



**STUDY ON THE FORM SEMANTICS DESIGN METHODS OF BAMBOO LAMPS AND THE DESIGN PRACTICE**

**QIONG LEI<sup>1</sup>, QINGQING ZHAO<sup>2</sup>, JINGSHU GAO<sup>3</sup>, KAI HUANG<sup>4</sup>, ZHONGFENG ZHANG<sup>5</sup>**

<sup>1,2,5</sup>School of Furniture and Art Design, Central South University of Forestry & Technology, Changsha, Hunan, China

<sup>3</sup>School of Art, Hubei Polytechnic University, Huangshi, Hubei, China

<sup>4</sup>Department of Art, Jiangmen Polytechnic, Jiangmen, Guangdong, China

Author for Correspondence: 974636539@qq.com



**ABSTRACT**

With the improvement of people's spiritual and cultural pursuit continuously, bamboo lamps design cannot limited to the design of its appearance shape design any more, designers become increasingly consider how to create the bamboo lamps form which can meet people's spiritual and cultural needs. This paper analyzed the design method for the form semantics of bamboo lamps, which includes analyzing the usage situation and culture context of bamboo lamps, setting the expected semantics of bamboo lamps, converting and integrating the bamboo lamp shape semantics, encoding and decoding the bamboo lamps form semantics, evaluating and sublimating the bamboo lamps shape semantics, and practiced the design of bamboo lamp combined with these methods to make bamboo lamps can reflect the spiritual cultural connotation and humanistic care of inherent of the shape better.

**KEY WORDS:** bamboo lamps; shape semantics; design methods

Cite this article: **QIONG LEI et al, "STUDY ON THE FORM SEMANTICS DESIGN METHODS OF BAMBOO LAMPS AND THE DESIGN PRACTICE". *Journal of Advanced Studies in Agricultural, Biological and Environmental Sciences*, 2(3): 2015,47-**

©KY Publications

**INTRODUCTION**

The design method is as follows through the careful analysis of the form semantics, and the general procedure of the form design: it is the first link of design for designers to establish the expected usage situation and cultural context of the product, and then set up the expected semantics based on this, transform and integrate the expected semantics in terms of the form of the product, finally determine and evaluate the product that you designed through the form semantics, so as to realize a new creation process of product form. Therefore, this paper will design the form of bamboo lamps by using the form semantics design method, and the concrete contents are follows:

**MATERIALS AND METHODS**

**1.0 ANALYSIS OF THE USAGE SITUATION AND CULTURAL SITUATION OF BAMBOO LAMPS**

Situation, that is, the meaning of context. In the conversation, the listening object is specific. The dialogue exists in a certain place, situation and time. A situation needs to have a conversation, and the content of the conversation has a specific connection with the status, the personality, the professional characteristics and the mind of the two sides of conversation. The combination of the elements of status, personality, professional



characteristics and mind forms the context. The usage situation of bamboo lamp is the activity of people and lamps in a certain activity scene. A product can not exist in isolation, it will always be related to the specific time, specific location, as well as the specific people and things. Lamps play two roles in a certain situation. One is its natural role, which is also known as functional role. It reflects the natural function of lamps. The other is the symbolic role, which depends on people's subjective feelings. It reflects the psychological, social and cultural symbol value of people[1].

Figure 1 "streamer fairy tale" is a bamboo mushroom lamp that is designed by analyzing the usage situation. The analysis of the usage situation is particularly basic and important in the form semantics design of bamboo lamps. It was the analysis of the usage situation that this lamp was designed. If we'd like to set the usage situation, we have to analyze the relationship between the people who will use the lamp and the lamp itself at first, which includes setting the target group, determining the relationship between its usage environment and space, and making an in-depth understanding for the preference characteristics of users. Finally, Combine the above conditions to make the form design of bamboo lamps.

The main users of this design are children so that the situation was set according to the warm and imaginative atmosphere of child's room. In modeling, children generally prefer the product that is lively, close to natural and artistic. In color, children generally prefer bright and eye-catching colors, such as warm orange, sky blue, pink, etc. These colors can attract their attention more easily and win their favor. Therefore, the shape of mushroom was simulated in the design of this bamboo lamp for children by mechanically processing for thin bamboo glulam. When the light is turned on, the thin and transparent bamboo lampshade gives out soft light, which makes the child feel very relaxed and comfortable. The upper part of mushroom head uses the form of bamboo weaving. Weaving the bamboo into a round surface so that it presents a density form. This design chose the bold warm orange. As shown in figure 1

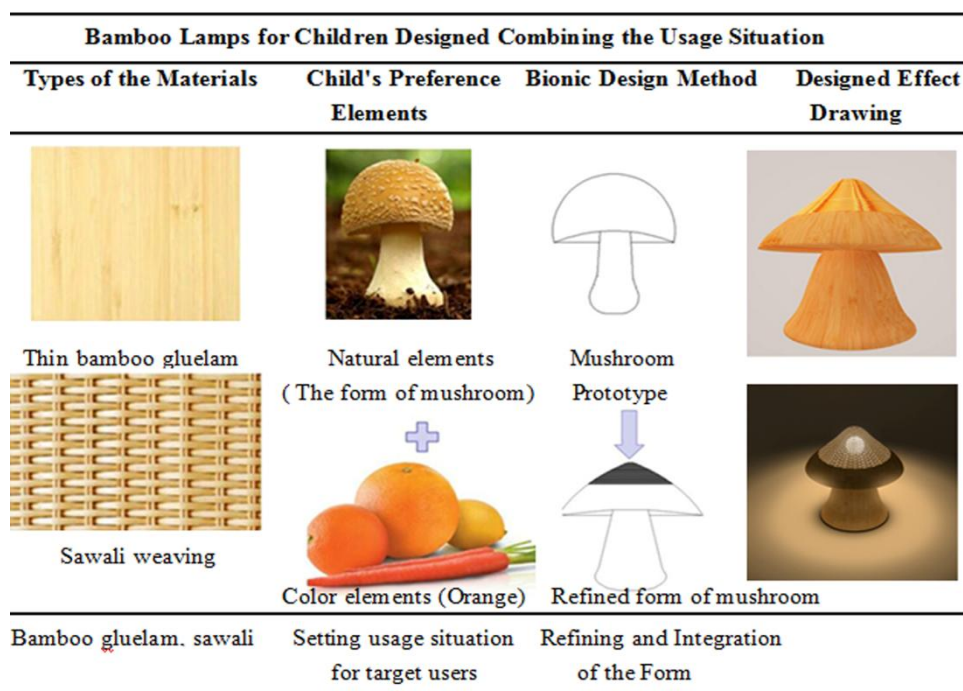


Fig.1 "streamer fairy tale"-bamboo mushroom lamp  
Picture: own design



## **2.0 THE EXPECTED SEMANTICS OF BAMBOO LAMPS**

After analyzing the usage situation and the culture situation of bamboo lamps, setting up the expected semantics for bamboo lamps is a very key step. According to the different roles bamboo lamps play in usage situation, the form of bamboo lamps can be divided into two kinds. One is the extensional semantics, the other is connotative semantics. There two kinds of semantics constitute the expected semantics of bamboo lamps. It means that the form design of bamboo can never be separated from these two kinds of semantics. Extensional semantics takes the modeling of product as its fundamental purpose so that people can easily know what the product is, what function it possesses and how to use and so on through the appearance of the product. Therefore, designers must make clear the functionality of the product and the elements and extract the functionality of the product from all factors before design bamboo lamps. Connotative semantics demonstrates the symbolic function of the product. It indirectly shows the connotation in addition to its own material function through the external form of the product and the corresponding visual symbols. It reflects the social, psychological and cultural symbolic value of a product in its usage environment[2]. Hence the setting of the connotation is a complex process, which needs to be considered from aspects of people's psychology, sociality and culture.

figure 2 bamboo ceiling lamp "Zhong Zhen Zhu Xin" is a berth lamp in forms of bamboo flute. It is designed by analyzing its connotative semantics which is one method of the form semantics design. Connotative semantics is the soul of the design method of form semantics, which embodies the potential social and cultural characteristics of the lamp. The design of "Zhong Zhen Zhu Xin" is just based on the connotative semantics of the form semantics design of bamboo lamps, which combines Chinese ancient music culture with bamboo lamps and reflects the profound cultural connotation.

As is known to all, the chime is ancient Chinese large percussion instrument. As an instrument used specially by upper classes, the chime is a symbol of rank and power. This design extracted the chime as the form elements to make lamps, and then abstracted and integrated it. The smooth circular-arc is used as the outline of the lamp, the bottom of the lampshade adopts the bending semi-circular section which is full of the sense of streamline. The middle of it is high, the sides is low, which forms a gradual curve effect. The design combined the excellent bending property with the translucent soft performance of bamboo. The weaving of inner lampshade adopted the fine crossed weaving which is similar to the weaving form of the basket bottom, and its outer lampshade was made by bending, combining and fixing the fine wires. The inner lampshade is "real" and the outer lampshade is "virtual", which forms a comparison of the virtual and the real and the effect of false and true. Through the extraction of the typical elements "the original chimes" and the use of bamboo which has excellent performance, the heavy sense of history of the chime conveys the implication of the new era by fresh bamboo skillfully. At the same time, using bamboo to load the outline of the chime also revealed a deep breath of nature. Thus, in the form design of bamboo lamps, with the premise of the familiarity and understanding for the properties of bamboo, make full use of the excellent properties of bamboo and take advantage of the connotative semantics, modern materials and technology means to Inherit and deduce the profound cultural connotation of China, which will become more and more popular. As shown in Figure 2

## **3.0 THE TRANSFORMATION AND INTEGRATION OF THE FORM SEMANTICS OF BAMBOO LAMPS**

After setting the expected target of form semantics, the predetermined target should be converted into the concrete form. The way to convert is that using shape, color, texture and other visual symbols to reflect the extensional semantics. Through the application of one or several indicative, emotional and symbolic visual symbols to the form elements of the product, the connotative semantics of it will be expressed well. Signifiant and signifie constitute a visual symbol. Signifiant is the physical basis to constitute these



targets, and signifie is the expected target of product semantics. The designers' work is to integrate the expected semantic of the form semantics, so that the form element can reflect the form of the product better.


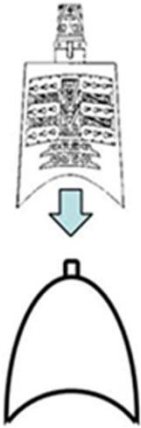

Design Practice of Transforming and Integrating for the Form Semantics of Bamboo Lamp		
Type of Bamboo	Cultural Elements	Designed Effect Drawing
		
Sawali	Refining the form elements of chime(reflecting the culture semantics)	Zhong Zhen Zhu Xin Bamboo Pendant Lamp

Figure 2 "Zhong Zhen Zhu Xin" - Bamboo Pendant Lamp

Picture: self drawing

Figure 3 "Di Zou Qing Yun" bamboo lamp is designed by using the "transformation and integration of form semantics" of the method of form semantics design. As is well known, the panpipe is an instrument popular in the Han Dynasty of China because of its unique shape and pure tone. It is so soft and delicate and has a long history, so that it become an important part of Chinese national culture. This design extracted panpipe as the main design elements, and the upper frame is made up of bamboo tubes and bamboo gluelam arranged according to the order from high to low. In material, Using the round bamboo tubes, removing and featheredging the bamboo green. The small square holes dug in the bamboo tubes at random make the bamboo lamp full of lively and modern sense. All of these constitute the modeling elements of bamboo lamps. In color, adopting the bamboo gluelam whose color is the same as that of bamboo tubes, and the pale yellow brings people a comfortable and natural feeling. In material quality, the bamboo gluelam is made through spreading the rectangular bamboo pieces lengthwise, broadening rectangular bamboo pieces broadwise, and then machining. The appearance of it became smooth and delicate after finishing and sanding the surface, which made it more popular. These visual symbols together constitute the extensional semantics. Its connotative semantics is constructed of the national cultural spirit this ancient musical instrument itself inherited and the deep connotation of bamboo culture derived from people's prefer for bamboo. These symbolize the excellent culture of China which has been handed down for thousands of years, and constitute the connotative semantics of this bamboo panpipe lamp. As shown in figure 3

The "Di Zou Qing Yun" bamboo decorative lamp mainly utilized the process of transforming and integrating of the method for form semantics design. As the main design semantics, the connotative semantics of the





bamboo lamp was conveyed to consumers through the symbolic Musical culture symbol—the form of bamboo panpipe lamp.

**Application and Practice of Connotative Semantics in the Form Design of Bamboo Lamps**


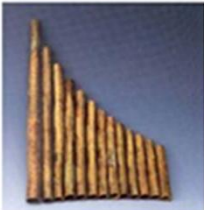



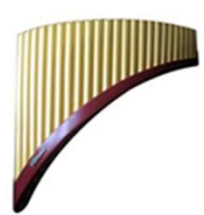
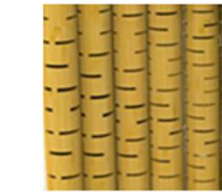

Type of Bamboo	Visual Symbols	Modern Elements	Designed effect drawing
			
			
Bamboo glue-lam. round bamboo	form symbols of panpipe- modeling, symbol, culture	Integrating into modern elements (modeling, color)	

Figure3 "Di Zou Qing Yun" Bamboo Floor Lamp

Picture: self drawing

**4.0 THE ENCODING AND DECODING OF THE FORM SEMANTICS OF BAMBOO LAMPS**

**A. The concept and process of the encoding decoding for bamboo lamps**

The so-called encoding refers to the designer convey the information will be identified through a series of specific symbols such as shape, color, material, etc, so that their design ideas can be expressed through the form of symbols. Generally speaking, the encoding rules are set by people in a certain area through their long social practice. They can not be changed arbitrarily, which has national limit, geographical limit and times. While the decoding is the opposite, it is a process of reduction of information, the understanding and interpretation of the designer's idea, and the process of transferring signifiant into signifie. The receivers obtain the meaning of the product through their perception for visual elements, tactile elements and so on based on the encoding rules[3].

The design encoding process of bamboo lamps has no exception. It is also the same that designers express the function of the product and their design concept through the designing for its model, color, material, texture,etc, which will cause people's intuitive feelings and associations, emotional and other physiological and psychological reactions. Encoding and decoding are very important steps in the form semantic design. It not only determines whether the designers can convey their intention accurately to the users (the decoder) through the shape of the product, but also determines whether the users can obtain the design semantics according to the shape, color and other visual elements, material, texture and other tactile elements. We should interpret the process of design semantics correctly. As bamboo is a natural



environmental protection material, applying it to design lamps can narrow the distance between people better and win people's love.

Figure 4 "Xiang Li Ren Jia" takes the cultural element which has the characteristics of Huxiang culture as modeling element to encode according to the encoding rules. The first is to abstract and refine the form of Diaojiao Building to form the Modeling encoding and integrated into the form design of the bamboo lamp. Simplifying and abstracting the cornices style which is the representative image of Xiangxi Diaojiao Building, and using the Y-shape sheets made by pressing the bamboo gluelam to make the part of lampshade. Fixing the lampshade and the base with bamboo sticks arranged orderly, thus, on the one hand, the function of fixing is achieved, and on the other hand, the abundant shadow formed when the light passing through the bamboo sticks can play a role in decorating the environment. In the choice of colors, chose the tan that is appropriate to Huxiang culture as the main color according to the encoding rules. It looks sedate and noble, and can profoundly reflect the essence of Huxiang culture. Finally, in the bottom of the chandelier, using the hollow bamboo gluelam as the base plate, which used another important element of Huxiang culture—Hunan brocade to fill the hollow. Because of the bright colors and the wide varieties of Tujia brocade, it can reconcile the dignified appearance of the bamboo lamp and add a touch of bright color to bamboo lamp. At the same time, as an important constitution of Huxiang culture, it was also encoded into the form of bamboo lamps. As shown in Figure 4

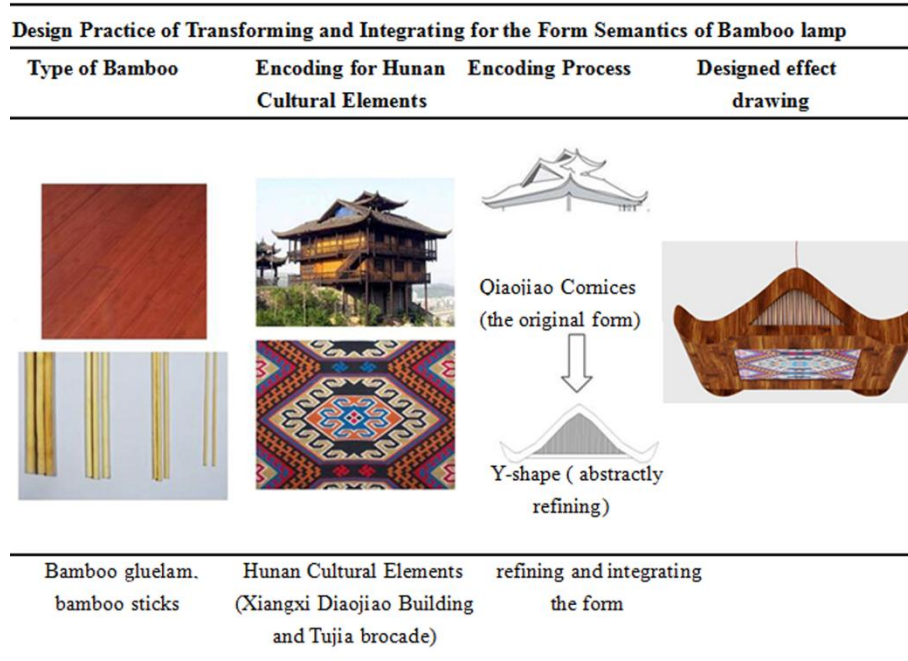


Figure4 "Xiang Li Ren Jia" Bamboo Pendant Lamp

Picture: self drawing

According to the coding and decoding rules of the form semantics design method, the "Xiang Li Ren Jia" bamboo chandelier, whose main body form was constructed of the abstracted and simplified form of stilted building which is full of Huxiang culture, used phyllostachys nigra and Tujia brocade as its constitute elements. The Huxiang culture semantics was Integrated brilliantly into the form of bamboo lamps through coding decoding rules. Therefore, it can reach a perfect combination of the form and the meaning.



***B. The method of encoding and decoding for form semantics of bamboo lamps***

The method of encoding and decoding for form semantics of bamboo lamps includes the feeling encoding, narrative encoding and symbolic encoding. The feeling encoding refers to an intuitive feeling the product gave to its consumers through analyzing the usage situation and people's needs. Designers bring a different psychological feelings for consumers through the different expression for the form, color and texture. Narrative encoding gives meaning to the product through the form of telling stories. It pays more attention to the situation that product created to arouse the user's memory and contact. Designers always like to contact the design object with some irrelevant things, which can bring the user a kind of pleasure. Symbolic encoding is the highest level of design. The product is not only simple to meet the people's material needs or emotional needs, the deeper level it conveys is a symbol of culture, history, society and religion. Designers express the abstract meaning through the concrete product [4].

**5.0 THE EVALUATION AND SUBLIMATION OF THE FORM SEMANTICS OF BAMBOO LAMPS**

After integrating the product semantics into the actual product, it is also necessary to make an overall evaluation for the product, which needs to carry out a preliminary investigation of the product and user feedback, etc. If the feedback conflicts with the original goal, then adjust the design in time to make it squared with the original agreement.

**6.0 CONCLUSION**

Lamp is an indispensable daily product. Bamboo lamps become more and more admired and loved by people due to its fresh and elegant appearance and ecological environmental protection. Using the form design method for bamboo lamps to design the bamboo lamps can dig more cultural connotation through the form of bamboo lamps. Thus, it can not only satisfy the gradually improved aesthetic and cultural needs of people, but also conform to the development of the times. I hope this paper can infuse new blood into the shape design of bamboo lamps, and provide the broader idea and theoretical support for the shape design of bamboo lamps.

**7.0 ACKNOWLEDGEMENT**

This work was financially supported by the Program for Forestry Science and Technology Promotion Project: the Promotion and Demonstration of Key Technologies of Round Bamboo Processing(2014No.54), the New Century Excellent Talents in University (NCET-12-0725) and the program for college students' researching study and innovative experiment in Hunan Province: Creation of Bamboo Lamp Products( 2014 No. 248).

**REFERENCES**

- [1]. L.Q. Gao. Product Semantics Design[M]. Mechanical Industry Press.Beijing,China, 2010
- [2]. L.Zhong,X.L.Xi. The application of connotation in furniture design [J]. Packaging engineering of China. 2008, 5-15. Available: <http://cnki.net/>.
- [3]. H.J.Wu. R.Z.Zhu. X.R.Zhou. Product form design basis[M]. Art and design, Beijing,China, 2010, 12-15. Available: <http://cnki.net/>.
- [4]. J.Zhang,Q.S.Xie. Research on the emotional symbolic semantics of product form symbol based on product semantics[J], Art and design. Beijing, China, 2009. Available: <http://cnki.net/>.
- [5]. X.J.Bo. Exploration of the Communication Coding in area of Morphological Semantics of Product[D]. Central South University.Hunan,China, 2008. Available: <http://cnki.net/>.
- [6]. Y. Tao. Research on Product Semantics and Its Application in Automobile Modeling Design[D].Chongqing University. Chongqing,China, 2006, 4. Available: <http://cnki.net/>.
- [7]. X. Bao, R.Pan. Principles and Procedures of Product Design in the View of Semantics[J]. Modern Decoration. Shenzhen,China, 2012. Available: <http://cnki.net/>.

**Research Article**

**Copy Right ©KY Publications**

**Journal of Advanced Studies in Agricultural, Biological and Environmental Sciences (JABE) [www.jabe.in](http://www.jabe.in)**

A Peer Reviewed & Refereed, International Open Access Journal



**Vol.2.Issue.3.2015 (July-Sept.)**

**ISSN:2394-2606**

- 
- [8]. J. Zhang, Q.S. Xie. Research on Emotional Symbolic semantics Design of the Morphological Symbol of Products Based on Product Semantics[J]. Art and Design. Beijing, China, 2009. Available: <http://cnki.net/>.
- [9]. X.X. Zhou, L.S. Piao. Encoding and Decoding of the Shape Semantics Design of Lamp[J]. Art and Design. China, 2010,12:15. Available: <http://cnki.net/>.
- [10]. Qiong Lei, Jingshu Gao, et al. Research on the Basic Semantic of Shape Design of Bamboo Lamp[J]. International Journal of Agriculture Innovations and Research,2015,4(1):197-200
-