

Research on Design of Children Products Based on Emotional Design Concept

Kejing Zhou¹

¹ School of Industrial Design, Hubei Institute of Fine Arts, Wuhan, Hubei, China

ABSTRACT

In response to the shortcomings of existing children's household products that cannot meet the active use of children, based on the concept of emotional design, the author of this article analyzes the design elements of children's household products, in order to explore the design elements of household products that promote emotional communication and positive interaction among children. Through the analysis of children's psychological needs and lifestyle habits, the summary of their emotional needs, and exploration on the design elements of shape, color, and material for children's products, it is hoped to promote children's initiative in using household products, form a positive family emotional resonance, and achieve a harmonious and joyful coexistence atmosphere.

Keywords: Children, Household products, Emotional design.

1. INTRODUCTION

With the continuous progress and development of design and manufacturing technology, the variety of products is also increasing, and the seller's market is gradually transforming into a consumer-oriented buyer's market.[1] So in such a consumer oriented environment, if people only focus on the usability and functionality of the products, it is no longer enough to arouse consumers' desire to purchase. Because there is no significant differentiation in terms of functionality, price, and other aspects among the same type of products on shopping platforms,[2] the concept of "emotional design" is gradually being valued, which is reflected in the field of the design of children products, where consumers' emotional needs are receiving attention. At the same time, in consumer purchases, the proportion of emotional added value of the product increases, which means that if the product has the same function, quality, and price, consumers will choose products that can arouse more emotions.[3] Practicality and usability are inevitably important, but without emotional sensations such as fun and pleasure, people's lives are incomplete. So emotions are an essential component of life, which can affect people's feelings, behaviors, and perspectives.

2. ANALYSIS OF EMOTIONAL DESIGN CONCEPT FROM THREE LEVELS

The concept of "emotional design" was officially proposed in Donald Norman's book "Emotional Design", which divides emotional needs into three different dimensions: instinct, behavior, and reflection, and elaborates on the important position and role of emotions in design.

2.1 Emotional Design at the Instinctive Level

The instinctive level is prior to consciousness and thinking, and is the most direct reaction of children to the visual and first impression of a product. It is dominated by visual, auditory, tactile, and olfactory senses. The intuitive experience brought to consumers by design is reflected through visual elements such as shape, color, and material. The emotional experience caused by intuitive experience can produce emotional stimuli to users, such as warmth and indifference. These emotions are reflected in the design, which is the perception of the product's appearance. Due to age limitations, children mainly engage in lower level activities, where the brain analyzes the world in a relatively

simple pattern and responds. Therefore, the style design and material selection of products require great attention, as both have a significant impact on the emotional feedback of instinctive level design. Therefore, the design of children's products at the instinctive level should meet children's needs for fun and comfort in terms of direct sensory elements such as shape, color, and material.

2.2 Emotional Design at the Behavioral Level

The design of behavioral levels is closely related to the user's use, with a focus on understanding and satisfying the user experience of children with the product, which is the main source of product connotation. Good behavioral hierarchy design must be a fundamental part of the design process from the beginning [4]. Function is the primary design element to consider in product design, that is, whether it meets the expected usage purpose of the product design. After the function, understanding is the key to using the product effectively, and an important component of understanding is the feedback formed by users when using the product. For example, the sound of buttons and the lighting of product operation can make users know that the product is working. After understanding, it is about feeling. The touch of the product is an important influencing factor of feeling, and a smooth, soft touch will bring users a pleasant feeling. So, excellent design at the behavioral level must be a "people-oriented" design.

2.3 Emotional Design at the Reflective Level

Design at the reflective level is a design that focuses on product information, culture, and product connotation. Design at the reflective level indicates that reflective design is related to the long-term user experience, that is, to the service provided by the product to the user, and to the contact and interaction between the product and people. The charm of a product is manifested at the instinctive level, which is the reaction to the appearance of the product. The feeling of beauty comes from the reflective level, and beauty transcends appearance, which comes from conscious reflection and experience. Therefore, by associating past memories and re-evaluating them, users determine their overall impression of a product, making it more meaningful.

3. ANALYSIS OF PSYCHOLOGICAL NEEDS FOR EMOTIONAL DESIGN OF CHILDREN'S PRODUCTS

Due to the increasing proportion of users' advanced needs, meeting users' psychological needs has become an important factor in the quality of products. By analyzing the psychological needs of children, people can understand the design elements that should be emphasized in emotional design of children's products.

3.1 Children's Irrational Needs

Children will first have a psychological need for irrational consumption of daily necessities. Because during childhood, users are more likely to be subjected to certain visual stimuli from a behavioral perspective, resulting in attention to the products themselves and consumption behavior, in childhood, irrational psychology plays a more important role in the purchase and use behaviors that occur. Children rely on external stimuli such as interesting patterns, bright colors, and soft tactile sensations. Children will not have purchasing needs due to brand and quality, and they focus more on the appearance and design of products, which makes their consumption direct and visual, being prone to irrational consumption behavior.

3.2 Children's Conformity Needs

Children have a relatively simple and pure understanding of their own psychology and behavior, and do not have overly complex and mature ideas. The generation of psychological needs is generally imitated and learned from the surrounding population and environment, which is easily influenced by parents, teachers, and classmates. They will have strong conformity behavior. During this period, children generally don't have independent thinking about the importance of needs, and their ability to self judge is also poor. Therefore, the generation of children's purchasing desire and the realization of purchasing behavior in consumption activities are influenced by the consumption behavior and evaluation of others [3].

3.3 Children's Curiosity Needs

Another special psychology in childhood is curiosity. Children are in a period of short exposure to the world and insufficient experience, so the

more deeply they engage in the process of interacting with the outside world, the stronger their curiosity. They have wild ideas and a desire to explore everything. So in the face of this user's psychological needs, it is required that the appearance of the product be interesting and bright enough, and that colors with high purity will attract children's attention. Because children develop a sense of demand based on the direct appearance of the product, they engage in curious behavior that satisfies their psychological curiosity.

4. ANALYSIS OF EMOTIONAL DESIGN ELEMENTS FOR CHILDREN'S PRODUCTS

Based on the analysis of children's psychological needs and the understanding of their emotional characteristics, this study explores the three design elements of children's products: shape, color, and material. It is hoped that this can promote communication and interaction between families and achieve a harmonious atmosphere.

4.1 Style Elements

The design of children's products is one of the important factors that children choose to purchase, so while ensuring the safety and reliability of materials, boasting about interesting appearance shapes is beneficial for attracting children's attention. At the instinctive level, it is required to design a bright and round shape, and to add interactive toys inside or outside children's products, so that children can actively touch and use the product. For example, Toy-soap, based on the round shape of the soap, has been replaced with a semi-transparent soap solution, with a hidden mini toy in the middle. Compared to regular soap, it is more suitable for meeting the psychological needs of children's curiosity and promotes children to actively use soap to wash their hands and clean. Secondly, children's products can also be more closely combined with nature, which can increase the formal language of children's products and meet the unique aesthetic preferences of children.

4.2 Color Elements

The color of children's products is also one of the important factors in children's instinctive level selection tendency. In children's daily life, there are always various colors, and colors have a significant impact on children's psychology and physiology. [5] Children's first impression of the world is mostly

remembered based on the visual representation of the appearance of things. Therefore, in testing children's ability to focus, color is an important component of product design, and its diverse visual feedback will bring users different dimensions of psychological feelings. [6] So using colors reasonably and accurately can make children at different stages have positive emotional feelings. For example, red can make people excited, yellow can make people lively, green can make people close to nature, and different proportions of colors can be combined appropriately to create a comfortable and lively emotional atmosphere for children.

4.3 Material Elements

The material of children's products is not the primary consideration for children, but in the eyes of actual buyers' parents, safe and green materials are the key consideration for whether children's products are worth purchasing. Therefore, the design principle of safe materials is an important component of children's products. Children lack correct safety awareness and poor self-management ability. In order to prevent children from being harmed during use and affecting their behavioral experience, safe and non-toxic materials are the core of the design of children's products. Secondly, in the selection of the overall additional structure, it is also necessary to choose reasonable and lightweight materials to prevent children from encountering unexpected factors during use, which may lead to undesirable situations such as collisions and injuries. The material design that avoids these conditions can provide children with a pleasant and comfortable use experience, and provide parents with a sense of peace of mind and stability.

5. CONCLUSION

Based on the concept of emotional design, the needs and feelings of users at different levels can be understood. However, children, due to their young age, are still in an immature stage of understanding the world, so they may have curiosity, conformity, and irrational psychological needs for external perception. Therefore, for the design of children's products, it is necessary to meet the emotional feelings of children's instincts and behaviors from the aspects of shape, color, and material, forming a positive interaction, leaving special and beautiful memories for children at the level of reflection. The emotional resonance formed will attract children's closeness, and make children feel relaxed and

happy visually, tactilely, and psychologically, thereby helping parents and children form a harmonious and happy family atmosphere.

REFERENCES

- [1] Qi Guoning, Gu Xinjiang, Tan Jianrong, Mass Customization Technology and Its Application [M]. Beijing: China Machine Press, 2003: 18-23. (in Chinese)
- [2] Tan Anan, Li Honghai, A Summary of Product Emotional Design Reserachers [J]. Design, 2016, (01): 74-75. (in Chinese)
- [3] Ding Junweu, Yang Dongtao, Cao Yadong, Wang Lin, Theory, Method, and Trend of Emotional Design [J]. Journal of Engineering Design, 2010, 17(01): 12-18+29. (in Chinese)
- [4] (U.S.) Donald Norman, Emotional Design [M]. He Xiaomei, Ou Qiuxing, trans. Beijing: CITIC Press Group, 2015. (in Chinese)
- [5] Wang Wei, The Influence of Color Psychology on Children's Product Design [J]. Ability and Wisdom, 2018(32): 44. 2018(32):44. (in Chinese)
- [6] Wu Tianyu, Zhao Yiqian, Li Yajun, Li Qingchen, Yang Xiaomin, Emotional Experience Design of Product Color in User Needs Classification [J]. Packaging Engineering, 2022, 43(16): 209-217. (in Chinese)