# **Personal Experience and Hermeneutic Design**

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## Abstract

This paper presents an example of a design conceptualization process that draws heavily on personal everyday experience. This activity would not be recognized as valid for research or practice within a rationalist framework, yet it results in concrete knowledge and a design. Phenomenological hermeneutics are used to theorize and validate the relationship between design and experience.

Keywords: Design, hermeneutics, validity.

**ACM Classification Keywords:** H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General terms: Design, theory.

## Introduction

Design methodologies are implicitly accompanied by validation criteria. HCI has a rationalist design tradition which values well-defined, objective, generalizable, and portable procedures and principles to find optimized solutions to a design problem. To contradict this tendency, I present a trace of a design conceptualization process driven primarily by everyday personal experience. The purpose of this presentation is to instigate by giving an example of valid practice from processes that defy validation in the rationalist paradigm. The process I describe will likely be

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intuitively familiar to designers, yet these aspects of design are often black-boxed when it comes to formally reporting results, further contributing to illusions about valid design practice.

# The design project

The designer remembers the charm bracelets her grandmother and other neighborhood women wore when she was a child. The charms were silhouettes of heads of little girls and boys. Each charm bore the name of a grandchild. As a child, the designer was fascinated with the charms and the idea that her grandmother carried her grandchildren with her everywhere she went. On the other hand, on closer look the charms were disappointingly generic cutouts.

When the designer was away from her own children, she wondered about having them closer through such a charm bracelet. What if instead of charms of impersonal silhouettes, this bracelet had charms that held their heartbeats, silently, so that when she touched each charm she could feel a heartbeat just as she did when she put her hand to one of their chests?

When the designer's children were newborns, she would soothe them at night by placing them to sleep prone on her chest or her husband's chest.

Sudden Infant Death Syndrome (SIDS or crib death) is a concern of many parents of newborns. Public health initiatives and pediatricians strongly advise parents to keep their newborns sleeping on their backs for the first months of life in an effort to prevent SIDS.

When the designer expressed concern about her newborn child sleeping prone on a parent's chest, her pediatrician replied that there was nothing to fear because the gentle stimulation of the parent's rising chest and heartbeat would keep the infant from falling into sleep apnea.

The designer was given a hand-me-down infant seat that vibrates using electromotors. The crude vibration soothed her colicky infant and he stopped crying, though the motion seemed crude and jarring.

While tending houseplants, the designer imagines a large jade (rubber) plant with small devices embedded in some of its leaves. Visitors could pluck one of these leaves, hold it to their chest, record their heartbeat into it, and then put the leaf back on the plant. The leaf would throb with the heartbeat of the visitor. Other visitors could touch the heartbeats of the visitors before them. After a time, the jade plant would be throbbing with the heartbeats of many different visitors.

To actualize the heartbeat charms, the designer thinks about sound charms similar to the jade plant leaves, possibly using a material like that of the jade leaf as a diaphragm. From her training in polymer and textile engineering, she makes the association: rubber (plant)  $\rightarrow$  elastomer  $\rightarrow$  polymer  $\rightarrow$  fiber  $\rightarrow$  textile.

The association of heartbeat and textile prompts the designer to design an infant soothing and SIDS/ premature apnea therapy blanket. The blanket is meant to be an infant swaddler or other contact textile. The blanket will transmit a low frequency sound wave of a heartbeat recorded from a parent or other caregiver. This sound wave will manifest in the blanket as inaudible felt pressure.

The designer works to develop an engineering model of sound in a textile in order to find the mechanism that will make a blanket pulse with heartbeat. She follows a traditional engineering process, adapting calculations from the literature and devising lab experiments.



While walking with a friend and carrying a nearly empty cardboard coffee cup, the designer feels her friend's voice vibrating the walls of the cup as she is speaking. Having discovered the mechanism that will create the heartbeat in the blanket, the designer abandons the engineering model.

The experience with the coffee cup reveals that the low frequency heartbeat sound waves could be transmitted from a transducer such as a speaker or piezoelectric element through sealed air pockets. This mechanism would create the feeling of heartbeat pulses. A miniaturized grid of transducers would be cushioned by the air pockets within a quilted blanket. Thus the blanket would remain soft and flexible.

#### Discussion

We can see a constellation of experiences, some conceptual, some perceptual, some from memory, participating in the design outcome. Some experiences are culturally shared, some are from domain knowledge, and some are idiosyncratic. Much HCIrelated work explores meaning and experience on the part of people acting with technologies in the everyday world, yet the situatedness and experiences of the designer creating technologies for this everyday world remain under-explored. I suggest that this is because the rationalist legacy of traditional HCI does not recognize the validity of the designer's situated experiences. These experiences do not meet rationalist validity criteria such as objectivity, generalizability, and portability of process. Yet the social and cultural situatedness of the designer provides an important connection to the situatedness of the technologies she is designing. This relationship should not be bracketed out.

We can see from this example how design from experience is highly interpretive, or hermeneutic. These

experiences have meaning to the designer on her own terms, but they also have meaning in relation to the evolving design concept. In turn, they change and evolve the concept as it reflects meaning back on them. For example, the memory of the charm bracelet has meaning for the designer, but once she projects the idea of replacing the silhouettes with heartbeats, the memory of the charms is changed. The experiences with the sleeping infant were meaningful on their own, but unintelligible with respect to the design until a later connection was made between sound "charms" and textiles. Then these experiences were interpreted by the designer as meaningful to the design. They in turn guided the design toward SIDS/ apnea therapy which then became the primary design concept.

In hermeneutic frameworks, phenomena are understood through the meaning-making activities of the people experiencing them. Hermeneutics traditionally refers to the interpretation of texts. The phenomenological philosophers Heidegger and Gadamer developed hermeneutics beyond textual interpretation to include the everyday interpretive meaning-making of our experience. The hermeneutic circle, as developed by Heidegger and Gadamer, describes how our interpretation of the world depends upon co-emergent, interdependent, partial understandings of parts and whole. We cannot understand the meaning of part of an event until we understand the whole, and we cannot understand the whole until we grasp the meaning of the parts. Another way to understand this circular relationship is to consider that we cannot understand the meaning of a concept until we understand its context, but the context is made up of the concepts that give it meaning. Any act of understanding consists of this circular interplay between inseparable parts and wholes. The hermeneutic circle is not a method, but is prior to logic and methods. It describes something integral to

thoughts, perceptions, actions, and interpretations. It is inseparable from experience.

## Design as a hermeneutic circle

Design theorists Snodgrass and Coyne describe design activity as a hermeneutic circle [1]. They quote Gadamer:

A person who is trying to understand a text is always performing an act of projecting. He projects before himself a meaning for the text as a whole as soon as some initial meaning emerges in the text. Again, the latter emerges only because he is reading the text with particular expectations in regard to a certain meaning. The working out of this fore-project, which is constantly revised in terms of what emerges as he penetrates into the meaning, is understanding what is there [2].

Snodgrass and Coyne read the above quotation with "design" in mind as "text." They consider a design project as a project(ion) of experiences into the anticipated whole of the design. This gives us a portrait of the designer and the design process as embedded in the world of experience instead of preceding, detached, or over and above it as in other design paradigms.

Many of our familiarities, experiences, thoughts, associations, and daydreams remain in the background of our experience unless they are called out by some relevancy. This is also true for the designing process. And then once these elements are part of the design, they form the background considerations that bring further things to light. Michael Polanyi, a scientist and philosopher of the phenomenology of tacit knowledge, describes our ability to bring background familiarities to the topic at hand:

This power resides in the area which tends to function as a background because it extends

indeterminately around the central object of our attention. Seen thus from the corner of our eyes, or remembered at the back of our mind, this area compellingly affects the way we see the object on which we are focusing. We may indeed go so far as to say that we are aware of this subsidiarily noticed area mainly in the appearance of the object to which we are attending [3].

As in the example presented in this paper, some of this background will be culturally shared, some will be domain knowledge, and some will be idiosyncratic.

# Conclusion

The example presented here is not intended to be prescriptive, but to broaden the horizons of our understandings of practice and validity. Personal everyday experience, typically considered too unreliable in rationalist paradigms, is yet able to generate a valid design as well as knowledge about experiential design as a hermeneutic practice.

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#### Citations

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