Research on Products with the Feel of "Moe" Based on User's Cognitive Psychology

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Abstract: In the current society, "Moe" has become a new trend of best-selling products. The young user groups, especially the female users, are more inclined to choose "cute" products for their aesthetics. "Moe" is not only a sense of resonance that arises because of certain characteristics of things, but also some characteristics that make people have protective desires, stimulate people's childlike innocence, produce good feelings and love for them, and satisfy people's self-realization of young things, the need for value, and the need for aesthetics about cute and beautiful things. From the perspective of user's cognitive psychology, this paper summarized the concept of "Moe", and discussed how "Moe" resonates with users and affects users' expectations. By comparing various types of robots and child robots in case studies, how "Moe" produces an impact based on the user's cognitive psychology was summed up. And this article demonstrated that products with a strong feel of "Moe" in the appearance meet the aesthetic needs of users, and are more likely to have empathy with users, which has an important impact on reducing the user expectations.

Keywords: "Moe", empathy, user's resonance, cognitive psychology, user's expectations

1. The wide spread of "Moe"

The character "Moe" originated from the Japanese homophones "Burning", which means the goodwill and affection expressed by the second-generation otaku for the beautiful girl anime characters. Its definition in Japanese dictionaries is, "This is a term used by young people to have pure liking, admiration, protective desire, and affection for something, some image (including virtual), or someone. After the spread of the Internet, in China, "Moe" refers to the immaturity and cuteness of objects. Japanese psychologist Naito Yoshito believes that the feeling of protectiveness in the face of immaturity can be called "Moe". It can be understood as a sense of resonance which arises due to certain characteristics of things. [1]

In terms of cognition, people think that not only babies are cute, but also kittens and puppies are cute. This is because kittens and puppies have similar characteristics to human babies. Baby schema is a concept proposed by Austrian animal behavior expert Lorenz. It refers to the characteristics of babies, such as big and round head, fleshy face, large forehead, big eyes, small mouth, and other typical images that will come to mind when thinking of babies. A study has shown that looking at pictures of babies can activate the nucleus accumbens of the brain. [2] The nucleus accumbens plays an important role in the brain's activities such as rewards, happiness, addiction, aggression, fear, and placebo effects. This is closely related to the user's cognition of evaluating user expectations of products.

Maslow summarized human needs into five levels: physiological needs, safety needs, belonging and love needs, esteem needs, and self-actualization needs. From lowest to highest, self-actualization needs can be divided into cognitive needs, aesthetic needs and self-creation needs. "Moe" products have certain characteristics that make people have a desire for protection, stimulate people's childlike innocence, and produce good feelings and affection for them. After the classification and summary, it is concluded that "Moe" products can meet people's need for self-worth realization towards young things, as well as their aesthetic needs for cute and beautiful things. In other words, it is precisely because people have self-actualization needs and aesthetic needs that "Moe" is widely spread.

2. Analysis of how the feel of "Moe" has an impact based on user's cognitive psychology

Cognitive psychology mainly studies the cognitive process of human psychological phenomena, how individuals obtain information about the world, how this information is represented and transformed into knowledge, how knowledge is stored and used to guide individual behavior. Cognition is originally a common word in psychology. In psychology

dictionary, it is understood as a process of knowledge understanding, that is, the process of reasoning and understanding opposed to emotion, motivation, will, etc. It includes perception, appearance, memory, thinking, etc., in which thinking is its core. Human will produce a process of self-recognition towards a certain product, and the information seen by the eyes will be encoded in the process of information processing. Then, the information will be extracted from memory to form concepts, generate judgments and produce language, as shown in Figure 1.
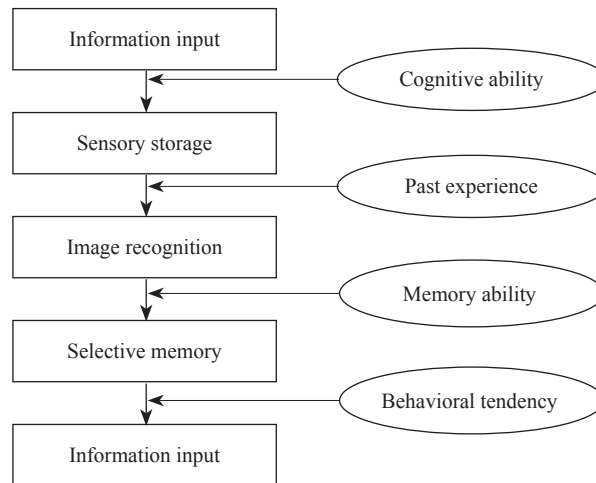

Figure 1. Information processing process model

People obtain information through the interpretation of product representation information (modeling semantics, product symbols, texture, color, material, function, etc.), and identify them based on personal past experience to form concepts, generate judgments, and form language to describe products. This is what we call user expectations. As the frequency of use increases, cognitive rules, cognitive habits, and cognitive experience are gradually produced, and the cognitive processing of the same solid information by users will become extremely short, and even subconscious cognition that is not easily detected will be generated. [3] User cognition in product design can be divided into purpose cognition and process cognition. The cognition of products with the feel of "Moe" is mainly based on process cognition to obtain the psychological value of the product as the core orientation. Emphasizing the user's psychological feedback like mood and emotion in the process of contacting and using the product is a subjective feeling in user cognition. The essence of the user's thinking the product has the feel of "Moe" is to feel empathy for the aesthetics of "Moe", thinking of the past experience so as to generate the feeling of protectiveness and affection.

3. The impact of "Moe" on user's expectations

Expectation refers to an estimate of future conditions. User expectations refer to what users want to accomplish when using your product, what their goals and demands are, and what users' cognition of the product are. User's expectations include the user's cognition of product attributes, functions, and methods of use, the user's appeal and purpose of using the product, the user's prediction of the product's using effect and service life, and the tolerance for product faults. Most users make decisions and judgments based on their past experience, and at the same time, they will make comprehensive judgment of expectations through various aspects such as product appearance, technology, function, quality, size, price, and brand effect, judging what work this product can accomplish and what effect it can achieve. The more complex the shape is, the more advanced the technology is, the more complete the function is, the higher the quality is, the larger the size is, and the more expensive the product is, the higher the expectations of users will be; otherwise, the lower the expectations of users will be.

Before use, the user actually has a psychological expectation. The good and bad feelings after use are generated after comparing with this initial value. If the user expectations are too high, they may feel disappointed after using the product; if the user expectations are too low, they may not buy the product. Although there are many factors that affect user expectations, when we only look at the "Moe" degree of modeling as a factor that affects user expectations, the following conclusion can be drawn: the more feel of "Moe" the product has, the lower the user's expectation will be; otherwise, the lower the user's expectation will be. (Figure 2)
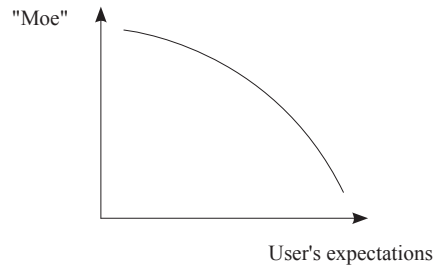
Figure 2. The relationship between "Moe" and user expectations

Among products with the same function, the "Moe" appearance will surprise users; the "powerful" appearance will make users think that this is what the product should accomplish. Although, the more "Moe" the product looks, the lower the expectation of it will be. It is manifested as: the stronger the user's purposefulness is, the less appeal the product will has, the higher the fault tolerance will be, and the more uniform the cognition of the product will be. However, for products that are too "Moe", users will feel like they are toys and will feel distrustful of them. How to grasp the degree of this is what product designers should do. When it comes to robots, most people think of humanoid robots seen in science fiction movies (Figure 3). Their mechanical structure looks very complicated, sophisticated, and rich in functions. They require operating principles and high techniques. They can easily do things that humans can't do, and people have higher expectations for them. Among the robots on the market, from sweeping robots to medical robots (Figure 4) to inspection robots and even unmanned exploration robots used in the universe (Figure 5), their shapes change from complex to concise, and people have different expectations for different types of robots.

Figure 3. Humanoid robot
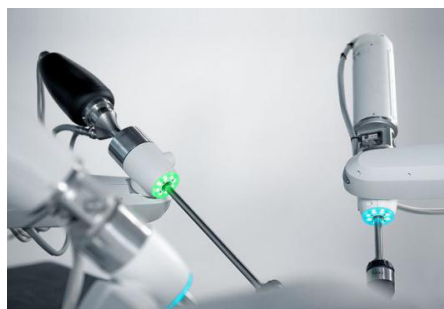
Figure 4. Medical robot

Figure 5. Unmanned exploration robot

For example, when faced with simple-shaped sweeping robots, people only hope that they can clean the floor; when faced with medical robots, they hope to cure diseases in their bodies; facing robots for space exploration, they hope that they can explore unknown time through robots. The more powerful the function is, the more complex the shape is, and the more precise the structure of the robot is, the lower the fault tolerance of the user to the product will be, which is inseparable from the user's strong expectation of the product.

Among various robots, child-oriented robots are relatively close to the "Moe" and "cuteness" that adults understand, and parents' expectations for buying robots are not as high as those for other types of robots. When the expectation of the product is very low, if it can generate unexpected value, users will naturally become its fans, such as BOCCO, a home communication robot designed by Japanese company YUKAI (Figure 6). BOCCO is a robot system that focuses on maintaining family communication and is especially designed to protect children who are alone at home.
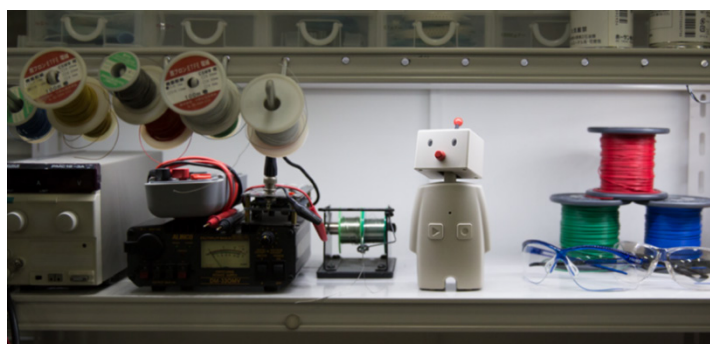

Figure 6. BOCCO robot

The shape of BOCCO is very simple, consisting of two buttons on the body and a naive overall appearance. The basic function of BOCCO is to transmit voice messages to parents' mobile phones via robots, or to use mobile phones to transmit simple voice or text messages to BOCCO. People don't give too much imagination and expectations to the product with such a shape. The user's appeal tends to be simple. On the one hand, it is hoped that the product can be easier for children to use, and on the other hand, it is hoped that the appearance is more in line with children's aesthetic concepts. BOCCO meets these two expectations. When BOCCO is connected with four sensors with different functions (Figure 7) (vibration sensor, key sensor, room sensor and human sensor), it can create a wealth of functions in different scenarios. For example, a vibration sensor can sense whether a child is at home, and parents can send a message to their child through the BOCCO robot as soon as the child arrives home; a key sensor can sense whether the twistlock at home is locked; a room sensor can sense temperature and humidity; human sensors can be used in more covert spaces like the bathroom or locker room to sense the movement of objects.

Figure 7. Four sensors with different functions

In addition to lowering user expectations, products with strong feel of "Moe" in appearance may also empathize with users' emotions or aesthetics, allowing users to substitute their own emotions. Through the interaction between the

user and the product, a psychological resonance is caused, so that the user will be spiritually satisfied, and the product can attract more attention, thereby increasing the user group. When users have feelings for the product, their requirements for the product will be reduced, and the user expectations will also be reduced.

4. Conclusion

As the saying goes, the higher the expectation, the greater the disappointment, which is the same for users using the product. It is not an absolutely good thing to create a "Moe" product to blindly reduce user's expectations and avoid user's disappointment. According to the target users and purposes of the product, user's expectations should be adjusted correspondingly. While lowering user's expectations, making users surprised can stimulate their desire to consume. At the same time, their requirements for the product will be less demanding, and they will become more tolerant of its faults. To make users feel happy and satisfied with the product means not only let the users obtain the corresponding experience, but also make the product exceed user's expectations. When the user's actual experience exceeds the expectations of the target product, the user's favorable impression on the brand will be increased, thereby increasing the repurchase rate and even probably making the user proactively share it with others. All in all, promise should not be excessively made to users, and more should be done than what is promised. Promise should be moderately made to users; otherwise, they will lose interest in the brand.

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