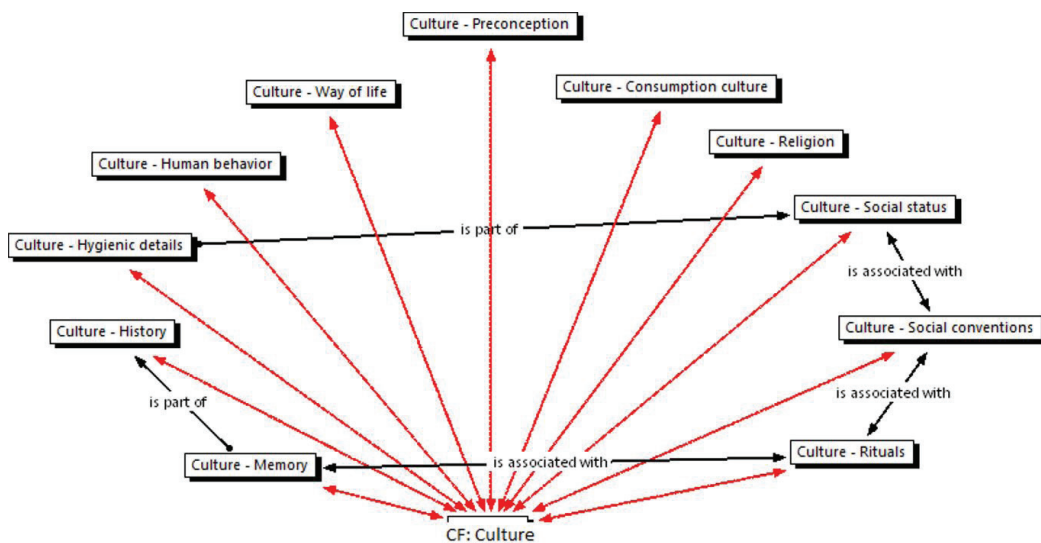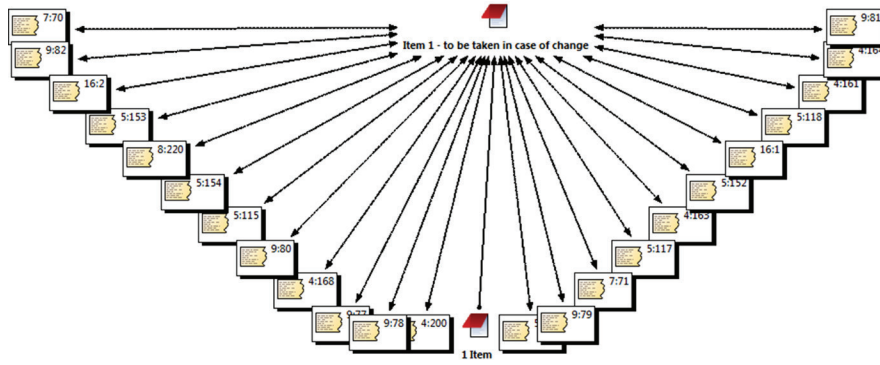

Figure 1. Culture and its categories.

Figure 2. Item 1 – to be taken in case of change.

During the encounters, aspects related to memories of past events emerged for all informants. In the interview with the informant Alice (fictitious names were used to preserve the informants' identities), it must be noted that her daughter was present in some moments of the interview and denied her mother's responses several times. Based on the principle that memories are constructed, reconstructed, and do not always correspond to that which truly occurred (Halbwachs, 2006; Sternberg and Borges, 2000), this study adopted the standard procedure to consider merely the information transmitted by the informants themselves, without utilizing triangulation methods or others which objectify data measurement.

Informant selection

In selecting informants, German descendants living in the Greater Florianópolis area, Santa Catarina, Brazil,

with at least one of their parents, grandparents, or great-grandparents having been born in Germany were established as the criteria for the field study's sample. The seven informants showed no relationship with the researcher or among themselves (Table 2).

The option to involve German descendants was partly justified by the fact that they have different cultural bases than the researcher (who is a Portuguese descendent); thus, German informants provided the cultural estrangement desired in ethnographies. Principally, the choice is due to the large concentration of descendants of German immigrants in the state of Santa Catarina, Brazil, including in the state capital, Florianópolis. It is important to further observe the relative facility in accessing the locus of the research and driving to perform the interviews, since the researcher resides in the capital.

The colonization process within Brazil was implemented through State incentive as of 1818, when Euro-

Table 1. The top five items per informant, in order of importance.

	Alice	Walter	Milton	Cláudia	Suely	Paulo	Mônica
Item 1	Couch	Mother's portrait	Grandfather's paintings	Blue sofa	Latest photos	Mother's dishes	Crystals
Item 2	TV	Family photos	Set of dishes	Shelf TV	Chairs	Disk recorded	Embroidered tablecloths
Item 3	Virgin Mary Picture	Cutlery	Tricycle	TV	Travel souvenirs	Old radio	Souvenir mugs
Item 4	Shelf	Buffet	Tramway	Sound equipment	Writing desk	Radio	Soup bowl
Item 5	Computer	Marble dust pedestal	Dressing table	Dishes and statues of plaster	Everyday crystals	Firewood box	Meat grinder

Table 2. Summary of informant's data.

	Alice	Walter	Milton	Cláudia	Suely	Paulo	Mônica
Gender	Female	Male	Male	Female	Female	Male	Female
Age (years)	46 to 55	46 to 55	46 to 55	65 or more	56 to 65	56 to 65	36 to 45

pean immigrants were directed to agricultural colonies in the south of the country, preferentially. Keeping in mind the immense size of the Brazilian territory and the problems maintaining the southern frontiers, the occupation of territory was a desired consequence of such immigration.

Germans were considered good farmers and ideal immigrants to colonize demographic gaps in the small farm owner regime. However, some difficulties led to isolation, well beyond the linguistic differences. Abandoned to their own fate by Brazilian authorities, who did not offer educational infrastructure to the newly arrived immigrants, these German immigrants created their own schools and thus conserved their maternal language from generation to generation as well as their cultural values (Piazza, 1994). Currently, some descendants from the first colonial families still live near the first settlement locations, with another part of these descendants dispersed throughout the entire Brazilian territory and abroad.

Preliminary considerations

The hypothetical move to another residence provokes a sensation of alert in people towards that which must be left behind and what must be taken. Things that are truly of interest, items that will really be necessary, or possessions that are irreplaceable are prioritized. The inscription of affective memory upon everyday artefacts means that some items are privileged to the detriment of others, as was revealed in the data gathered from the seven informants referring to the items to be taken in the event of a hypothetical move (Table 3).

Of the 35 items selected, 17 represent affective memories (Tables 1 and 3). The close affective connection between children and their parents and grandchildren, for example, is represented and maintained in artefacts such as a pencil drawn portrait done by an artist and given to Walter from his mother. Milton's mother's dressing table, and the paintings created by his grandfather and received as inheritance are another example.

The fact that Walter selected the portrait as the most important item reveals the central place that his mother holds in his memories:

> This picture [Figure 3] was able to capture her characteristics and perfectly represents my mother, not only the way she looks, but also her personality. It is better than a photograph, because I can see her live (Informant Walter).

Maintaining artefacts that hold memories of connections with close relatives many times is more important than maintaining new and recently acquired items of greater material value. For Milton, those items that have not received affective inscriptions can be acquired again:

> I remember when I used to play in her room [his mother's], and the dressing table was always there. The refrigerator and the kitchen can stay [i.e. they would not be taken in the event of a move]. All this I can buy again... and buy better things! (Informant Milton).

The past defines people, together with the present reality and the future that the past makes it possible (Neisser, 1982). Memory has evolved to permit humankind to

Table 3. Reasons for the maintenance items.

	Alice	**Walter**	**Milton**	**Cláudia**	**Suely**	**Paulo**	**Mônica**
Item 1	personal comfort	loved one souvenir	loved one souvenir	personal comfort	family representation	loved one souvenir	loved one souvenir
Item 2	own personal entertainment	family representation	loved one souvenir	personal comfort	aesthetics; design; comfort	personal dream	mother gifts
Item 3	spiritual; temple; loved one gift	old object; family heirlooms; aesthetics	German identity; responsible for the safekeeping of the item	own personal entertainment	travel souvenirs	loved one souvenir	travel souvenir
Item 4	utilitarian criteria	old object; family heirlooms; aesthetics	loved one souvenir; German identity; own creation	own personal entertainment	memento of life stages; dead father gift; aesthetics; utilitarian criteria	loved one souvenir; utilitarian criteria	loved one souvenir; family heirloom; inheritance of a living person
Item 5	utilitarian criteria	memento of life stages; nostalgia	loved one souvenir	inheritance of a living person; memento of life stages	loved one's heritage; utilitarian criteria crystal like a jewel	Tradition; loved one souvenir; utilitarian criteria	loved one souvenir; family heirloom

Figure 3. Walter's mother portrait.

Figure 4. Walter's marble dust piece.

anticipate and answer to future contingencies that cannot be known with certainty (Klein *et al.*, 2010). Upon storing affective content in long-term memory and inscribing it onto artefacts, humankind thus constructs its own frameworks, which thus aid those individuals throughout the remainder of their lives. These artefacts are then intentionally kept to act in the future as tangible markers of personal retrospective memories (Belk, 1990), as exemplified by the marble dust piece selected by Walter and Cláudia's dishes. The items continue to be maintained as a tribute to a happier time which should not be forgotten in the future, as verified by the following comments:

> *The marble dust piece [Figure 4] reminds me of a very good time in my life. It is representative of the time that I lived in São Paulo. A very pleasurable sensation. A nice sensation of time past, nostalgia... but not the nostalgia of wanting to go back to a different time (Informant Walter).*

> *The cake plates I inherited from my mother. They remind me of my adolescence, when I'd make a cake and use the plates. I remember when my mother bought them. I was the one who started using them (Informant Cláudia).*

Artefacts store content related to memories of important places in order to register the history that tells the German colonization process in Brazil. Thus, place memories may be evoked based on their representations in artefacts. Some oil paintings done by Milton's grandfather, for example, represent landscapes from Germany itself and his hometown of Piratuba, Santa Catarina, which received several German families in the beginning of the 20th century.

> *In the case of a move, I would take the paintings that I have from my grandfather [Figure 5]. He threw them away because he thought they weren't any good, but they were beautiful (Informant Milton).*

Family memories merge with collective memories relative to a greater social group. In the same manner in which members of the same group keep common memories that are relived with each re-encounter, memories are inscribed in artefacts that evoke cultural references. These artefacts contribute to outline group frontiers, seeking to avoid its dispersion and extinction, as exemplified by Informant Milton:

> *It is called* Bier unchnapswagen: *beer and cachaça [Brazilian rum] wagon [Figure 6]. It is based on a cart my father made when I was a child and he'd pull me to go to my grandparents' house. The Germans made a cart to pull their children. I created a little wagon with a barrel of draft beer in it. To me, it has very significant meaning (Informant Milton).*

Extending the lifetime of familiar memories through domestic artefacts in the sense that Halbwachs (2006) suggests also provides the possibility to extend the lifetime of the artefact itself. Each moment that the person comes into contact with the artefact, the memory ascends again like a newly-fanned flame.

> *I chose the Buffet, which was from my parent's dining room and the cutlery when it was time to divvy things up [Figures 7 and 8]. I always fancied the cutlery, ever since I was a child. I ended up choosing it because it was my parents and it contained more affective memories as well (Informant Walter).*

> *I like my mother's wedding dishes. It is a reference that reminds me of my family and our lunches together. It is more sentimental. It is one of the oldest things we have (Informant Milton).*

The cutlery and the buffet selected by Walter, as well as Milton's porcelain dishes, represent family and contain inscriptions of affective memories that were transferred from one generation to another. The family memory extends and is transformed with the reuse of the parents' artefacts left as heirlooms. As living links between genera-

Figure 5. Milton's grandfather painting.

Figure 7. Walter's buffet.

Figure 6. *Bier unchnapswagen*: beer and *cachaça* (Brazilian rum) wagon.

Figure 8. Walter's cutlery.

tions, Walter and Milton, beyond becoming the "guardians of family memory" (Barros, 1989), have become co-responsible for extending the lifetime of these items, as can be demonstrated through the two above-cited discourses.

A wide range of types of affective memories can be inserted in different artefacts and bring out both memories that generate negative and traumatic affection as well as positive affections. However, this field study revealed that in those most public domestic environments of the house, informants prefer to keep artefacts that support positive memories. Regardless of differences in gender, age, education, or socioeconomic status, no items that reminded the informants of negative, sad, or traumatic events were ever selected.

Storing affective contents in long-term memory and enrolling them in artefacts, man builds his own reference frameworks that help throughout his life. These artefacts can be kept intentionally to act as tangible markers of retrospective, personal memories in the future or as a tribute

to happier times. At the same time, these memory markers serve as a stimulus for further reflections and suggestions for conversations with others, consolidating the self-identity (Belk, 1990). These "memory returns," borrowing the expression of Jeudy and Janowitzer (2005, p. 88), show a dynamic and not crystallized process when the actions of the present time are mixed with images of the past.

Final considerations

Memory is revealed in this research work as the main component of affective bonds established between people and their artefacts. Artefacts are present in the household to fulfill practical functions, but also, and sometimes especially, to meet aesthetic/symbolic functions related to the maintenance of memories. Affective memories are inscribed in everyday artefacts, making it possible to get in touch with positive memories of past events, with memories of people who are no longer present, and with feelings of belonging to a group and identity claims, among other possibilities.

Affection affirms itself as a central factor in the processes involved with memory and in the manner in which members of humankind perceive their own reality. Each

artefact, place, phenomenon, or event is perceived and given meaning in a different manner, depending on the affective states, the social groups, and the cultures involved with these groups, which affects the information encoding, storage, and retrieval processes.

The domestic environment, considered a symbolic dynamic ecosystem, constitutes a space for the articulation of a range of meanings that have in their artefacts ideal support for symbolic exchange transactions between its members and visitors. Regarded as a refuge and a place that holds privacy, the household environment is a shelter to the particular family history; it contains elements of the past, present, and possibilities for the future.

Studies on people's affective memories are important to Design processes and should go beyond the cognitive aspects, incorporating knowledge from transdisciplinary areas of research, such as Psychology, Neuroscience, Anthropology, Marketing, and the Social Sciences. The cultural and ethnographic approach is also important towards comprehending directly accessed content within the context of product use.

The in-depth study of affect and memory in people's relationships with everyday artefacts within the context of their use may soon occupy a more important role within Design. Such contributions are visualized in developing significant affective strategies in people's relationships with products, as well as their mediation in relating to other people.

Further research is necessary towards constructing methods to facilitate the insertion of factors that benefit the inscription of affective memories on the design process. Beyond the possibility of providing quality relationships among people and their artefacts, affective memory inscriptions upon furniture and other artefacts make sufficiently strong bonds possible in improving individual and social group memory extension, as well as extending product lifetimes.

Such methods, however, do need to be flexible and transdisciplinary, conjugating the complexity, dynamic, and cultural diversity, as well as the contexts to which each individual's and social group's everyday life is inserted.

Acknowledgement

References

ATLAS TI. [n.d.]. Qualitative Data Analysis. Available at: http://atlasti.com/. Accessed on: July 14, 2016.

BARROS, M.M.L. 1989. Memória e Família. *Estudos Históricos*, **2**(3):29-42.

BARTLETT, F.C.; BURT, C. 1933. Remembering: a Study in Experimental and Social Psychology. *British Journal of Educational Psychology*, **3**(2):187-192.
https://doi.org/10.1111/j.2044-8279.1933.tb02913.x

BELK, R.W. 1990. The role of possessions in constructing and maintaining a sense of past. *Advances in Consumer Research*, **17**:669-676.

DAMAZIO, V.; DIAS, P. 2003. www a.site.for.things-that.bring. back.memories. *In:* DPPI'03 – Conference on Designing Pleasurable Products and Interfaces, Pittsburgh, 2003. *Proceedings…* Pittsburgh, p. 138-139.

DOWNING, F. 2003. Transcending memory: remembrance and the design of place. *Design Studies*, **24**(3):213-235.
https://doi.org/10.1016/S0142-694X(02)00053-4

GERO, J.S.; KANNENGIESSER, U. 2004. The situated function–behaviour–structure framework. *Design Studies*, **25**(4):373-391.
https://doi.org/10.1016/j.destud.2003.10.010

GODDEN, D.; BADDELEY, A.D. 1975. Context-dependent memory in two natural environments: On land and under water. *British Journal of Psychology*, **66**:325-331.
https://doi.org/10.1111/j.2044-8295.1975.tb01468.x

HALBWACHS, M. 2006. *A memória coletiva*. 2nd ed., São Paulo, Centauro, 224 p.

HELENDER, M.G.; KHALID, H.M. 2006. Affective and Pleasurable Design. *In:* G. SALVENDY (ed.), *Handbook of Human Factors and Ergonomics*. New York, Wiley Interscience, p. 543-572.
https://doi.org/10.1002/0470048204.ch21

HOLBROOK, M.B.; HIRSCHMAN, E.C. 1982. The experiential aspects of consumption: consumer fantasies, feelings and fun. *Journal of Consumer Research*, **9**(2):132-140.
https://doi.org/10.1086/208906

HOLBROOK, M.B.; SCHINDLER, R.M. 2003. Nostalgic bonding: exploring the role of nostalgia in the consumption experience. *Journal of Consumer Behaviour*, **3**(2):107-127. https://doi.org/10.1002/cb.127

HUTCHEON, L. 1998. Irony, nostalgia, and the postmodern. Available at: http://www.library.utoronto.ca/utel/criticism/hutchinp.html. Accessed on July 14, 2016.

JEUDY, H.-P.; JANOWITZER, R. 2005. *Espelho das cidades*. Rio de Janeiro, Casa da Palavra, 156 p.

KLEIN, S.B.; ROBERTSON, T.E.; DELTON, A.W. 2010. Facing the future: Memory as an evolved system for planning future acts. *Memory & Cognition,* **38**(1):13-22.
https://doi.org/10.3758/MC.38.1.13

LEDOUX, J.; SANTOS, T.B. dos. 1998. *O cérebro emocional: os misteriosos alicerces da vida emocional.* Rio de Janeiro, Objetiva, 336 p.

LEVINE, L.J.; PIZARRO, D.A. 2004. Emotion and memory research: A grumpy overview. *Social Cognition*, **22**(5):530-554.
https://doi.org/10.1521/soco.22.5.530.50767

MCCURDY, D.W.; SPRADLEY, J.P.; SHANDY, D.J. 2005. *The Cultural Experience*. 2nd ed., Long Grover, Waveland Press, 190 p.

MILES, M.B.; HUBERMAN, A.M. 1984. *Qualitative data analysis: a sourcebook of new methods*. Thousand Oaks, Sage Publications, 263 p.

MUGGE, R.; SCHIFFERSTEIN, H.N.J.; SCHOORMANS, J.P.L. 2004. Personalizing product appearance: the effect on product attachment. *In:* International Conference on Design & Emotion, Ankara, 2004. *Proceedings...* Design & Emotion Society, p. 1-15.

NASCIMENTO, A.R.A.; MENANDRO, P.R.M. 2005. Memória social e saudade: especificidades e possibilidades de articulação na análise psicossocial de recordações. *Memorandum*, **8**(abr):5-19.

NEISSER, U. 1982. *Memory observed: remembering in natural contexts*. New York, W.H. Freeman and Company, 433 p.

PIAZZA, W.F. 1994. *A colonização de Santa Catarina*. Florianópolis, Lunardelli, 376 p.

POLLAK, M. 1989. Memória, esquecimento, silêncio. *Estudos Históricos*, **2**(3):3-15.

RUSSO, B.; HEKKERT, P. 2007. On the experience of love: the underlying principles. *In:* DPPI 07 Conference on Designing Pleasurable Products and Interfaces, Helsinki, 2007. *Proceedings…* New York, ACM, p. 12-19. https://doi.org/10.1145/1314161.1314163

SCHIFFERSTEIN, H.N.J.; ZWARTKRUIS-PELGRIM, E.P.H. 2008. Consumer-product attachment: measurement and design implications. *International Journal of Design*, **2**(3):1-13.

STERNBERG, R.J.; BORGES, M.R. 2000. *Psicologia cognitiva*. Porto Alegre, Artes Médicas Sul, 494 p.

WALLENDORF, M.; ARNOULD, E.J. 1988. "My favorite things": a cross-cultural inquiry into object attachment, possessiveness, and social linkage. *Journal of Consumer Research*, **14**(4):531-547. https://doi.org/10.1086/209134