

Research on the Emotional Design of the Products of Naoto Fukasawa

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Abstract

Objective: Help in the design of the product using the progressive relationship between the four levels of progressive in-depth emotional applications. Method: Based on the research of predecessors, this paper analyzes and summarizes the emotional factors of the products, and summarizes the manifestations of the emotional design of the products. Result: Based on the above analysis, this paper summarizes the four design levels involved in the realization of the product of emotional design, and the hierarchical progressive relationship between the four levels. Conclusion: Attention to product emotional design has gradually attracted attention and become a demand trend, with an example of products designed by Naoto Fukasawa, study the design level of product sensibility, and thus activate the product, for the future of human-computer emotional interaction to provide a useful reference.

Keywords: emotional; Naoto Fukasawa; product; level;

1. Background and significance

Donald A. Norman, a famous cognitive psychologist, explored the role of emotional factors in product design when analyzing the coexistence of practicality and aesthetics in product design, so as to derive the concept of "emotional design" And takes instincts, behaviors and introspection as the three different levels of emotion and puts forward the design principles corresponding to three different levels. Finally, it expounds the key point that emotional design is the future development.

"Emotional" products can often affect users' behavior. As Norman said, the success of a product may be more critical to the emotional element of design than the practical elements. Through emotional design, the product can capture the user's attention and induce the emotional response (conscious or unconscious), thereby improving the efficiency of performing a specific action and bringing the user experience of "easy to use" and "still wanting to use" even if it lacks practical functionality. However, only practical products can only meet the needs of users, but they can not give long-term interesting user experience. When they no longer have practicality, they can be only abandoned. As an important factor in product design, Emotional Design is widely used in the products of Naoto Fukasawa, ranging from appliances to small chopsticks. Obviously, in today's era of emphasis on human-computer interaction, the application of emotional design in products is undoubtedly the key to satisfy user needs and enhancing user experience.

2. Product emotion factor analysis

Emotions or feelings, which are sometimes considered the most realistic part of the design, and the most real part of which is well suited to product design, which can be used as a medium of communication to evoke the emotional resonance of the user, to mobilize the sensory nerves of the user, User experience, to realize the value of the product.

2.1 Positive emotions

Positive emotions can stimulate the user's positive emotions, deepen the interactive experience of fun, arouse pleasant memories, help to learn, stimulate curiosity and creativity, the product assimilated into the positive emotional design, can create a pleasant, comfortable use surroundings. Taking the TWELVE watch (Figure 1) designed by Naoto Fukasawa for Issey Miyake and the EKI watch designed by Naoto Fukasawa and Matsuko Yukiko (Figure 2) as an example, the dial of the TWELVE watch is designed as a 12-sided shape, just replacing 12 of the watch Time scale, making the dial more concise and innovative, to stimulate the user's instantaneous sensory, after adding three small circles of the day, the date and the second hand, the three short hands, together with the bold hour hand, form different expressions at different times, Its original and exquisite inspired the user's strong desire to enjoy and possess the potential to play a transient emotional role; and Naoto Fukasawa with Matsuko Yukiko common design EKI watches due to the shape of the Japanese station watch and attracted attention, Naoto Fukasawa said, in a sense, the transformation of the common image of our everyday acquaintance into the subject of a personal good proves itself that such "communion" is valuable. EKI watch established with the user's memory connection, evoked the memory of the user's past, played a stabilizing emotional role. Through the comparative analysis of the above two examples, it can be found that the positive emotions conveyed by the products can usually be divided into instantaneous emotions and stable emotions. The instantaneous emotions often stimulate the positive emotions of the user by stimulating the nervous system of the user, and stabilizing emotions takes time mining, plays an important role in the process of interaction, the connection between people and things and the memories they arouse, as well as some products that remain well or even better over time, as well as Gradually produce stable feelings with the user.



Figure 1. the TWELVE watch.



Figure 2. the EKI watch.

2.2 Negative emotion

Negative emotions in general, can be considered anger, sadness, impatience, anxiety, fear and other negative emotions, which most users are not loved, but the negative emotions in all emotions is significantly more than the positive emotions, and has a very positive biological evolution, because it provides a quick warning and protection mechanism. The ancients often say "born in danger, died in peace," Therefore, in the course of using the products, they can generate appropriate negative emotions to effectively alert the users and take preventive measures. When the alarm makes a sharp call to stimulate the sensory nerves of the user, it conveys to the user the anxious negative emotions, but it also helps the user effectively plan the time and improve the efficiency, so the alarm goes through years of continuous innovation, hoping to arouse the natural transition between positive emotions and negative emotions so that users can face negative emotions better and enjoy the high-efficient experience they bring.

3. Product Emotional Design Expressions

3.1 Color performance

Color as one of the three elements of design, played the first to seize the user's visual attention. From Naoto Fukasawa design of warm, color tone with the fruit and beverage packaging (Figure 3), can think of childhood, warm, enthusiasm, pleasant emotions; and as Naoto Fukasawa and Matsuko Yukiko co-designed EKI watch (Figure 2) in the classic black and white gray, cool colors, monotone, expresses a cool, calm emotions. Color emotions, including the inherent emotions, associative and symbolic emotions, as well as nausea, for different types of products with a reasonable color, can arouse the user's emotional associations for color.



Figure 3. the fruit beverage packaging.

3.2 Morphological performance

"Shape" is the physical form of the product. "State" refers to the emotions and emotions that the appearance conveys, and the psychological emotions whose size, shape and spatial relationship make people feel relaxed or interesting. In the product's morphological expression, the emotion expression of the bionic design is the most abundant. It can carry out the multiple fusion with the nature to awaken the instinctive emotion of the user.

3.2.1 Bionic morphology

The meaning is to directly imitate the creature design, the product morphology and imitation of biological similar. The main content is to extract the characteristics of being imitated creatures, through the summarized, association, scrutiny, simplify, to design a product that can convey the emotional content of the form. The main approach is as follows:

- (1) the figure-shaped bionic pattern: a generalization of nature's creatures.
- (2) The overall shape of the bionic image: the overall imitation of a creature in nature.

(3) Local bionic morphology: according to the nature of a certain kind of biological characteristics of imitation. For example, the fruit beverage packaging (Figure 3), through the extraction of different skin characteristics of fruits, combined with beverage packaging, to create multi-dimensional sensory superposition of the synaesthesia effect.

3.2.2 Abstract morphology bionic

The meaning is from the biological morphology, repeated scrutiny, excluding the details of the image, summarized until the abstraction of its original form, reflecting the unique nature of things as a whole. For example, TWELVE watch (Figure 2), three short hands and hour hand with the formation of a different pin-point facial expressions, with a simple line to simplify induction of human faces, to achieve the effect of abstract form of bionic, and then combined with the dial, which is so amusing. Thus, the abstract form of the bionics pay more attention to understanding and refine the intrinsic nature of the creatures, and then will be summarized in the simplified form from the imitation of the extract, keeping the demeanor to move closer to the direction of product design.

3.2.3 Bionic imagery

The implication is that not only imitating the form and demeanor of nature, but also imitating the conceptions contained therein, so that by feeling the shape of the product, we can feel both the characteristics of God-shaped and innate artistic conception.

3.3 *Material performance*

Material as a substance carrier, different materials through the visual and touch can show the product of different emotional reactions, taking the TWELVE watch (Figure 1) and the EKI watch (Figure 2) as an example, the same type of product when given different materials, the expression of different emotions, weaving strap EKI watches compared to the leather strap TWELVE watch gives users more to convey the feeling of comfort. It is concluded that the natural materials such as wood, paper, bamboo and pottery, give people a natural and comfortable feeling. The industrial materials such as metal, stainless steel and plastic show a modern fashion sense and technology, while the transparent materials such as crystal and glass have mystery, noble feeling.

3.4 *Use of performance*

Use as an important component of usability products, the expression of emotion also have some performance. For example, the CD player (Figure 4) and the lamp with tray (Figure 5) designed by Naoto Fukasawa, the former design depends on a series of actions, pull down the line switch, CD begins to slowly rotate, the music plays out, like air from being blown out of the fan, the ingenuity and uniqueness of its use approach narrow the distance from the user and convey positive emotions. The latter design is reflected in the human semantic expression, its lighting is turned on and off through the placement and acquisition of goods to achieve, the shape of the tray at the bottom of the expression of design can convey the semantics of debris, this clear semantic use of the operation is to control the sensor light switch, its user-friendly way

of using not only novel and unique, but also play a role in emotional experience. Thus, clever use of the way allows users to experience the product process, at the same time, to have a profound understanding and experience of the product form, function and features, produce a unique emotional experience, and get better results.



Figure 4. the CD player.



Figure 5. the lamp with tray.

4. Product design to achieve the emotional level

4.1 Sensory level

Sensory level belongs to the user's instinct level, it mainly through the five senses, synaesthesia, synesthesia and other self-instinct to sense the feelings of the product. The five senses are the five senses of shape, sound, smell, taste, touch, that is, the human five sense organs, visual, auditory, smell, taste, touch, the emotional design of the product, mainly through the product's color, shape, material and other appearances designed to stimulate the user's sensory nerves, color and form can mobilize the user's visual senses, the material can mobilize the user's tactile sensory, and color, shape and material with a reasonable match can trigger the user's synaesthesia, and even synesthesia, in his book *The Subjective Impression of Beauty*, the German philosopher and esthetician Fischer put forward: "The senses are not isolated in the first place, they are branches of a feeling, and how many can substitute for each other. A sensual sound and the other senses as memories, as echo, it also resonates as an invisible symbol. " For example, the fruit drink package designed by Naoto Fukasawa (Figure 3) applies the styling features such as fruit color, luster, and line to the product packaging, and the smell and taste of the fruit will flock to the user, taste and smell experience overlay or even over the visual experience, creating the synesthesia effect of the user's superposition. Multi-dimensional experience of the taste of the fruit fresh and accurate delivery to each user, not only the taste of the beverage at a glance, but also allow users to enjoy the taste of the beverage is full of expectations and promote their desire to consume.

4.2 Semantic level

The design semanteme of human product can be understood as borrowing the semantic concept of linguistics into the design field and enriching the visual morphological language through the design of the product sensory level. A product contains a lot of non-verbal elements, therefore, good semantic expression is like a three-dimensional manual, affecting users to perceive the use. For example, the lamp with a tray designed by Naoto Fukasawa (Figure 5), this design has obvious non-verbal elements, allowing users to use unconsciously, imagine a scene, when the user comes home from work, easily put the key on the plate , the light will automatically turn on the lighting without the need to look for the switch of the light, forming a consistent use of the operation, in line with many users of the psychological mapping and usage, when the user needs to go out, the keys in the dish away, The light will turn off automatically. This design will increase the sentiment of interaction while clarifying the semantic expression. Visible, good semantic expression is also the key for product emotional design.

4.3 Interaction level

User-product and environment interaction and exchange of information, including user experience, product understanding, goal completion and adaptability of product and environment, good interaction can bring a wonderful emotional experience. For example, Naoto Fukasawa design of the CD player (Figure 4), natural fishing switch line design has a good semantic guidance, allowing users to see this product unconsciously to pull, and thus start the CD player, so music like breeze blow out. This product through a good semantic clarity, enriched the products of interaction level. Interaction between products and users is the key to

convey feelings, a good interactive experience must pay attention to the product's ease of operation and understandability, reasonably increase the difficulty of the operation can stimulate the user's curiosity, the difficulty is too high or too low are easy reduce their interest. Now washing machines, dryers and the like can actually be regarded as purpose-specific robots, but their interactions with users exist only in button recognition. If future robots can intelligently recognize the needs of users and provide different directions choice, so that it can not only improve the quality of life of users, but also enhance the emotional exchanges between users and robots.

4.4 Psychological level

Appeal is a sensory aspect of the surface, it is entirely the appearance of objects in response, beauty is from the psychological level, beauty beyond the appearance, it comes from the conscious reflection and experience, at the same time by the knowledge and culture, psychological help to establish the long-term bond between users and products, for example, Naoko Fukasawa with Matsuko Yukiko common design EKI watch (Figure 2), this watch completely ruled out wearing a watch attached to the ornate decoration, and through the appearance of the Japanese station bell, resulting in a product and the user's psychological level of the connection point, when the station clock with the watch in the same screen, the user psychology will produce a strange sense of fun, but also has a pleasant emotional experience, especially for those who have a special relationship with the big clock in Japan's station, the EKI watch is a long-term bond that connects users with memories.

5. Conclusion and Outlook

By analyzing the background and significance of emotional design and taking the products designed by Naoko Fukasawa as an example, this paper analyzes the emotional factors and the emotional design expressions of the product, and summarizes the four design levels involved in realizing the product emotionalization, that is, the sensory level, Semantic level, interaction level and psychological level, and give an example to demonstrate.

Nowadays, it has become a clear trend to inject emotional design into products. In the future, artificial intelligence will become more commonplace and pay more attention to communicating with users. An emotional artificial intelligence can identify the potential needs of users, and effective information to the user reference choice, help users to visualize the ineffable requirements and effectively solve problems that users encounter in their lives through emotional interaction.

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