On the Spatial Expression of Modern Graphics

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Abstract: The establishment of modern graphics spatial concept is based on the disobeying of traditional perspective space, and it is beyond the limits of space where human beings live. Through the description and analysis of the historic evolution of graphics space as well as all kinds of forms that modern graphics space inheres, this article points out that modern graphics space boasts the characteristics of disobeying, variegation and creativity. Meanwhile, through the comparison and analysis between the logic regularity of reverse thinking and the essence of modern graphic creation, this article indicates that the creativity of modern graphics is based on reverse thinking.

1. Introduction
Psychologist Langner put it like this: “Individual image in art is just a kind of common signs. Whether its form is simple or complex, it only constitutes the artwork.” This sentence points out that artwork is integral, every part of which has no meaning unless it makes up an integral structure according to a certain rule and through imagination. Thus, it will reveal artists’ sentiments and thoughts. Therefore, the composition of artwork is of vital importance. Moreover, both paintings and pictures contain the construction of space. In 2D graphic designs, spatial expression is the primary issue to be solved because, according to the essence of the visual form of graphics, all the elements can only exist and demonstrate their functions and beauty when dependent on space. In a word, the relationship among all the elements constituting a picture is a spatial one.

2. The Establishment of Modern graphics Space
The reason why we are accustomed to adding 3D spatial order on 2D forms is that the space we live in is a 3D world which forges our visual habits, spatial concepts and thinking methods. Graphic Arts centers its research on human visual sense. In order to adjust to human spatial concepts and visual habits, traditional painting artists lavishly adopted the visual effects simulating 3D space. Especially from the Renaissance to post Impressionist Period, scenography developed rapidly. Only those painted with scenography could be called paintings. Although the paintings provide an illusive sense of three-dimension and space, the audiences can feel verisimilitude and intimacy as if the paintings were three-dimensional. The School of Athens painted by Raffaello and The Last Supper painted by Da Vinci are magnum opuses of strict perspective. Nevertheless, the image and space cannot be truly revealed by this method. What audiences see is a phantom of real space. It leaves them indulged in illusive space and impedes the creation of new graphic form. In the late 19th century, promotion of the achievements in the Industrial Revolution and the rapid development of technology brought great changes on people's lifestyle, behaviour and ways of thinking. Thanks to the establishment of many important theories including Kant’s Antinomies and Einstein’s Theory of Relativity, the relativity of space was entrenched, which brought a revolution on visual effects. Meanwhile, the appearance of modern art inspired people to express their spatial concepts from different thinking angles and psychological directions. The spatial categories of design thinking were enriched through an organic
3. Expression Forms of Modern Graphics Space

All kinds of new spatial forms of modern graphics originate from modern artists’ and graphic designers’ creations, imagination and special sentiments. These new forms reflect that modern life is of complexity, diversity and creativity. Many prominent domestic and overseas artists have devoted themselves to the study of new spatial forms since the 19th century. A large number of works have been created since then.

Interchanges between Images and Backgrounds In 2D graphics, it is generally believed that backgrounds serve as a foil to images while illusive space set off real space. However, accompanied by the changes of modern spatial concept, backgrounds will become positive space under certain circumstances while the images will become backgrounds or negative space in return. This interchange forms an illusion in regard to the mixture of positive and negative space. One of magnum opuses adopting this method is Dali’s painting *A Serf Market with A Bust of Voltaire* in which black and white interdepends on each other in the same way that the reality and illusion does. It provides audiences with an interesting graphic effect.

There is another method called non-spaced interchanges between backgrounds and images. Backgrounds and images will repeatedly interchange between each other, thus producing a dynamic effect. Dutch printmaker Escher applied this method in many of his works. The visual space was enlarged and visual pleasure was strengthened. Meanwhile, audiences can appreciate two kinds of space in one picture.

Multi-perspective Space This method is to combine various dimensional objects into one picture and leave their vanishing points unfixed. In some pictures, the points are not on the same visual horizon. They just demonstrate all their sides. This method helps people get rid of limits of regular visual perspective and changes the perspective relation between different images and space in graphics. This variable illusive space generates a sense of dynamism and provokes a new aesthetic. Picasso’s painting Guernica is an excellent example. He changed his perspective angles frequently and drew several sides of a same object, revealing a kind of unique feelings and different space. (Picture 1)

Contradictory Space By inscribing on pictures, a kind of anti-science and unreasonable space is produced. Under such precondition, the content of pictures can reverse in any direction and inter-contain by combining the space in a multi-space, multi-gravity or agravic way. A line in one plane can connect with a point in another plane, thus forming complicated contradictory space. This method, utilizing the principle of false vision, creates a special kind of dimensional illusive space in 2D space. Escher used the delusion of perspective in *Waterfall* and created a flowing process of ditches and waterfalls. Contradictory space, a fruit of supernatural imagination, attractive and a bit frightening, brings to people’s eyes strong impacts and enriches the forms of space construction.

Time and Space Confusion It is time and space that enables objects to exist. In the real world, it is a law that the notion of time and space is invariable which never repeats and is beyond the boundaries of territories. In contrast, in the “imagined world” in art, the laws of time and space in the external world will be disrupted when artists combining images belonging to different space in one picture. The space then becomes four-dimensional and supernaturally imaginary. With the changes of artists’ observation places and space, the continuity of time has been demonstrated (It is because the movement and changes of objects always connect with time and space). Nevertheless, the graphics space is usually expressed by organically combining each stage of the main event with the space where it takes place. After this, invisible notion of time becomes visible and a dramatic and humorous effect is produced. (Picture 2)

Multidimensional Ideational Space The construction of multidimensional space is based on the three and four dimensional notion of time in a plane, expressing a subjective idea and feeling. It is realized through the combination of subjectivity, audiences and pictures. Through symbolism and implication, events and images belonging to different space constitute one picture, forming an internal spatial connection. In addition, when appreciating paintings, audiences will associate the painting with the knowledge or memories of objects they have perceived in the real world, and then share the same feelings with the painter by realizing his or her connotations. Under this circumstance, an extension of
the meaning and spatial depth of pictures appears. An effect of psychological space develops. Therefore, Multidimensional creation, combining phantom and reality as well as expressing painters’ inner worlds, also builds a special kind of psychological space.

4. Thinking Basis of Modern Graphic Spatial Expressions

By centering on the adoption of the uncertainty of people’s visual points, expressions of modern graphics space produce variable visual effects including the transformation and alternation of visual points and false perspective. However, as graphic art, the expressions also relate to specific modeling of thinking. It is a creative activity to build super-visual space of modern graphics, which depends on human mind, especially reverse thinking that particularly reflects the criticalness and uniqueness of creative thinking. Reverse thinking emphasizes that creation should be novel and unique, and thoughts and resolutions should be creative in order that audiences will get a different visual feeling. This thinking method follows people’s regular thinking model. However, in certain situations, that model is reversed in order to come up with new schemes and achieve innovation. According to the history of graphics space, traditional treatment of space mainly relies on Perspective which is to build a 3D world in a plane, underlining the real and decorative description of objects. By contrast, with the development of modern graphic art, the dealt of space has broken the limitations of traditional graphics space. Artists think from different perspectives and create many original structures of graphics space. Audiences may be confused about the presented views, but they can get new feelings from the connotations, backgrounds and symbolism from paintings, which is an expansion of graphics space owing to reverse thinking. However, it doesn’t mean reverse thinking violates logical thinking or the established orders of thinking. As a matter of fact, reverse thinking transforms logical expressions into novel suspensive ones which bring a strong impact on audiences and unique psychological space. At the same time, audiences will receive spiritual growth through imagination and the extension of thoughts.

![Picture 1 Multi-perspective Space](image1)

**Picture 1 Multi-perspective Space**

![Picture 2 Time and Space Confusion](image2)

**Picture 2 Time and Space Confusion**

Reverse thinking functions as a fountain of graphic creations as it is basis for modern super-visual space and provides motivations for spatial imagination of graphic designs. On one hand, thanks to reverse thinking, human beings have actively stimulated and utilized their imagination and explored the unknown visual field. On the other hand, the creation of human mind is clearly reflected by the non-objectiveness of modern graphic imagination. Therefore, when designing pictures, designers should adhere to the rules of reverse thinking, adjust their thinking directions and stimulate their
thoughts, through which process audiences will develop their visual potentials and personal thoughts while appreciating pictures.

5. References
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