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## GRAPHIC DESIGN LANGUAGE OF LIGHT EFFECT ART

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### Abstract

Light effect art, also known as "op art" and "visual illusion art". Compared with traditional artistic expression, this kind of artistic expression is grasped by people with intuitive visual experience medium, rhythm, color, texture, size, change, consistency, simplicity, complexity and picture processing. For the education and practice of modern art and art design, whether it is in visual communication design, architectural design, interior space design, or furniture display design, light effect art design reflects the relationship between artworks and aesthetic intuition. Find out the inherent law of visual art, and embody its value and function.

### Introduction

Light effect art, also known as "op art" and "visual illusion art". It refers to an abstract art that was popular in Europe and the United States in the mid-1960s, using geometric images to create various light and color effects, causing different combinations of light and shade and colors, producing motion illusions, visual illusions, and strengthening painting effects. . Usually shown in two-dimensional painting, two-dimensional design and three-dimensional works. Light effect art uses the principle of optics to change the length of the waveform when the color is transferred, or to draw very thin lines with a drafting instrument, and to artificially process the light color variation to create a "light effect phantom" that gives people visual errors. The image in light effect works of art is far away from objectively existing natural objects, and it is a symbolic image of purely emotional color or schema.

Its specific method is to use the repetition or interruption of simple geometric shapes, the complementary color relationship of color blocks and the continuity and juxtaposition of structures to achieve the effect of painting. We often use tools such as rulers and compasses when drawing, and some can also use a large number of copies and reproductions. Painters engaged in the art creation of light effects often have relatively proficient skills and perfectly grasp the laws of pattern art, which can produce ever-changing effects in their works. It can be said that they broke the boundary between pure painting art and decorative pattern art, and had a greater impact on arts and crafts screen art, advertising art and architectural art.

We know that the reason why people see objects is either a natural scene or an artificially produced grotesque scene, because various light rays irradiate the surface of the object and then reflect into the eyes. Without the effect of light, the shape, color, size, volume, virtual reality, texture, texture, material, etc. of objects cannot be perceived by people, so there is no effect of light and the expression of visual language.

Nowadays, with the development of science and technology and the progress of computer design era, light effect art has been widely used in our design, pursuing a unique visual effect and psychological feeling. For example, in graphic design, the application of light effects of printing technology, skyscrapers in the city, eye-catching glass walls , dynamic movie screens in theaters, light and shadow scenes in time tunnels, interior space design in bars or dance halls, all of these are inseparable from the role of light. Therefore, light plays a vital role in the visual perception of plane or space in our design field. It often manifests itself in the following ways:

### In graphic design, the application of light effect art.

As early as 1910, Wassily Kandinsky published "On the Spirit of Art", in which he talked about the visual and psychological feelings that light effect art brings to people's vision, perception and illusion, and created some works. Later, when he was at the German Bauhaus School of Design, he successively published works such as "Problems of Form", "On Concrete Art", "Points, Lines, Surfaces", and "Problems of Form". In this way, the art of light effects has been widely used in the basic teaching and design practice of the Bauhaus School of Design,



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and has a far-reaching impact. Arbas, a young teacher who taught at the Bauhaus School of Design, was deeply influenced by these design theories and ideas. Later, Arbas designed and created a famous light effect art work - "Arbas Graphics", " In the center of two connected cubes, there is a small narrow parallelogram, sometimes you think this The quadrilateral belongs to the left side of the lower cube, so the lower cube is protruding forward, and sometimes you think it belongs to the right side of the upper cube, so the upper cube is protruding forward, and the lower cube is concave. This kind of guessing According to him, the judgment of indeterminate space contains some kind of secret of the universe, and some people call it the four-dimensional space of super three-dimensional space ." In addition, Arbas also designed and created representative color works, most of which belong to the combination of simple, unified, orderly, normative and orderly form templates. His works not only reflect the beauty of abstract art and constructivism Moreover, the graphics and colors created by the design obviously affect people's visual activities. For example, in his "Salute to the Square" series (as shown in Figures 1, 2, 3 , and 4), in these four works of combination of shape and color , color plays the main role in the picture, and the difference between the same color or different colors The combination produces a variety of different visual effects, with the same form but different colors , producing a visual effect of " front and back displacement " . The change and connection between the combination of shape and color is the external cause of continuous continuation and change. In the four works in Figure 3, the areas of the four square sequences from the outside to the inside decrease successively according to the ratio of 5:4:3:2. The four squares are symmetrical on the left and right, wide at the top and narrow at the bottom, and the height from top to bottom also forms a ladder with decreasing equal difference. This arrangement itself produces the visual effect of retracting and retracting, but what Arbas emphasizes here is not the form , the reason why the regular square sequence combination with the same or similar proportions is used is to make readers ignore the information conveyed by the form of the picture as much as possible, so as to enhance the understanding of the color change of the picture.

The visual experience brought about by transformation.

Figure 1 is the most conventional form of color combination. The color change from outside to inside is from yellow to orange-red. The change in Figure 2 is slightly more complicated than that in Figure 1 , where there is a more obvious change in color, and the color contrast from orange to gray-green makes the space between the squares blurred.

As a result, as the visual center walks between the various color blocks, the color and the color background change, and the visual sequence of each square will also change accordingly. This change is shown in Figure 3 and Figure 4 It is more obvious that the original rules are broken, and it is more difficult for the point of view to focus according to the original color order, which makes the change of the spatial order of the squares in these two paintings more drastic. Therefore , Arbas first makes readers have spatial optical illusions through the change of color order; secondly , makes readers unconsciously be affected by other colors to produce color optical illusions while staring at a certain color, and then in Changes in color perception are produced on the basis that the original physical properties of the color remain unchanged. In the words of Albas: " The key to the visual effect of a color is not the color itself, but the color environment around the color. "



**Figure 1**



**Figure 2**

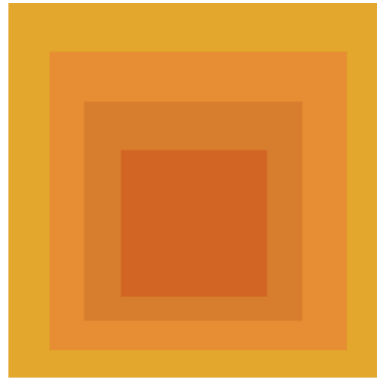


Figure 3

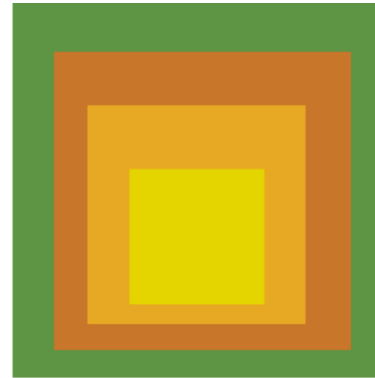


Figure 4

### **In architectural design and interior design, light effect art is widely used.**

"Light is the source of all things. Light strikes the surfaces of objects, outlines them; gathers shadows behind objects. Gives them depth. Along the boundary between light and dark, objects are clearly represented, acquiring their own form, show the relationship between each other, and be in infinite connection." This is the incisive description of light by the famous Japanese architect Tadao Ando. At any time, light gives things a new form of core connection, and architecture condenses light into the most simple existence. The creation of architectural space is the purification and concentration of the power of light. In the process of architectural design and interior design, the element of light is one of the necessary factors that designers need to consider. We can look back at the ancient buildings left over from history, and we can see that there are countless design works with light as the design element, such as the Gothic church known as the "Temple of Light", where the light shines through the high linear windows The stained glass on the roof shines into the ethereal and deep church. The colorful, exquisite and psychedelic stained glass can produce a dreamlike artistic conception through the irradiation of light, making the space of the church full of rhythm, sense of rhythm, sense of line, A sense of order makes people feel as if they are in a paradise world; for example, the Baroque architecture full of strength, change and dynamics-the San Carlo Church in Rome also uses the element of light, emphasizing the comprehensiveness of the indoor environment and embodying the baroque The exaggerated, romantic, passionate, irrational, hallucinatory, and fantasy design features of the building create a strong religious and mysterious atmosphere, which meets the needs of the Catholic Church to show off wealth and pursue a sense of mystery.

In short, Gothic and Baroque architecture used to use heavy walls to separate interior spaces from the exterior. The window insets seem to be thick walls that deny the outside world, narrow and well-constructed. Such a window concentrates intense light and is not so much a source of light as it lets it into the room. They express the basic need for light of people who live in darkness. Intense beams of light penetrate the silence in darkness, evoking sublime feelings. Windows are not used for visual pleasure, but purely for the penetration of light. The light that penetrates the interior of the building creates a solidly shaped space. Rigorously constructed openings precisely capture the movement of light. Like creating sculpture, space is sculpted by beams of light passing through the darkness, its surface changing with continuous movement.

Another example is traditional Chinese architecture and interior design, which is generally dominated by wooden structures. When dealing with buildings such as temples and halls with large interior spaces, it is easy to flexibly use partitions, doors, windows and screens with oriental art forms and traditional artistic beauty. The secondary or multiple divisions of the interior space by the objects create a subtle and elegant mysterious atmosphere (as shown in Figure 5).



**Figure 5 Quiet and mysterious temple windows**

In ancient times, for human beings, light was a measure of time. Architects cleverly use natural light to completely design and build architectural space, structure, shape, and functions. Through the dimensions and proportions, volume, depth, size, height, and shape of the space, they solve the problem of space and The connection, contrast, unity, harmony and other issues between light. Modern architecture combines natural light with artificial light , liberates windows from the constraints of architectural structures, and creates imaginary artistic living spaces on a large scale. When we wander among the high-end office buildings, the part that attracts our eyes is the fashionable glass curtain wall and the dazzling curtain wall reflection. Looking up at these tall and towering modern buildings, in addition to the beauty of modern architecture and technology, it creates an overly transparent world-a world of floodlight. Looking at these modern buildings for a long time, people will have a visual illusion reaction, which will arouse people's visual psychological feelings towards these bizarre buildings, either visual sensory stimulation, or visual psychological strong reaction.

### **The value and function of light effect art design.**

The education and practice of modern art and art design, the value and role of light effect art design are obvious. Regardless of whether it is in visual communication design, architectural design, interior space design, or furniture display design, light effect art design embodies the relationship between artworks and aesthetic intuition, explores the internal laws of visual art, and reflects its value . Artists or designers continue to create aesthetic orders one after another and further create new visual orders. They are constantly pursuing the perfection and harmony of visual experience . In the process of creating these light effect art designs, they deeply explain people's visual phenomena and symbols scientifically and rationally , transform these abstract theories into visual languages that are easy to read, profound and simple , and convey our understanding of art. Awareness and understanding are taken to a whole new level of rationality. Light effect artists often think that light effect art is the essential expression of art, but the essence of light has been covered by many human cultural accumulations for too long, and now we should understand art from the light effect itself. The light effect artwork is presented as: abstract , avoiding superficial interest , geometric and hard-edged shapes , appropriate in scale . In the art of light effects, there are generally three kinds of movements that can enter painting: one is the reproduction of real movements ; the other is "physical " movements ; Therefore, some people regard light effect art as the scientific research achievement of visual art, which is the result of the development of young artists' interest in science and technology.

In short, light effect art starts from the human eyes as the starting point for exploration, and opens the window of the soul, which means observing the wonderful and changing visual phenomena and symbols. This kind of light effect art is important for every visible eye. All are equal . Compared with traditional artistic expression, this kind of artistic expression is grasped by people with intuitive visual experience medium, rhythm, color, texture, size, change, consistency, simplicity, complexity and picture processing. As a result, people have gained visual content experience and visual psychological feelings. Therefore, light effect art has completely opened up a new art space that is different from the traditional sense.

### **Bibliography**

1. Gao Bingqiang: "New Art Movement", Shanghai, Shanghai Dictionary Publishing House, 2010.



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2. [English] Cyril Beret: "The Art of Light Effects", translated by Zhu Guoqin, Shanghai, Shanghai People's Fine Arts Publishing House, 1991.
3. [US] Arnheim: "Visual Thinking", translated by Teng Shouyao, Chengdu, Sichuan People's Publishing House, 1998.
4. [English] EH Gombrich: "Art and Illusion", Changsha, Hunan Science and Technology Press, 1999
5. Wang Kuanyu , Wu Wei : Arouse Aesthetic Intuition -- Analysis of Joseph Arbas' Art Works , Design Online, 2006-11-09 .