

Research on Design Innovation of Graphical Advertisement Based on Visualization and Graphics

Dou Liu

School of Art&Design, Hubei University of Technology, Wuhan, China

Abstract. This paper explores the application of the combination of "visualization" and "graphics" in the expression of graphic advertising design. Based on the contents of psychology and advertising, literature research, comparative analysis, empirical research, and interdisciplinary research are used to identify feasible ways to present visual expressions that combine "visualization" and "graphics". The technology that combines "visualization" and "graphics" has enriched the presentation of graphic design, broadened the expression of graphic design, and provided new room for the creation and expression of two-dimensional graphic advertising design.

Keywords: "Visualization" and "Graphization"; Print advertising; integration.

1. Introduction

With the development of modern communication technology, photography technology, computer technology and the application of digital communication concept, people have officially entered the era of graphic language. Various kinds of graphic languages have clearly surpassed other visual languages such as words and become the primary medium for modern people to communicate ideas and obtain information. In particular, the combination of "visualization" and "graphic" technology has given the graphic language multiple forms of expression, and its function has extended from a single documentary to the communication of artistic ideas and the expression of the subject's emotions. Specifically in the field of print advertising, images processed by digital technology can give audiences a more graphic and three-dimensional presentation, helping designers to convey more accurate creative intentions. In view of this, it is necessary to systematically summarize and conclude the expressive qualities of the combination of "visualization" and "graphic", find out the general idea of its design integration, establish a practical application system of the combination of "visualization" and "graphic", and expand the new space for the development of print advertising.

2. The connotation and characteristics of the combination of "visualization" and "graphic"

2.1. The connotation of the combination of "visualization" and "graphic"

The understanding of the combination of "visualization" and "graphical" is based on "image". The word "image" has different meanings in different disciplines. In Cihai (A Collection of Words), "image" is defined as a photographic term, which refers to the image of an object made of mirrors, lenses, etc. It also refers to a flat image generated by light-sensitive materials under exposure and display, which is basically the same as the original object. The "image" in this paper belongs to the field of two-dimensional graphic design, and its essence is the same as the "image" in the term of photography, which refers to the reproduction of the image of things in a two-dimensional plane. The combination of "visualization" and "graphics" is a product of the development of photography technology in modern society to a certain stage, and in the field of design, it is also known as "digital imaging". In a narrow sense, it is a new image produced by digitizing the image with the help of computer and software technology. In a broader sense, it covers all image elements generated by modifying, copying and reproducing them through electronic devices, smart terminals, etc .

2.2. The characteristics of the combination of "visualization" and "graphic"

2.2.1 Reproducibility

The combination of "visualization" and "graphics" is stored in electronic media in the form of data that can be copied repeatedly with the help of modern technology. In general, commonly used design software such as Adobe Photoshop, Adobe Illustrate, 3ds Max, etc., as well as the Windows platform with its own image viewing software can achieve the purpose of combining "visualization" and "graphic" for replication. Taking the most used Photoshop as an example, designers can not only copy the image as a whole, but also copy, paste, and drag different layers and areas of the image to obtain images with different visual effects, ideations, and styles.

2.2.2 Accuracy

The combination of "visualization" and "graphics" is accurate because it is generated and modified in units of pixels, which are inseparable from the precise measurement of pixels. In modern design, designers use computers and design software to operate the combination of "visualization" and "graphics". Each pixel in the image is given a fixed value and functional pointing under the specification of the program or calculation formula, which greatly reduces the errors arising from traditional human eye observation, copying, and modification, and the picture quality is more delicate and perfect [2]. For example, the RGB values for red are (255, 0, 0), green are (0, 255, 0), and blue are (0, 0, 255) in various design software. When the designer determines a certain color, he or she can input the RGB value to ensure the stability and accuracy of the final presentation quality of the combination of "visualization" and "graphics".

2.2.3 Virtuality

The designer is able to use computer technology to synthesize and modify the combination of "visualization" and "graphics" to achieve virtual, surreal effects that are difficult to achieve with traditional documentary photography. The combination of "visualization" and "graphics" presents a virtualization that can be either a visual simulation under specific conditions or a reproduction of a three-dimensional or even multidimensional space [4]. For example, in the Samsung wide-angle monitor advertisement jointly designed by Korean designers Joungrack Lee and JaewonChoi (see Figure 1), the designers used Photoshop, 3D, Maya and other design software to synthesize different angular images of close-up portraits of people in a frontal two-dimensional plane, thus forming a completely virtual imaginary space that imaginatively conveys the powerful function of the brand's monitor to collect information in all directions.



Figure 1 Samsung wide-angle monitor advertisement

3. The integrated application of the combination of "visualization" and "graphic" in the performance of print advertising design

The combination of "visualization" and "graphic" has the qualities and visual efficiency conversion function to bring a new development space for print advertising design, and its integrated application in the performance of print advertising design is mainly expressed in the following ways.

3.1. Direct application

As the name implies, direct application means combining "visual" and "graphic" works as the main design elements to be placed directly in the print advertising works. It restores the true appearance of things to the greatest extent, retains the physical properties of things intact, and conveys the most intuitive visual experience to the audience. The combination of "visualization" and "graphic" mentioned here is mainly obtained through "digital photography" and "digital analog imaging". It has strict requirements for both imaging technology and equipment, and the presentation of the final visual effect will be affected by the imaging angle, picture light, stability, exposure, etc. After obtaining the image, the print advertising designer only needs to use computer software to micro-process the image, such as the adjustment of color scale, adjustment of light and darkness, adjustment of vignette, etc., and then it can be directly applied to the print advertising works. According to the analysis of the survey, this type of direct photography application is mostly used for product-based as well as industry-based print advertisements^[5]. This high-definition imaging method conveys the details and information of products precisely, with strong persuasive power and objective reproduction. Taking the Kobe X Nike commercial designed by Paul Hutchison as an example (see Figure 2), it uses digital photography to obtain Kobe's athletic figure, and with various post-processing methods, adjusts the whole image tone to black and gray. In this way, it not only conforms to Kobe's courageous and fearless sports spirit, but also creates a low-key and luxurious atmosphere, which has also gained a high brand recognition. Digital analog imaging is often used in the print advertising of some digital entertainment products. For example, the CMO LCD screen series advertisement "Extreme Color Rampage G" (see Figure 3) takes the image of digital simulation as the main design element, designs a game character with the help of 3D animation software, and then gives the character a series of movements and attitudes through anthropomorphic techniques to convey the product's characteristics of "wide color gamut, excellent image, high resolution and strong functionality".



Figure 2 Kobe Nike ad



Figure 3 CMO LCD screen ad

3.2. Deconstructing and reconstructing

Deconstructing means dismantling and decomposing the original thing and presenting it in the local form of small units; reconstructing means redistributing and combining the elements of the dismantled small units to create a new thing different from the original one. The deconstruction and reconstruction in the combination of "visualization" and "graphics" also follows this rule. Under the guidance of new ideas, the combination of "visualization" and "graphics" is cut and disassembled by modern computer software technology, and then the different elements are recombined by computer software to form a new image that is very different from the original one. The visual image, either from the front or from the side, interprets the print advertisement. This way of expression has a unique sense of form and attraction [6]. It can be said that the combination of "visualization" and "graphic" technology is a regular way of deconstruction and reconstruction in line with the growth pattern of all things, and is a non-accidental form of modeling on the inner organization rules [7]. The Mosfly Mosquito Coil print ad is also a combination of deconstruction and reconstruction (see Figure 4). The designers decomposed the whole life of mosquitoes, from eggs and larvae to pupae and adults, and then reconstructed them using a combination of "visualization" and "graphic" techniques. In order to create a strong visual effect, the designers used digital technology to repeatedly rotate and combine the mosquitoes of different periods, and finally formed the form of mosquito coil. A wisp of smoke burning at the top left of the image is transformed into the slogan "end the cycle", which not only vividly and imaginatively conveys the powerful mosquito control effect of the mosquito coils, but also expresses people's disgust for the mosquitoes that reproduce very fast and have greater destructive power.



Figure 4 Mosfly Mosquito Coil ad

3.3. Spatio-temporal replacement

The combination of "visualization" and "graphical" is one of the most effective ways of expression with spatio-temporal replacement, and it is also one of the more magical ways of expression in print advertising works. Spatio-temporal replacement in print advertising works utilizes a combination of "visualization" and "graphic" technology to reorganize elements that do not belong to the same space-time, thus creating a visual effect with multiple spatio-temporal characteristics, intricacy and wonder. Spatio-temporal replacement enables two-dimensional print advertisements to present three-dimensional space, four-dimensional space and other multi-dimensional spatial picture effects, making the impossible come true and turning the unexpected into the reasonable [8]. In addition, spatio-temporal replacement can also give the print works a new space for elaboration and display perspective, sweeping away the dull and uninteresting style characteristics of print advertisements and enhancing the novelty, magic and creativity of print advertisements. It is also in line with the psychological characteristics of modern audiences who are "seeking for novelty", "seeking for change" and "seeking for difference". For example, the print advertisement of Forstec air conditioner with forced cooling is a perfect interpretation of the spatio-temporal replacement (see Figure 5), which is mainly composed of two elements combining "visualization" and "graphics". One is the oil painting on the wall, and the other is the clothes on the hanger by the wall, which belong to different

spatial spheres. The designer uses the expression of spatial replacement to link the two originally unrelated together, so that the hand of the character in the painting extends outside the picture and reaches for the clothes on the hanger. In this way, it not only conveys the forced cooling effect of that air conditioner, but also gives a three-dimensional effect to the flat work, enriching the content of the picture, adding interest to the work and enhancing the audience's attention.



Figure 5 Print advertisement of Forstec air conditioner with forced cooling

3.4. Deformation and exaggeration

Deformation and exaggeration, as the name suggests, is a design technique that deforms and scales the objects presented in the image, thus exaggerating their form and color ^[9]. This integrated way of application can make the object present a visual effect that is difficult to achieve with conventional photography, bringing enhanced sensory stimulation to the audience. For example, in the print advertisement of Siemens iron (see Figure 6), the designer used 3ds Max software to exaggerate the "clothes" in the combination of "visualization" and "graphics". The original soft, flat and wrinkled clothing image becomes flat and three-dimensional. Coupled with the iron placed on the clothing, it visually and graphically shows the superior ironing performance of the product. Another example is the print advertisement of Samsung MP3 player (see Figure 7). With the help of graphic processing software, the designers deformed the images of singers representing different music styles to a high scale. The transformed "singers" are only about the size of headphones, and "they" are attached to the ears of people listening to music with headphones and look into the ear canal, as if they are also attracted by the music played in the headphones. Although no images of the player product are presented in this series of advertisements, the characteristics of the product are conveyed through the deformation of related items, which is exaggerated yet humorous. In addition to the above-mentioned deformation and exaggeration of objects in the images, designers can also use personification to exaggerate the design of objects. The personification can give life to non-living elements and bring out certain qualities of non-living image elements with excellent affinity ^[10]. For example, in the print advertisement of KOBELCO mini excavator (see Figure 8), the designer relies on software to empower the excavator's mechanical arm with the functional characteristics of a human hand. The mechanical arm is not only able to cut fruits, but also to play games and thread needles. Through such personified exaggeration techniques, the intelligent and refined performance of the excavator is fully expressed, and the persuasive power of the print advertisement is effectively enhanced.



Figure 6 Siemens iron ad



Figure 7 Samsung MPS player ad

4. Conclusion

The combination of "visualization" and "graphics" features image-making skills and emotional communication power that have brought about an all-round change in modern print advertising design, enriching the subject matter of print advertising creation and innovating print advertising design methods. In integrating digital influences into print advertising, designers should pay attention to the combination of technical aspects and humanity factors. Moreover, they should infuse their works with both brilliant appearance and rational thinking so that they can highlight the innovative concept of their works. In addition, because graphic design itself is an unconventional, non-fixed program of subjective activities, designers should not rely too much on the combination of "visualization" and "graphic". At the same time, they must not be immersed in the mechanized thinking of the combination of "visualization" and "graphics" for a long time and avoid being reduced to a tool for computer manipulation. Moreover, they must follow the "principle of purpose", "principle of formal beauty", "principle of resonance", "principle of unification" and so on, in order to achieve the most optimal effect of the print advertising design.

References

- [1] Li Chunfu, Yong Lei. Ambiguity of visual communication in advertising design [J]. Packaging Engineering, 2008, 29 (002): 154-155.
- [2] Li Yanzu. Advertising Culture and Art [J]. Literature and Art Studies, 1988 (5): 12.
- [3] Zhang Tiantian. Research on Creative Methods of Environmental Media Advertising Based on Emotional Experience [J]. Packaging Engineering, 2013, 034 (012): 29-33.
- [4] Zhao Qi. Talking about the application of graphic creativity in graphic advertisement design [J]. Science and Technology Innovation Report, 2010 (15): 1.

- [5] Li Daoliang. On the Application of Gesture Graphic Language in Advertising Design [J]. Decoration, 2006 (7): 1.
- [6] Wang Yan. The Application Research of Chinese Traditional Painting Elements in Modern Graphic Advertising Design [D]. Northwest Normal University, 2014.