Optical illusions: the path of enlightenment

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Abstract – The article presents a periodization of optical illusions done by the authors.

Keywords – optical illusions, periods of optical illusion development, trompe l'oeil, organic portraits, illusory enfilades and plafonds, skull optical illusion, the Pentrose Triangale, 3d illusions.

I. Relevance of research

The research focuses on the optical illusions and is a natural continuation of our research of the year 2015 [1]. This immediately raises logical question «Why would it be this subject again? Elena Chernychuk first got excited about optical illusions at school, but thanks to Victoria Bazylevych, who once happened to be her lecturer of the course "Principles of Composition," and who is now her student advisor, the fascination has become a serious issue, because the reasons for optical illusions are detected, but to this day there is no any scientific rationale for most of them. And what else appeals men more than the unknown? Little by little we went deep into this unknown and moved way back from the apogee of optical illusion development to their emergence. Artists and innovators – all of them tried to distort or change reality in one way or another at different times. What exactly led to creation of illusions? Was it just an escape from reality, desire to stand out or probably a search for ourselves and our self? Optical illusions develop in every country in the world without exception. We see them in monumental 3d drawings in the sand somewhere on the beach of sunny Bali, or in a shadow installation at an art exhibition in Britain, or in the paintings of Ukrainian artist Oleg Shuplyak. In fact, all artists who have tried to create an optical illusion at least once continue to develop the potential of their ancient colleagues – artists-inventors. Following various artists in social networks, we continued to examine this fascinating subject, and in order to shed light on the present, one need to plunge into the past. Throughout the study, we daily discovered for ourselves more and more varieties of optical illusions, their secrets and amazing functionality. Everything genial is simple, and, in our case, is yet not investigated and therefore – remains relevant.

II. The periods of optical illusion development

The recent articles on the Internet [2], [3], [4], [5], [6], [7] are devoted to specific types of illusions, exhibitions, and the works of artists of this direction. The works of world-famous masters of optical illusions in graphics, art and architecture are presented in the illustrated encyclopedia 2007 "World Art: Optical Illusions in Painting and Graphics" [8]. The studies on optical illusions, that we know, do not contain information on the periods of their development. These studies can also hardly be called generalizing and systematized.

The purpose of our scientific article is to shed light precisely on the past of illusions.

In the previous publication [1] we talked about the fact that optical illusions began to develop in the 16th century. However, after a detailed investigation, we found out that illusions emerged long before Hans Holbein and his "The ambassadors". (Figs. 1 and 2).

This summer, while traveling through Italy, in Pompeii, Olena discovered an ancient example of optical illusions. The plate in the House of the Faun (79 AD) is designed in the best styles of Vasarelli, and this is the 79th (!) year of our era (Fig.1)The illusion perfectly complements the extraordinary interior of the house, which has such a bizarre name (Fig. 3).

We continued our research, taking into account the updated material. We have also named the identified examples of optical illusions and developed their periodization.

#RENAISSANCE (XIV-XVI). We found the following images with optical illusions of the Renaissance period as: images with trompe l'oeil, organic portraits and impossible figures (in particular, in the painting 'The Magpie on the Gallows by Peter Bruegel' (1568)).

Illusory images with trompe l'oeil (French for "deceive the eye") are three-dimensional images in a two-dimensional plane of an object. Ancient artists already knew that impressed audience is the best appreciation and therefore decided to add a little "zest" in their works (Fig.4). In the Renaissance period such an art technique as trompe l'oeil was used in portraits and sculpture.
Organic portraits. At first sight these pictures look like a still-life but once you put them upside down you happen to see faces. It was an incredibly painstaking work, which required the artist’s energy and endurance, because even the smallest detail identifies the face of the model. People who carried such tasks had active imagination and were experts in botany, since it was something bordering on fantasy for the people of the Renaissance to create a portrait out of chaos and a bunch of organic products. One of the brightest representatives of this extraordinary style is Giuseppe Arcimboldo (Fig. 5).

#BAROQUE (late XVI – mid XVIII centuries). During this period illusory images with trompe l’oeil were transformed and significantly developed. Also, in parallel, illusory enfilades and plafonds began to emerge and become popular.

The illusory images with trompe l’oeil became an important part of the Baroque artistic language when everyone strove to efficacity. Then the artists believed that everything genial is simple, and deceived the audience through three-dimensional images, as if saying: “Here, you can just observe, but you will never use one of these things.”

The representative of the baroque trompe l’oeil is Samuel Dirksz van Hoogstraten (Fig. 6).

The illusory enfilades (French for «string on a thread») and plafonds. The artists created a quite real “Heaven above their heads” using spatial elements and cross-cutting perspective. Such a “divine atmosphere” greatly strengthened the faith of each parishioner and contributed to the sense of the high power presence (Fig. 7).

#CLASSICISM (XVII – early XIX). This period has made its adjustments to illusory images with trompe l’oeil. They were inspired by the philosophy of rationalism and the spirit of ancient times. Artists seemed to contradict themselves: they wanted to step over the bounds, but without violating ancient laws.

#REALISM of the second half of XIX also experienced the influence of optical illusions. One of the representatives is Pere Borrell del Caso (Fig. 8). His work "Escaping criticism" is a vivid example of a realistic optical illusion with trompe l’oeil.

#MODERNISM (late XIX – the first half of XX). Optical illusions, that actively developed in this period, were: illusory images with trompe l’oeil (in painting); skull optical illusions began to emerge and become popular. Such an illusion was used in illustration, painting and photography. The Penrose Triangle, as well as skull optical illusions, captures the public as much as possible, and that’s why the Triangle appears on posters and stamps.

Illusory images with trompe l’oeil are plastic and light. They are enriched by stylized flowers and wavy lines, taken from nature. A deeply sensual representative is Frida Kahlo (Fig. 9).
Skull optical illusions. Hungarian artist Istvan Oros made these skull illustrations in medieval style for the new edition of «The Ship of Fools», the satirical book by Sebastian Brant of the late 15th century. Each of them is an anamorphic illusion. At first glance there seems to be just a skull in the picture, but in fact it fully illustrates a fragment of the book. (Fig. 10).

Impossible figures, in particular the Penrose Triangle. The figure was found in 1934 by the Swedish artist Oscar Reuterswards, and later was generalized and popularized by English mathematician Roger Penrose. Due to its simple presentation of an impossible figure, the Penrose Triangle became increasingly popular. Impossible figures in the painting of the XVI century seemed to be in the background along with the story of a picture.

Roger Penrose gave the impossible figure the central role on time and it was immediately noticed by the audience. At first glance, the figure looks like a projection of an ordinary three-dimensional object, but if you take a closer look, the contradictory combinations of the elements of the figure become evident. An illusion of the impossibility of what we see is created. The viewer is confused and subconsciously tries to understand the figure and the method of its construction. Since this is what human nature is about: we are always looking for answers to questions (Fig. 11).

Fig. 10. Istvan Oros, illustration for the book «The Ship of Fools» by Sebastian Brant (195?) [17]

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#OTHER STYLES of 1980-s – 2000-s.

Nowadays optical illusions have reached the apogee of their development. Artists have become even more creative. They create spatial and shadow installations out of shapeless bunches of stuff, angular installations with philosophical content, street art in the streets of our cities, gallery anamorphoses and anamorphoses on paper, cylindrical mirrors and art installations in the air, surrealism, the reverse of three-dimensional images and body art. All that was created and successfully developed by our contemporaries. Here we present the most vivid and impressive examples of optical illusions in our days.

"Classic" images with 3D illusions. It is creation of drawings on flat planes, which at a certain angle acquire shapes volume. In order to create the perfect image, the artist has a scrupulous eye for detail. Therefore, the work has much more sense than it may seem at first glance. Everyone can see something special for himself. There is no right perspective in art (Fig. 12).

Fig. 12. Justen Ladda (80-s) [19]

Bifacial optical illusions (images that hide ambiguity in the picture). The representatives are Oleg Shupliak (Ukraine), Rob Gonsalves (Canada). Oleg Shupliak is a bright representative of surrealism in Ukraine. He creates masterpieces, embodying the ambiguous content of the works, where the silhouette of the giant Taras Shevchenko is usually depicted.

The Paintings by Gonsalves are always a magical combination of worlds, imperceptible metamorphosis, the flowing of objects from one figure to another. The artist sort of implies, that everything is interconnected in the world (Figs. 13 and 14).

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Fig. 13. «I was thirteen…» by Oleg Shupliak [20]

Fig. 14. Sailing Island. Surrealism Rob Gonsalves [7]
Optical illusions are an attractive kind of art and have the potential for further development and improvement. This is an important component of art, and not only of its present, but also of the past. Student Elena Chernychuk learned about the illusions from the Internet, but why wasn’t such an interesting subject discussed in school or during the course on art history in university? We believe that it will help develop lateral and very creative thinking of children and adults, and not only for those of them who are fond of art. After all, you need to be good at mathematics to make calculations for an illusory enfilade or good at botany to create a bizarre portrait. Art as well as religion, is blessing for everyone. Sometimes, to solve a problem, one just have to look for another angle.

Conclusion

Following the research, we found that optical illusions existed already in ancient Pompeii. And from century to century they confidently won the attention of audience and artists. Illusions have always existed beyond competition, it was a kind of art that did not need any promotion, because it amazes you, and, therefore, got recorded in your mind.

On the path to enlightenment, illusions were subjected to transformations, additions and influence of the epochs, but continued to exist and develop to the present day.

Creation of optical illusions is an extremely painstaking work that requires maximum creativity and engagement. Not everyone is able to create “strange” art. This vocation has been looking and is still looking for its artists at different times.

While telling the history of the optical illusion emergence and development, we smoothly moved from the first century to our days. Illusions surround us everywhere and at all times, but we do not have enough knowledge to notice and appreciate them. We found the roots of that mighty tree of “Art.” And when you learn the past, you get answers to the current questions and knowledge for the future. That is what modern artists do. Whatever country the artist lives in, he is always inspired by his predecessors, history and the time space, that separates us from eternal geniuses.

Thus, we see for ourselves once again, that all new is very old.

Whatever you are and whatever you do, remember, we are children of light, we are children of art.

References


