

## Cognitive-Based Visual Element Semantics

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**Abstract:** This paper takes the semantics of visual elements in graphic design as the research object, and analyzes its content and expression form from the perspective of cognition. Through the basic introduction of the semantic features of visual elements, the complete visual element semantic content is discussed in the four aspects of graphics, text, color and visual psychology, and based on the analysis of their respective performance types and cognitive influence conditions, Research provides reference materials.

### 1. Introduction

Vision is the sensory ability of human beings. In terms of influence conditions, different visual contents will make a difference in human cognition. Especially in the design and processing of visual elements, the “semantic” features presented in the form of expression are important conditions for the overall visual elements. In order to better illustrate this “semantic” in visual elements, it is necessary to locate its basic features.

### 2. The Semantic Characteristics of Visual Elements

In the form of visual design, the communication of information content can stimulate the emotional resonance in the audience without being affected by language or text differences, and achieve communication through this consistent emotion and thinking cognition. Ensure the effectiveness of visual element design applications. In order to ensure the accuracy of semantic information content in visual design, we must first understand the various potential semantic information elements, and form a complete design principle and basic system under the premise of sorting out the overall information characteristics. This guarantees the accuracy of the visual elements. In the process of visual element semantic construction, the characteristic conditions can be roughly summarized into the following types.

First, the intuitiveness of the content. In the creation of visual effects, direct visual impact can be brought directly to the audience through the organization and design of the images, and in the information with semantic content, the effectiveness of visual processing can be ensured, and the information subject can be more efficient. The completion of the communication. Second, express the memory of the content. In the construction of visual element semantics, relying on the unique advantages of content, it brings a deep impression to the audience. Through this form feature, the influence time of visual element information can be better extended, and the applicable value of semantic expression [1] can be improved. Third, the cultural content of the information content. In the semantic creation of visual content, a large amount of cultural attribute content can be added to it, and the cultural influence is more deeply expressed while causing the audience to think. Under this condition, the quality characteristics of the overall visual element content can be improved to make it have a stronger influence, complementing the defects and deficiencies of the flat information display. Fourth, express the simplicity of the content. In the semantic modeling of visual elements, it is necessary to emphasize the principle of simplicity in the semantics of elements. Through this simple symbol information, the semantic information content can be more accurately positioned, so that the content of the visual element language can be better transmitted to the audience and complete itself. An objective mission as an information carrier.

### **3. The Visual Element Semantics under Cognitive Conditions**

#### **3.1. Graphic semantics**

In the process of graphic visual design, it can highlight the visual characteristics while composing visual effects, and as an important way to ensure the transmission of visual semantic information, the impact of cognitive content is completed. The graphic design elements based on the graphic form can use the aesthetic conditions of the graphic itself to present novel artistic expression effects and optimize the visual information.

At the same time, in the process of shaping the content of the graphics, it is necessary to ensure the full play of its three characteristics. First, we must ensure the intuitiveness of the graphics to the content of the information, in order to highlight the profound semantics in the graphics, maintain the integrity of the overall information, and achieve semantic content communication. Secondly, as a graphic with obvious artistic features, in the process of semantic expression, it is necessary to make its design form to show the beautiful quality as much as possible, and to meet the optimization needs of the display effect through the extraordinary content. Thirdly, in the semantic expression content, the graphic semantics should present the characteristics of the times as much as possible. By applying the novel expression techniques, the visual design content and the advanced thought cognition are combined to ensure the quality of semantic expression.

Graphical symbolic content in visual design needs to form a unified system through the construction of subjective content, and conveys the overall emotional content while presenting the content such as pattern modeling and image compilation, and maintains the fullness of the graphics while supplementing the visual Impact effect. In a complete design work, the technical processing of graphic points, lines and surfaces can be used to improve the flexibility of graphic design management, express the overall flexibility more efficiently, and realize the optimization and upgrade under the guidance of visual element semantics. Under the support of the simplistic design principle, through the application of the line expression form, the design information can be more accurately positioned, and in the simple, bright and generous design, with the curved line of the curve state, the overall graphic sensation is improved. The effect is to deepen the semantic expression in graphics processing.

#### **3.2. Text elements**

The semantic expression in the visual design element can directly apply the text, and on the basis of the function of the basic language, add the artistic content to the text, supplement and strengthen the characterization conditions in the prominent text expression, through the text modeling Optimized adjustments have an impact on people's visual senses and psychological feelings.

In terms of methods, we must first pay attention to the aesthetic conditions that come with the text modeling, and then pay attention to the emotional factors in the text content. While analyzing and utilizing the content characteristics of the text, it supplements and improves the adaptability conditions of the text in visual design. For example, in the process of using Chinese characters to supplement visual element design, we can learn from traditional calligraphy concepts and adjust the visual change conditions such as stroke shape, line thickness, and rigid and soft force. Thus, the textual and artistic content of standardization, artistry and high recognition is formed, and the semantic expression of the graphic elements is shaped [2] while coping with the semantics of the text itself.

In the application of text elements, each of the different fonts has different emotional characteristics, and while conveying the basic text concept content, through the Abstract.symbolic language, while forming the static language tools, it also shows its own artistic Style information. For example, the Song characters have a dignified and solemn momentum; the bold characters show masculine rough and thick; the scripts convey a lively and natural form; the imitation Songs are characterized by grace and lightness; With a traditional ancient atmosphere. Therefore, in the application of different fonts, it is also possible to separately shape the differentiated theme content.

From a cognitive perspective, this differentiated style can also be applied in different fields, highlighting the value of information transfer. For example, in the visual design of medical products,

if applied to text elements, you can try to use bold characters to supplement the security of the text content and improve the trust of the audience. In another example, in the visual design of women's cosmetics, words can be transformed into soft and beautiful fonts, and necessary adjustments can be made according to design needs, so as to improve the communication of semantic content in the information.

### **3.3. Color semantics**

In visual art, color has an intuitive performance and is the main element that constitutes and fills the overall visual interface. In the high-density social information environment, for the use of color, it is necessary to improve the intuitive characteristics of expressing semantics, eliminating the implicit and fuzzy tone conditions, and grasping the audience's eyeballs through the use of vivid colors. To complete the effective communication of visual elements of visual elements.

From a cognitive point of view, color can not only make the basis of visual recognition and symbol, but also the key condition for people to enrich their association. In the display of visual elements, successful color applications can bring different emotional and psychological experiences [3], such as joy, refreshing, gorgeous, deep, and gloomy. Thus, in the color scheduling, the psychological cognition is affected, and the specific visual cognition is supplemented and optimized.

### **3.4. Visual psychology**

The visual image, to a certain extent, will also trigger people's thoughts and emotions. Under the effect of specific image features and posture conditions, it will have an impact on people's current state. For example, when people see a straight line, they will subtly produce a serious, cold feeling, which is the extension and transmission of static velocity information, and also a profound expression of the semantics of visual elements. Conversely, when you look at the curve, you will have a stretchy, passionate psychological change. Therefore, from the differential change conditions of the graphics, to the change effect of the cognitive content, the "semanticization" effect of the overall visual psychology is realized. In addition, in the process of constructing visual psychology, it is necessary to clearly recognize the "illusion" attribute of visual space. When creating this "illusion" scene, multi-element aids can be used to make the picture formation more effective in completing psychological cues. Guarantee the visual and psychological information transmission effect.

## **4. Summary**

In summary, visual element design and application, adding obvious "semantic", can better complement the cognitive conditions in its content, and ensure the effectiveness of visual design information transmission while forming the integrated content. From the perspective of sociality, whether it is people's cognitive inertia or the development of social and cultural attributes, the "semantic" optimization of this visual element will help its own design upgrade.

## **References**

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