

Application of Methods of Value Orientation in Different Stages of Design

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Abstract:

Objective: This paper studies and sorts out when to apply the problem-solving paradigm not only to propose the application of problem-solving methods, but also to apply the value orientation of meaning construction not only to understand the application of cultural expression of emotion methods in various stages of design situations. **Methods:** In the specific research process of this topic, the problem solving paradigm - problem solving paradigm was sorted out by sorting out the focus of problem solving paradigm and meaning building paradigm in design paradigm. Meaning construction paradigm - meaning construction paradigm; Several groups of design cases that cross the problem solving paradigm and the meaning construction paradigm are summarized. **Conclusion:** Whether based on problem solving or meaning construction, if we can properly intervene in cultural meaning in the design process, fully understand the application of two paradigms in different design scenarios, and promote design innovation with different design paradigm strategies, then the possibility of producing excellent design results will be increased.

Keywords:

Design Paradigm, Meaning Construction, Solve The Problem, Cultural Significance

1. Introduction

The word “paradigm” has been used many times in Kuhn’s *The Structure of Scientific Revolution*. The meaning of the word “paradigm” has many different levels. When Kuhn discussed the essence of conventional science, he further explained the “paradigm”: “paradigm” is an accepted model or pattern, “it is the scientific achievement generally recognized by the scientific community, and it is the basis for further activities in a certain period of time” [1]. In design, design paradigms can be divided into problem-solving paradigms that actively ask questions based on the current situation in design research, find solutions according to needs, and design concepts dominated by culture or personal emotions, and meaning construction paradigms that use metaphor and irony to design. The difference between the two design paradigms lies in the differences of theoretical basis, value orientation, thinking mode and behavior mode.

2. Development of Design Paradigm

Kuhn's concept of paradigm is based on the transformation of his thinking mode in scientific research. "Paradigm" is the framework of ideas and thinking patterns shared by the scientific community, and it is inseparable from the scientific community. At the same time, the basic characteristic of "paradigm" is incommensurability, that is, successive "paradigms" are incompatible. After *The Structure of Scientific Revolutions*, Kuhn constantly enriched his research achievements, and replaced "paradigm" with "dictionary" to realize the linguistic turn of his research. [2]

2.1. The embodiment of problem-solving paradigm

Based on the paradigm theory mentioned by Kuhn in *Revolution of Natural Science* in the last century and the design theory by Simon in *Artificial Science* in 1960s, design development has been regarded as a process of "finding problems and solving them" [3].

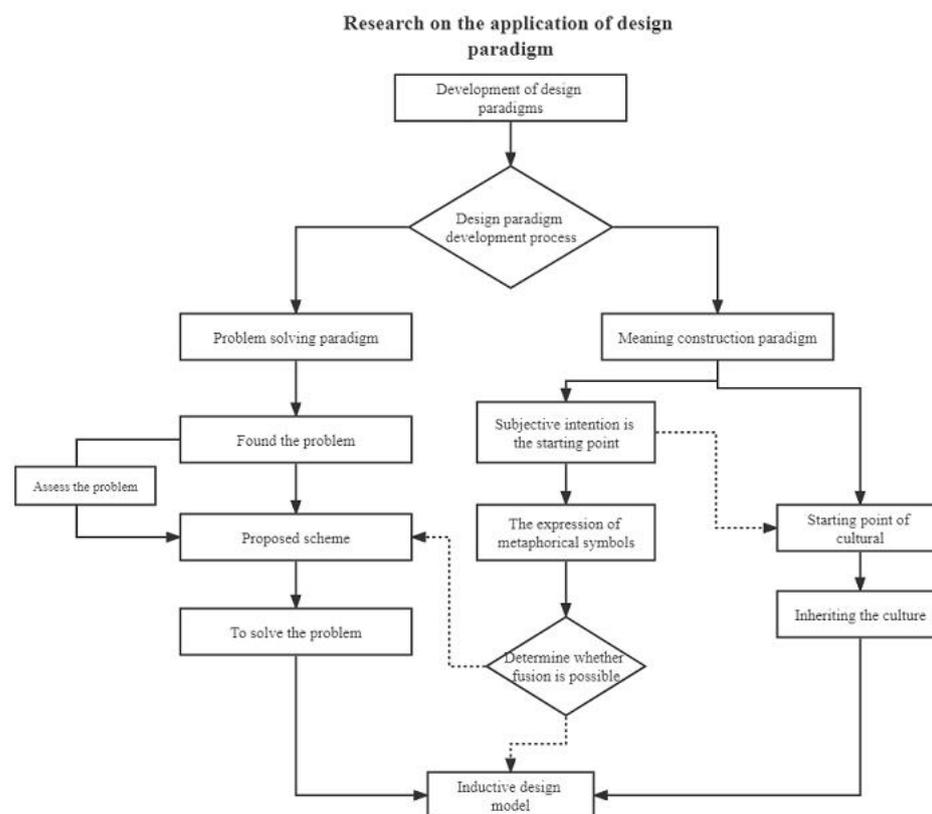


Figure 1. Development process of design paradigm.

In design, the design based on problem solving usually needs to go through several processes: evaluating the current situation—defining the problem—proposing the solution—the designer or design team evaluates the solution—and finally completing the design.

Therefore, the problem-solving paradigm is to define and limit a design problem through "design research" and solve the problem through continuous deduction.

2.2. The embodiment of the paradigm of meaning construction

The paradigm of meaning construction usually shows the emphasis on culture and the expression of ideas, etc. Its meaning elements are mostly designers' subjective

intentions; In this stage, subjective elements are transformed into symbols; Finally, the final form of design is expressed by metaphor and other means.

Therefore, if a certain (or multiple) abstract value is summarized and expressed in the context or context, the final effect may be the expression or symbolic form of culture.

3. Comparative analysis of design cases

3.1. Case of Through Design Based on Problem Solving Paradigm-Taking the German Manufacturing Alliance as an example

At the first annual meeting held in 1908, deutscher werkbund made clear his recognition of machines in his opening speech, and pointed out that “the purpose of design is people, not things”, and that industrial designers are the servants of society, not the social masters that many plastic artists think they are. These views made manufacturing alliance carry out industrial design with the attitude of founders and promoters of modern design.

At the same time, it also shows the design attitude of the German Manufacturing Alliance: people-centered, problem-solving as the starting point for design. Therefore, I will take the German Industrial Alliance as the representative school of problem-solving paradigm for case analysis.

3.1.1. Industrial Design Case of German Manufacturing Alliance

Baehrens has designed many industrial products, and the simplicity of architecture has also been used in the design of industrial products. Baehrens believes that the essence of industrial design should be simple appearance and practical function, from which the design concept of functionalism (functionalism) has been derived.

The change of design consciousness is inseparable from the background of society, economy and culture. Practical and functional design concepts will inevitably appear in the industrial age environment at that time. Baehrens has designed a large number of daily life appliances, such as electric kettles, etc., with the aim of solving problems and realizing functions, and started a new era of industrialized and modern production. 100. The electric kettle series designed by Belence can be used with round bottom, oval bottom, hexahedron and other modules, and can be used with other kettle accessories and some parts of the kettle. On the one hand, the balance not only takes into account practicality, but also the electric kettle series designed by him meets the requirements of mass production and standardized production on the premise of mass production of large machines. [4]



Figure 2. Electric kettle designed by Baehrens (1909) (image from the Internet).

3.2. Design analysis based on meaning construction paradigm running through design-taking post-modernism product design style as an example.

In the late 1950s, the rapid economic development led to changes in people's lifestyles. In order to meet the needs of the market and people's consumption concept, new design styles are gradually entering the market and people's lives to meet the different needs of different people. [5]

Cultural factors directly affect product design style, which is the important condition for the emergence of post-modernism product design style. Anti-mainstream cultural ideas have contributed to the diversification of product design styles; The style characteristics of product design are influenced by irrational thinking; Combine art with life, so that the product style gradually becomes secular and market-oriented.

3.2.1. Design Representative of Meaning Construction Paradigm

Italian designer Sottsass's design in the middle and late period is a typical initiator of meaning construction. In 1950s and 1960s, Sottsass visited America many times, and was influenced by pop art and popular culture. In 1961, Sottsass made a three-month visit to India while learning more about Indian tantric art. As a result, Sottsass strengthened his suspicion of rationalism in the previous modernism, and began to explore design as a platform for sensibility and communication. His design became more humanized and colorful from the rigor of functionalism. .

Modernists believe that design can determine lifestyle and enhance its influence on ideology, but all these are abhorrent in Sotheby's view. They believe that design can determine lifestyle. He pointed out that "the table needs four legs, according to the functional requirements, but no one said that all four legs must be the same". For example, Sottsass got inspiration from pop art and designed a series of bookshelves, tables and wardrobes, which were exhibited in Milan in 1965 and 1966 respectively; Designed the prototype of furniture series (1970) for "Grey" of Nova Company in portos, and was inspired by Indian mystical ceramic "Dark Ceramics" (Dark Ceramics). In these designs, he explored new design methods, emphasizing that "the priority of design is thought". [6]



Figure 3. Sottsass's design works.

3.3. Problem solving-a case study of cross-design of meaning construction

In the process of design, any design will not be a complete paradigm throughout the whole, and even the design with problem solving as the starting point will certainly involve the designer's personal feelings and culture.

3.3.1. Case Analysis of nendo Design Studio

All along, Coca-Cola has been recycling used bottles. And some of these recycled bottles can no longer be used. nendo Studio, the design studio in charge of Oki Sato at that time, undertook the project, and the design goal was to transform these reusable bottles into tableware.

In order to achieve this goal, Oki Sato put forward a scheme of "maximizing the value of recycled glass". However, due to the particularity of glass materials, if these recycled glasses are used completely, bubbles or skew will inevitably appear. This was originally the biggest problem encountered at that time, and everyone was helpless. However, after repeated attempts, it was discovered that the real charm of recycled glass would be here.

In the process of design, Oki Sato chose the concise shape as far as possible, and the color directly retained the unique "Georgia Green" of the glass itself. At that time, the tableware made according to Oki Sato's design looked like the bottom of the Coca-Cola bottle by directly cutting off the top half of the bottle. In a word, whether from the color or texture, it can be seen at a glance that it is a Coca-Cola product. One thing that Oki Sato is very concerned about is that there is a circle of embossing at the bottom of the bottle that plays an anti-slip role. Although these embossing are usually inconspicuous, everyone who picks up the coke and drinks it off can notice it. The reason why these circular pits are preserved is that people can think of the bottom of Coca-Cola bottle when they see the bottom of the cup after drinking water, which also conveys the designer's environmental protection idea about recycling, and also hopes that users can feel the intimate contact between people. [7]

In the design process of this Coca-Cola reuse, Oki Sato started with the problem-solving paradigm, was inspired by the material and color in practice, amplified the texture of the material and advocated the concept of recycling environmental protection, so that the personal feelings in the meaning construction were involved in the design process. The final result not only retained the practical nature of the object, but also increased the interest and environmental protection of the product.



Figure 4. Reuse design of coca-cola bottle.

4. Transformation and Application of Design Paradigm

Through case analysis, the conclusion is drawn, which is mainly divided into: problem solving-meaning construction-problem solving; Meaning construction-problem solving-meaning construction; Solve the problem to the end; Four groups of cases of meaning construction and implementation. Compare the results of the three groups of cases, and summarize the design patterns of the three groups of cases.

4.1. Transformation of design paradigm

By clarifying and exploring the similarities and differences of the two paradigms in theory, combing the design process of the two paradigms, and summarizing the intersection of the design paradigms, we can design more efficiently. In recent years, people-centered design mode to solve problems has been widely popular, and it has taken a dominant position in design research. However, in the face of increasingly open and complex problems, design practice itself is also developing rapidly. When the problems involve radical innovation, the user-centered thinking can't solve all problems. Therefore, if different aspects of design paradigm can be applied, the possibility of excellent design results will be increased.

4.2. Application of design paradigm

There are many definitions about design, and design is universal. Every one of us is engaged in design, such as designing the main content of a course and the whole rhythm process. Shopping malls design customers' walking routes and so on; Design is a purposeful activity. When there is a certain need or dissatisfaction with the present situation of things, and people realize that measures must be taken to solve the existing problems, people begin to design. It is the transformation of design concepts and ideas. American architect Louis Kahn regards design as the process in which transcendental thinking and feeling forms produce forms and realize them.

Design is a complex activity, and some aspects of other paradigms will be integrated when one paradigm is used for design. Therefore, the subject will summarize and compare the application of problem-solving paradigms in each stage of design situation, namely, when to put forward problem-solving methods and when to use the value orientation of meaning construction to recognize culture and express feelings.

5. Conclusions

We have carried out three groups of design cases: problem-solving paradigm, meaning construction paradigm, and strong designer's personal thoughts based on problem-solving paradigm. Through comparative analysis, we can conclude that the design form with problem-solving paradigm is more concise, which embodies functionality and practicality, but also reveals indifference. Reflect this colorful and changeable design form through meaning construction; Problem-solving paradigm starts from the paradigm design of integrating meaning construction, and it reflects the interest and novelty on the basis of function. The above examples also show that different design paradigms have important influences on the design results.

Designers' ideas have been influenced by various human-centered factors in recent decades, such as social culture, economy, environment and so on. User-centered design is prevalent, so users become the main reference for designers in the concept generation stage. Many user-centered design studies emphasize the dominant position of users in design behavior. Although user-centered design can produce 'not bad' design, nowadays designers are faced with a more multidimensional design environment, and user-centered design will limit the development of design practice.

To sum up, if the design problem is defined solely from the user's point of view, the design is very dependent on the user, and becomes a kind of service that the user needs. Therefore, whether it is based on problem solving or meaning construction, if we can properly intervene in cultural meaning in the design process, fully understand

the application of two paradigms in different design scenarios, and promote design innovation with different design paradigm strategies, it will increase the possibility of producing excellent design results. Design should have a certain orientation. When we explore design, we should not stay in the formal meaning, but make design really a part of our life.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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