Research on Emotional Design of Creative Cultural Products from the Perspective of Behavioral-Layer Creativity

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ABSTRACT

To explore the research breadth and depth of the design methods at specific layers in combination with emotional design and cultural creativity, the concept of emotional design was introduced, and the behavioral-layer design of creative cultural products was taken as the research object to deeply mine the user behaviors-related cultural creative design thoughts and techniques, and further form a creative cultural product design method from six aspects —behavior subtlety, behavior affordance, behavior integration into the scenario, interesting interaction, action imitation and pattern innovation — and apply it to the practice.
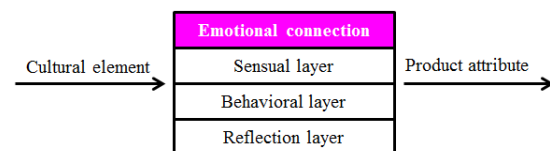
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1. EMOTIONAL DESIGN OF CREATIVE CULTURAL PRODUCTS

Rooted in creativities, the creative cultural products derive from cultural themes, and have market values. In comparison with ordinary products, they attach greater importance to spiritual connotation, cultural inheritance, value development, usage experience and cultural perception, with stronger cultural and creative characteristics. How to interpret the cultural background, narrate the cultural stories, and realize local cultural decoding and recreation has become a research hotspot.

Donald Norman proposed the concept of emotional design, and divided it into the intrinsic layer, behavioral layer, and reflection layer [1]. Lin (2011) divided the attributes of creative cultural products into the physical layer, behavioral layer, and psychological layer [2]. The hierarchical division made by Lin subtly corresponds to the sensual layer, behavioral layer, and reflection layer in the emotional design. The physical layer corresponds to entitative and material-layer contents of cultural phenomena; the behavioral layer to usage behaviors, rituals, and customs; the psychological layer corresponds to ideologies and spiritual contents. Based on the corresponding relationships of emotional attributes to the attributes of cultural products, the creative cultural product design from the angle of emotional design becomes suitable and possible. Therefore, the emotional connection model between the cultural attributes and the attributes of creative cultural products can be established based on the emotional design thought and method (Figure 1).

Figure 1 Emotional Connection Model Between Cultural Attributes and the Attributes of Creative Cultural Products

The intrinsic layer, behavioral layer and reflection layer do not present progressive relationships, but instead, they are manifested by three aspects of emotional design, which generate their respective influences on the product emotion in specific forms. Meanwhile, the reflection layer does not have to be established on a common foundation of the intrinsic layer and behavioral layer. The creative cultural product design does not only solve the formal aesthetic problems stimulated by tourist sense organs at the intrinsic layer, but also creates the sense of achievement and sense of joy for the usage at the behavioral layer, and even shapes the experience like "the

sight stirs up feelings" and "seeing the thing, one thinks of the person" at reflection layer. The present design researches mostly concentrate on the comprehensive design methods at three layers, but the concrete methods at each layer have been scarcely investigated. Hence, the design problem at the behavioral layer is taken as the research object to discuss the concrete design methods at this layer.

2. RESEARCH ON BEHAVIORAL-LAYER DESIGN METHOD

The behavioral-layer design involves the product function, usability and usage pleasure, etc. By virtue of the behavioral-layer design method, the creative cultural product design can stimulate people's pleasure to use the products and improve their emotional experience through behavioral presetting. Starting from cultural prototypes, the cultural texts and stories are combed, all-round emotional design is carried out for the product usage process, related rituals and interaction, and thus the pleasant experience of creative cultural products is realized. The concrete design methods at the behavioral layer are summarized through theory carding and case analysis, which provides theoretical support for the behavioral-layer design of the design model shown in Figure 1, so as to improve the quality and charm of the product design, e.g. realizing a more convenient, simple, interesting and elegant interaction with the products. Therefore, the design will exceed the user expectations and bring about surprise or a sense of joy to the users.

2.1 Behavior subtlety

Designers can discover the user needs through their deep insight into every subtlety in life, and then generate creativities. The design is implemented in a subtle way of thinking based on the close observation of behaviors and actions. Although the focus is on subtleties, the design can generate more warm, happy and even touching emotions. The designers should have sharp observation ability and acute perceptual ability, and discover the entry points into trivial things of life, and then dig the problems and demands which cannot be found by the users in their daily life.

Figure 2 Bevel Cup (by Gao Fenglin)

The bevel cup (Figure 2) was designed by Gao Fenglin when observing the details of water-drinking behavior [3]. During the observation and thinking process, the designer found that people usually drained the cup after turning it upside down; the rim of this cup would then touch the desk, which generates secondary pollution. Rightly based on such subtle discovery and adhering to the concise and uncomplex design principles, the designer cleverly made the handle into an inclined posture, which was good for the cup inversion, so the rim would not touch the desk when the cup was turned upside down to drain off the water. What a crafty design and delicate discovery!

2.2 Behavior affordance

In the psychoanalytic theory, Freud divides people's spiritual consciousness into three layers: consciousness, preconsciousness and unconsciousness, where unconsciousness is the deepest part in the human psychological structure, and human instinctive desire and emotions and intentions related to it exist in the unconsciousness; unconscious behaviors are some habitual behaviors through long-term experience accumulation in the human brain. According to the unconsciousness design proposed by Naoto Fukasawa, the consumers' unconscious behaviors are observed based on the affordance theory to mine some ideas and concepts that people were once not aware of and then apply them to the design, thus solving all kinds of problems in life, bringing greater convenience and surprise to life, and making the product more vivid.

People will show different unconscious behaviors under the specific activity scenes and clues based on their previous experience[4]. In the unconsciousness design, the designers usually provide the users with some behavioral clues, which are deliberately blended into the product through close observation and design[5]. However, the presented results appear "natural" for the users. As the product is designed according to people's unconscious behaviors with the clues, the product can be very naturally fused into people's behaviors and life, thus presenting the most considerate care for users' life with the least design, and a plain and simple sense of beauty in life and usage process is embodied[6]. In such designs, the designers will not deliberately conduct any eye-catching design, all designs take their own courses, the designs driving from unconscious behaviors cater to people's living habits, and people acquire advanced emotional experience in the usage process.

Figure 3 Trayed Table Lamp (by Naoto Fukasawa)

Naoto Fukasawa added a tray beneath the table lamp (Figure 3). With the tray design, the user tends to place things like keys, watch and wallet in the tray. When the keys are put on the cork base (tray), the light is turned on, and as the user fetches the keys and leaves, the light is turned off. The whole process becomes simple and natural, and a series of behaviors are completed unconsciously. The key point here is the tray, which is also what we think, we will unconsciously place things when seeing things similar to the tray, so the tray here is not only the starting point of unconscious behaviors but also the clue for user behaviors, and we will unconsciously take the placing action when seeing this clue.

2.3 Behavior integration into the scenario

Behavior integration into the scenario means that the user is guided into a preset scenario via the design, which serves as the medium. The product itself or together with its surroundings form a scenario. The designers deliberately design the product into two or even more states. To be more specific, the product presents a state, an incomplete shape or one among multiple states before being used, the user's operating behavior will generate the feedback effect and then changes the product state, or the scenario created by the product is changed. Therefore, the user's operating behavior exerts a reshaping effect on the product, the user experiences the enjoyment and strong sense of participation endowed by the product form, and the product is of greater interestingness and emotionality.

The Alessi bird paperweight (Figure 4) absorbs paper clips. Before the paper clip is placed, the bird is under one state, but it is turned into another state when the paper clip is placed, the two states are not only different but also logically correlated, and it is endowed with different scenarios when being used. The state transformation forms a dramatic, surprising effect.

Figure 4 Alessi Bird Paperweight (by Takeda Rumiko)

2.4 Interesting interaction of behaviors

The interesting interaction of behaviors can be understood as interesting interactive behaviors, and the products of this kind show excellent interaction. The user's operation will lead to the change of product state, the product becomes vivid, and the usage process is full of interest and interaction. As the user implements continuous operations, the product state will also continuously change. The user operation and product state change will be continuously alternated so that the product interaction and sense of experience are fully embodied.

Figure 5 Peacock Tail Spreading Keychain (by Qualy)

As for the peacock tail spreading keychain designed by Qualy (Figure 5), the beautiful peacock tail is spread when the user hangs the key, and the user action not only completes the function of hanging the key but also triggers beautiful peacock tail spreading. The interesting interaction is fully considered in this design, and the modeling and state changes associate and interact with the user behavior. The user's sense of operation and experience is sublimated so that the emotional attribute of the product is enhanced.

2.5 Action imitation of behaviors

When it comes to action imitation, the meaning association is generated between the user and product by means of role-playing, substitution and association by imitating the specific action methods or behavioral rite, so as to reach a surprising design effect. The user behavior is placed in a specific background of cultural story, the action and scenario association are combined so that the user feels like being placed in such scenario himself/herself, and through the behavioral imitation, the user becomes a role and realizes the emotional transfer. Mostly pun is used as the method, and the operating behavior of the product and the behavior of the imitation object are similar, so the user will generate a scenario-based role-like association when operating the product.

Let us see the cruet full of the delight of life designed by SE Xin (Figure 6), it is made into a cute fairy stick shape, the stars are filled with all kinds of condiments, the user can spill salt on food elegantly carrying this stick, or do a magic action by imitating an enchanter. The design endows the user a virtual role, and realizes role imitation and even emotional experience of the role. Through the action imitation design, the action coordination and emotional exchange between the human and the product are realized, and life becomes more sentimental by virtue of the culture, history, legend and historical romance behind the product.

Figure 6 Magic Taste (Condiment Suit) (SE Xin)

2.6 Innovation of behavioral pattern

By breaking through the operating mode of traditional products, the pattern innovation challenges people's thinking habits. Thanks to the innovation of operating mode, the whole product refreshes our feelings during the usage. When innovating the operating mode, a designer will inspire his/her own innovation of traditional operating mode usually by associative thinking. The new operating mode is always accompanied by an innovative interactive mode, or usage of high technology and new materials, which will break through and overturn the inherent concepts and bring us surprising design effects.

When the new operating mode is applied to the design, the ordinary product will become wonderful and make the tedious life pleasant. The "Varying Light" (Figure 7) lamps designed by Esrawe studio in Mexico, this series includes 4 types of lamps with different shapes and switching modes, and their open modes have completely broken through the traditional lamp usage mode. Some are placed on a cylindrical brass pedestal and turned on/off by swaying them from side to side, and some are turned on/off by adjusting the panel angle. For some lamps, the switching and adjustment are realized by sliding the brass on the ripple surface of the walnut panel, some panels are just like suspending on the bent brass baseplate, and the lamps glow through pressure. Each operating mode gives users novel feelings and a desire to explore. Therefore, the user behavior design by the designer is really ingenious.

Figure 7 "Varying Light" Lamps (by Esrawe studio)

3. BEHAVIORAL-LAYER EMOTIONAL DESIGN FLOW

Based on the research on the design methods from the perspective of behavioral-layer creativity, the abovementioned methods can be introduced into the creative cultural product design to establish the emotional connection between cultural attributes and product design. A culture can be fully understood and mined through the cultural investigation, perception and experience, it is then analyzed and combed, the

relationship between cultural prototype and the emotional element is established, and the concept of emotional design is formed. The behavioral-layer emotional design method is introduced into the link (Figure 8), and the behavioral-layer design thought is utilized. Starting from the ritual action, the design themes with behavioral characteristics are extracted based on the external form, connotative meaning and cultural meaning of cultural elements, the user behaviors are meticulously observed in the theme design to get an insight into the user demand, and the user's emotional behavioral experience is preset. In the end, the product attributes like product color, shape, texture, function, operability, cultural property and special meaning are embodied.
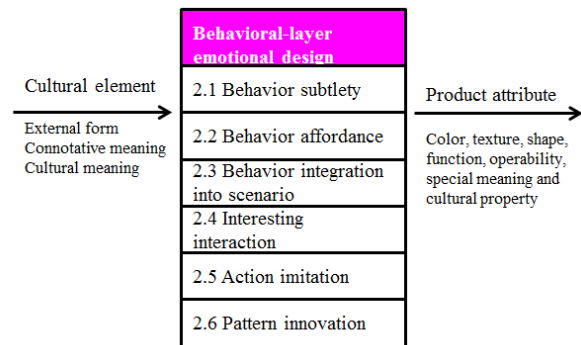

Figure 8 Behavioral-Layer Emotional Connection Model Between Cultural Attributes and Creative Cultural Product

The concrete design methods at sensory layer, behavioral layer and reflection layer in the emotional design are analyzed, especially their depth and breadth are investigated, which not only breaks through the unmatching problem between emotional quantification method and strong artistry of creative cultural products but also overcome the uncertainty problem caused by the total dependence on occasional inspiration in the design process[7], so the emotional design of creative cultural products becomes both rational and creative.

4. DESIGN PRACTICE

Under the research background of regional culture in Hebei, the selected research object— "Fingertip Lion Dance"—is the regional representative Xushui lion dance, which is a folk dance of the Han Nationality in Hebei Province. In 2006, it was listed by the Ministry of Culture as one of the first batch of national-level intangible cultural heritages. As an auspicious beast in the heart of people of all nationalities in China, lion emblems "good luck and happiness", so it expresses people's beautiful aspirations for scaring away evil spirits, seeking for auspice and enjoying a life of ease and comfort in the lion dancing activity.

Figure 9 Xushui Lion Dance

The behavioral-layer analysis of the cultural prototype is firstly conducted, including concrete actions, rituals and customs, etc. In the Xushui lion dance performance, the performer can vividly imitate the lion's actions such as watching, standing, walking, running, jumping, rolling, sleeping and hair shaking, and moreover, the performer can also display highly difficult skills such as "plum pile", "pile jumping" and "jumping every other pile". The behavioral actions in this culture are namely the cultural identifying symbols, and also constitute the entry point of the design. The abundant and characteristic behavioral-layer information of Xushui lion dance provides rich creative materials for the follow-up behavioral-layer design analysis.

Figure 10 Fingertip Lion Dance

Based on the analysis of behavioral emotional connection and following the principal line of imitation design of lion dancing actions, a comprehensive analysis is implemented through the "behavior integration into scenario", "scenario interaction," and "scenario imitation" methods. The lion model consists of the lion head and four feet, the "charmingly naïve" characteristic is guaranteed by means of cartoonlization, five fingers are respectively inserted into holes, the lion actions are experienced by waving the fingers, the lion dancing experience is transformed from visual experience into behavioral experience of participation in the interaction, the performer can experience lion dance culture while enjoying the performance, so the design is of rich emotional connotations.

5. CONCLUSION

Through the discussion on the behavioral-layer design methods, the design is explored using the behavior subtlety, behavior affordance, behavior integration into scenario, interesting interaction, action imitation and pattern innovation methods at behavioral layer, all of which can elevate the creativity of the creative cultural products, improve the emotional experience, and provide references for the emotional design of the creative cultural products.

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