Design is Not about Fixing Problems: A Call for the Quality of Life

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Abstract
This position paper discusses how we make sense of design and contrasts the idea of design as a means to address needs and to solve specific problems, with Christopher Alexander's proposal of design as a transformation of an overall social configuration that creates the quality of life. I argue that Alexander's design paradigm, naturally, puts values to the center of the design process and that this paradigm, therefore, supports value-sensitive design processes.

Keywords
Design, Living Structure, Pattern Language

Introduction
Charles Eames, the influential industrial designer, architect and filmmaker, once said that "the recognition of need" [9] is the primary condition for the practice of design. Human needs are the designer's motivation for the creation of a new product or service.

Following this motivation, we can rationalize the design process as the creation of a solution to a problem. The design fulfills a need; it addresses an aspect of the practice that is not working well; it fills a putative gap in the design's context. Consequently, modeling a form that closely fits this gap becomes the designer's task. Designers need to closely study the gap and users'

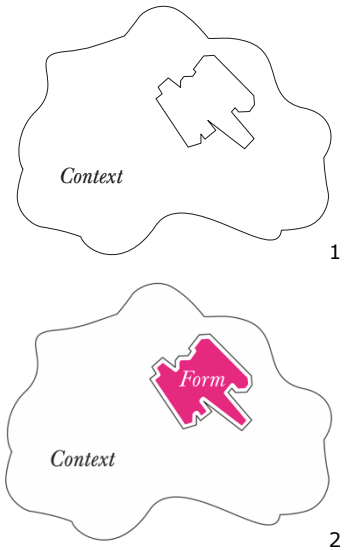

Figure 1: When thinking about design as a means to address a need we can envision a gap of the design's contexts (1) that needs to be clearly defined so that the form perfectly fits (2).

requirements to achieve that goal. To this day, most design frameworks, such as the human-centered design process specified by ISO 9241-210 [12], follow this paradigm of design.

With this paper, I want the start a discussion about this dominant design paradigm altogether, and especially for value-sensitive design processes.

What's Wrong with Solving Problems?

A paradigm defines the questions asked and the methods chosen. It defines what is a central concern and what is in the periphery. It makes certain things natural while others require increased effort. Consequently, a paradigm of design that puts the human need and the concept of a gap in context at its center will thrive at solving problems [Fig 1]. There are, however, some potential downsides of this concept.

First, the focus on the problem pictures the existing context faulty. As design solves the problem, designers themselves are outsiders who solve other people's problems. This definition of the roles of designers, as problem solvers, and users, as recipients, may hinder a close, sensitive collaboration and a cooperative problem solving that mutually involves users and designers.

Second, the focus on a particular problem may decontextualize the design from the rest of the context. With the focus on the solution to the problem, the overall context is a secondary concern. The focus on the need that calls for design may render other needs, such as values, less important. While these needs may not be directly connected to the design they could be very relevant for it, nevertheless.

Third, when solving problems, the healthy, the good parts of a practice are not in the focus of attention. Indeed, when addressing this one particular problem, the solution could also negatively affect other aspects of the practice. Instead of learning from the practice and valuing it as a resource for design, the solution is expected to come from the outside.

Fourth, the model suggests that a need is a static problem, something that can be understood and resolved. When considering that the gap could also alter continually and radically change its form, or that design and context are highly interactive and shape each other, the idea of design as a problem-solving activity reaches its limits as the problem becomes wicked [12].

Finally, the model oversimplifies the challenge of design. Instead of a clearly defined border between form and context, the definition of what is context and what is form is not predefined. Also, instead of creating one form to fill one putative gap, designers are usually confronted with multiple, overlapping contexts and forms.

In the past, especially people concerned with the social aspects of design, such as ethics, meaning and values, dealt with exactly these downsides that turned out to be crucial in value-sensitive design processes (e.g. [9, 10]). Methods were suggested to make technology design more participatory and empathic and to create a closer connection between users and designers. Researchers called for designers to zoom out to a wider configuration; they have been talking about the importance of meaning and values and how these issues go beyond the obvious needs and problems that

Figure 2: Which of the two seems to generate a greater feeling of life in you? Which of the two makes you more aware of your own life? Which of the two induces a greater harmony in you, in your body and in your mind? As with the two chairs (Lovegrove Supernatural (top) Eames EA 117 (bottom)) in this example, Alexander [2 p355] shows that the quality of live is a universal property of everything.

designers might look at initially. Some have suggested considering the context as a resource for solutions; others proposed design processes that are more agile and iterative to adjust to the interaction between the designed artifacts and their contexts.

Rather than following this path of adding more methods accounting for aspects that are periphery to the problem-solving model of design, I put into question the underlying design paradigm that left out these issues in the first place. Here, the work of architect Christopher Alexander provides an alternative.

Designing Living Structure

Alexander discovered what he first coined *"Quality Without a Name"* [1] and in his recent works refers to as *"Living Structure"* [2] and *"The I"*. This universal and timeless quality of life describes a freedom from inner contradictions that occurs "*when we are having a good time, or when we are experiencing joy or sorrow—when we experience the real"* [2 p37]. The quality resonates with human life and occurs gradually in all objects or configurations. Alexander shows that people, when asked to compare the living structure of objects, situations or experiences, have great consensus about the level of the quality [Fig 2].

Based on this discovery, Alexander derives his paradigm of design: *"My fundamental proposition […] is that our environment, our built world, must originate with the ideas society to life. […] That means that the environment, viewed as a microcosm, must consist of many small relationships among things. […] The more we are able to rehearse our social and psychological relationships and reinforce them, the more we will be comfortable, at ease and whole within the fabric of all that we have made for ourselves. […] Logically, this is a very simple scheme, we need to access and reckon up the human and physical relationships on which we thrive, then we need to construct, realistically, the physical relationships which, when built into the fabric of our environment, will nourish our social and emotional lives."* [4]

The design process thus is not aiming at a perfect fit between form and context; it is not based on a search for requirements; there is no envisioned gap in the existing context that needs to be filled. Instead, design first recognizes the aspects of the overall configuration that bring it to life and then evolves the entire social configuration by growing this living structure [Fig 3]. *"The idea is that a structure-preserving process on the one hand transforms and preserves structure and on the other hand the idea is that this structure-preserving transformation then also enhances the whole"* [3 p255]. For Alexander, creating configurations with a high level of the quality of life is the overall goal and value of design.

Alexander's famous pattern language concept, consequently, is much more than a mere catalog of design solutions. It can serve as a means to capture the quality of life in social and physical configurations. As a tool for structure-preserving transformations and the creation of living configurations, pattern language allows discussing design-related changes [6].[1]

[1] [5-8] further explains the pattern language design approach, its relevance for the design of computing artifacts and an application for the design of a navigation system for frontline firefighters.

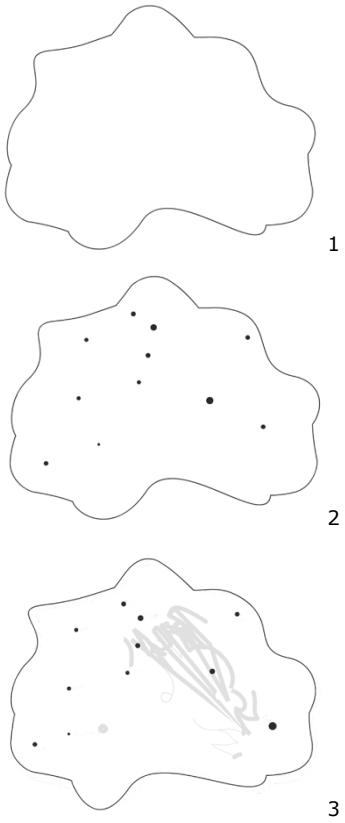

Figure 3: For Alexander, design is not about filling a gap (1). He wants to understand the structure that makes configurations work and identifies related centers (2). The design process gradually transforms this configuration and increases its level of living quality (3).

Conclusion

As described before, a paradigm defines what is a central concern and what is in the periphery. It makes certain things natural while others require increased effort. In Alexander's design paradigm the methods developed by the value-sensitive design community, such as participatory, empathic and ethnography-informed design, do not only *account* for values to fix the shortcomings of a design process that is otherwise busy filling gaps, they instead *become the core elements* of the design process. Both steps proposed by Alexander, the identification of the living elements and their transformation, intrinsically call for a mutual, careful, value-sensitive process of design. Additionally, in the new paradigm, design gains the universal goal to nourish life in configurations. Design is no longer neutral, as it never was.

Certainly, handling the complexity of making social configurations, such as entire organizations, more alive, is a more ambitious task than solving a specific problem, such as introducing a new computing system. The new perspective does, however, acknowledge the manifold effects that these new systems have on their context, regardless of the chosen perspective. The specific human need, then, could still serve as the primary condition and motivation for design, as described by Charles Eames, yet it would not drive the entire process.

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