

Research on Design Strategies for Exploring User Emotions and Experiences from the Perspective of Product Morphology and Semantics

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Abstract: This study aims to explore design strategies for user emotions and experiences from the perspective of product form and semantics. By analyzing the role of product form in conveying information and triggering user emotions, this article aims to reveal the relationship between emotional experience and form semantics in product design. The research methods include literature review, user survey, and product form analysis. Through case studies of different product forms, we will delve deeper into the emotional reactions that users experience when facing products of different forms, and explore how to guide users to obtain richer and more positive experiences through design strategies of form semantics.

Keywords: Product form, Semantics, User emotions, Experience design, Design strategy

1. Introduction

As a bridge between users and products, product design is not only about functionality and practicality, but also about user emotion and experience. Product form, as one of the cores of design, carries rich semantic information and influences users' perception and interaction. However, how to achieve meaningful guidance of user emotion and experience through accurate shaping of product form semantics is still a topic worthy of in-depth study. This paper will discuss the relationship between product form semantics and user emotion, and put forward corresponding design strategies to provide more scientific and effective guidance for product design.

2. Research status and methods

In today's fiercely competitive market, the success or failure of product design is not only related to functional practicality, but also needs to consider user emotions and experience. As an important factor in design, product form and semantics directly shape user cognition. Understanding and applying product form and semantics is crucial for enhancing user emotional experience. With the advancement of technology, products have surpassed functionality and become tools for emotional expression. Deepening the study of product form and semantics, exploring emotional elements, can help design products that better meet user expectations and improve market competitiveness[1].

At home and abroad, research on product design and user emotional experience has achieved certain results. In foreign countries, some advanced design concepts emphasize conveying brand value and user emotions through product form, such as Apple's product design and some innovative enterprises in Japan. In China, some scholars have also conducted research on product design and user emotional experience, but most of them remain at the level of theoretical exploration, lacking empirical research support. However, current research on the relationship between product form, semantics, and user emotional experience is still relatively scattered, lacking systematicity and depth. Especially in the proposal and validation of actual design strategies, there is still a significant research gap.

This study will focus on the relationship between product form semantics and user emotional experience. Through literature review and empirical research methods, we will explore in depth the impact mechanism and implementation path of product form semantics on user emotional experience. The specific research methods include literature review, empirical research, and data analysis. By using statistical and qualitative analysis methods, the collected data is analyzed and interpreted to reveal the relationship between product form, semantics, and user emotional experience, providing guiding

principles and methods for product design[2].

3. Product form semantics and user emotion

3.1. The concept and characteristics of product form semantics

The semantic meaning of product form refers to the emotions and meanings conveyed by the appearance and design of the product. Its features include the combination of materials, colors, lines, and other elements, as well as the compatibility with user emotional needs. The design of product form and semantics aims to evoke emotional resonance among users through the expression of appearance and shape, enhance the attractiveness and emotional connection of the product, and thereby improve user experience and satisfaction.

3.2. The relationship between user emotions and product form semantics

The relationship between user emotions and product form semantics is closely related. Product form semantics convey specific emotional information through elements such as appearance, material, and color, stimulating user emotional experiences. When users come into contact with products, they are influenced by the form and semantics of the product, resulting in emotional experiences such as pleasure, security, and comfort. The symbolic, emotional, and informational characteristics of product form directly affect the emotional experience of users, which in turn affects their perception and evaluation of the product. Through the design of product form and semantics, users can be guided to generate positive emotional experiences, enhancing the attractiveness and competitiveness of the product.

3.3. The impact mechanism of product form and semantics on user emotions

The impact mechanism of product form semantics on user emotions mainly includes the following aspects: Firstly, the symbolic features of product form will convey specific emotional information through cultural symbols, symbolic meanings, etc., triggering emotional resonance and identification among users; Secondly, the emotional characteristics of product form can directly stimulate users' emotional experience, such as conveying joyful and warm emotions through soft curves, warm colors, etc. Once again, the informational features of product form influence users' cognition and evaluation of the product through information such as structure, function, and use, thereby affecting their emotional experience; In addition, the consistency, coherence, and coordination of product form can also have an impact on user emotions. For example, the lack of coordination in product form can cause discomfort for users, while a coordinated form can enhance their sense of pleasure.

4. User experience and product form semantics

4.1. The concept and characteristics of user experience

User experience refers to the subjective feelings and emotional experiences that users experience when using a product or service. Its characteristics include emotional, personalized, comprehensive, and dynamic. Emotionality refers to user experience that is not only rational cognition, but also includes emotional pleasure, satisfaction, and a sense of security. Personalization refers to the fact that user experience varies from person to person, and different users will have different experiences under the same product or service. Comprehensiveness refers to the user experience being the result of a combination of multiple factors, including product functionality, aesthetic form, interaction design, etc. Dynamicity refers to the fact that user experience changes over time and usage scenarios, and is a dynamic and continuous process.

4.2. The impact of product form and semantics on user experience

The form and semantics of a product have a direct impact on the user experience. Firstly, the appearance design, material selection, color matching, and other factors of the product will directly affect the user's first impression of the product, thereby affecting their emotional experience and overall satisfaction. Secondly, the symbolic features of product form will convey specific emotional information through cultural symbols, symbolic meanings, etc., triggering emotional resonance and

identification among users, thereby affecting their emotional connection and investment in the product. Once again, the emotional characteristics of product form can directly stimulate users' emotional experience, such as conveying joyful and warm emotions through soft curves, warm colors, etc., enhancing emotional resonance among users. In addition, the informational features of product form can also affect users' perception and evaluation of the product, thereby affecting the overall user experience.

4.3. The Design strategy of product form semantics and optimization of user experience

The design strategy for product form and semantics should include the following aspects: first, designers need to have a deep understanding of the cultural background, emotional needs, and personalized preferences of the target user group to ensure that the product form can resonate emotionally with users. Secondly, designers need to pay attention to the symbolic features of product form design, and convey specific emotional information through the reasonable use of symbols, symbols, and visual language elements, triggering emotional resonance and identification among users. Once again, designers need to pay attention to the emotional characteristics of product form design, conveying joyful and warm emotions through soft curves, warm colors, etc., and enhancing the emotional experience of users. Finally, designers need to pay attention to the informational features of product form design, ensuring that the product form can intuitively and clearly convey information about the structure, function, and purpose of the product, in order to enhance user awareness and evaluation of the product. To optimize user experience, designers should combine the design strategy of product form and semantics, starting from the emotional and personalized needs of users, to design product forms that can trigger emotional resonance and improve user experience. In addition, designers should continuously optimize the product form through user research, prototype testing, and other methods to ensure that the product form can effectively communicate with users, achieve emotional resonance, and optimize the user experience[3].

5. The Design strategies for product form, semantics, and user emotions

5.1. The design principle of product form semantics

The design principles of product form and semantics include the following aspects: first, the principle of emotional expression, that is, the product form should be able to effectively convey the emotional information that designers expect, such as warmth, modernity, vitality, etc., to trigger emotional resonance and identification among users. Secondly, there is the principle of cultural symbols, which means that the product form should conform to the symbolic language and symbolic meaning of the target user's cultural background to ensure that the product form can create emotional connections with the user. Once again, the principle of functional expression is that the product form should be able to clearly and intuitively convey information about the structure, function, and purpose of the product, in order to enhance user awareness and evaluation of the product. Finally, the principle of personalized experience is that the product form should be able to meet the personalized needs of users, achieve emotional resonance and personalized connection with users through differentiated design elements and emotional expression. In the process of designing product form and semantics, designers should follow the above principles, combine user emotional and personalized needs, and design product forms that can trigger user emotional resonance and improve user experience. At the same time, designers should also continuously optimize the product form through user research and prototype testing, ensuring that the product form can effectively communicate with users, achieve emotional resonance, and optimize the user experience.

5.2. The application of product form and semantics in different product types

The application of product form and semantics in different product types is diverse. In home products, the design of product form and semantics can convey warm and comfortable emotions through elements such as color, material, and lines, in order to create a livable home environment. In automotive products, the design of product form and semantics can convey emotions such as dynamism and stability through elements such as appearance and body lines, in order to meet the personalized needs of users for cars. In electronic products, the design of product form and semantics can convey modern and technological emotions through elements such as exterior design and button layout, in order to enhance user awareness and evaluation of the product. The design of different product types

needs to consider the needs and emotional demands of the target user group, so the application of product form and semantics also needs to be flexible and varied according to the different product types. Designers need to combine the usage scenarios, functional characteristics, and emotional needs of users to design product forms that can resonate emotionally with users, in order to enhance the user experience.

5.3. The design strategy of product form and semantics and the shaping of user emotions

The design strategy of product form and semantics is closely related to the shaping of user emotions. Designers can consciously shape the emotional experience of users in product form design through design elements such as color, material, and lines. For example, creating a warm and comfortable emotional atmosphere through soft curves and warm colors; Through tough lines and cool tones, convey a modern and technological emotional experience. In addition, the appearance, feel, and operation of the product can also have an impact on the user's emotions. Designers can shape the user's emotional experience through the handling of details, thereby enhancing the attractiveness and competitiveness of the product. Through the design strategy of product form and semantics, designers can effectively guide users to generate specific emotional experiences, enhance their cognition and emotional resonance with the product. In the product design process, designers should have a deep understanding of the emotional needs of the target user group, combine the product's functions and usage scenarios, and shape the form and semantics of the product in a targeted manner to achieve emotional connection with users. Therefore, the design strategy of product form and semantics should be closely combined with the emotional needs of users. Through the design of product form, it can trigger emotional resonance among users and improve the user experience.

6. Empirical research and case analysis

6.1. The research method

When studying the design strategy of product morphological semantics and the shaping of user emotion, quantitative and qualitative research methods such as questionnaire survey, field investigation and user experience test can be adopted. Questionnaire survey can obtain a large number of users' emotional preferences and cognition of product form, field investigation can observe users' emotional responses to product form in the actual environment, and user experience test can directly understand users' emotional experience in the use process. Through the comprehensive application of these research methods, we can fully understand the emotional needs of users and provide scientific basis for product form design.

6.2. The analysis of empirical research results

Through questionnaire surveys and user experience tests, it was found that users' emotional preferences for product form are closely related to factors such as material, color, and line design. Soft curves and natural materials are more likely to evoke warm and friendly emotions from users, while rugged lines and modern materials can better convey a sense of stability and technology. User experience testing also shows that well-designed operating methods and tactile experiences can enhance the emotional connection of users. These results provide important empirical evidence for product form design, guiding designers to better fit the emotional needs of users in shaping product form semantics.

6.3. The case analysis and discussion

Through the analysis of multiple product form design cases, it was found that emotional design can significantly enhance the attractiveness and user experience of products. Apple's products have won the emotional recognition of users with their simple and elegant appearance design, making them their preferred choice (Figure 1). Tesla, the automotive brand, has successfully created an advanced and technological emotional image through its futuristic exterior design (Figure 2). These cases indicate that emotional factors in product form design have a significant impact on user cognition and preferences, providing useful insights for product design.

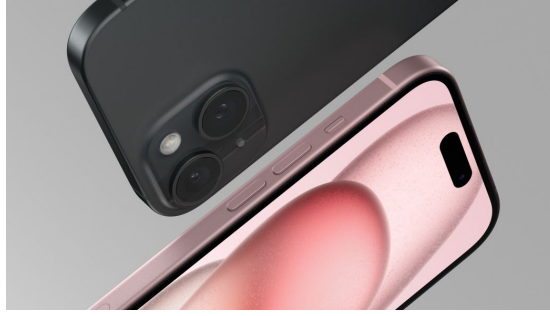


Figure 1: Appearance design of iPhone 15



Figure 2: Tesla model x exterior design

7. Conclusions

In summary, emotional factors in product form design have a significant impact on user experience. Through in-depth research on user emotional needs, combined with empirical research and case analysis, scientific basis and practical guidance can be provided for product form design. In the future, designers should pay more attention to emotional design to create more attractive and emotionally connected products that meet the emotional needs of users. This will help improve the market competitiveness and user satisfaction of the product, and promote the development of product form design towards a more humane and emotional direction.

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