

## Study on Expression of Digital Communication Photography

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### Abstract

*The emergence of photography brings great change to the world. The photography breaks the monopoly of character communication. With its development, human life enters an "picture-reading age". Photography gradually becomes a highly opening system and penetrates into other disciplines. It is an art form based on science and technology. With the upcoming of digital age, digital media and interaction art have great impact on status of traditional photography in communication and on its presentation. Especially over these years, internet develops rapidly, making the image art disseminate more quickly, and affording digital photography an expansion space without bounds. On the condition of today's internet technology, with the integration between traditional photography and features of digital age such as instantaneous interaction, multimedia interaction, digital media and colour's expressive force in cyberspace, it is born a new sort of digital image presentation relied on Internet. The expressive force and dissemination of photographic art is entering a new space. In the new digital art age, Traditional photography can find a new start point and get a better balance between traditional usage of light, aesthetics, and composition, and latest digital print media, post-photographic design, and interactive multi-media.*

**Keywords:** cyberspace information visualizes digital photography interactive digital media art cyberspace colour expression.

### 1. Introduction

Great changes have taken place around the world due to the invention of photography which has shifted the monopoly position of cultural and literal communication in the whole human cultural life. Especially in the past 20 years, the development of technology and society has made human life enter into a newly "era of information visualize". Gradually becoming a highly open system, photography continues to have connections with other disciplines and deepens into various spheres of society. Based on scientific technology, photographic art is regarded as a kind of artistic form. With the advent of digital age and continuous development and application of digital technology and digital media, a digital medium are constantly influences and shakes the advancement and display form of traditional photography. Under the current circumstances of rapid development and popularization of internet, the digital art evolves and matures due to the appearance of interactive digital media, which also provides an infinitely broad space for development for digitalized image. With the combination of characteristics of resource sharing in cyber times, multiple digitalized media, interactive technology, cyberspace color expression and the connotation of traditional photography, the digitalized photographic works can be endowed with newly display forms.

As a matter of fact, the appearance of digital art, interactive media and digitalized imaging technology do bring an untold shock to the photographic art. Since the digitalized photography takes the advantages of digital convenience and rapid communication, it becomes quickly popularized in the photography industry with diversified contents and display forms of photographic works. In the new "era of interactive", the imaging art also should have this kind of display form of aesthetic experience.

### 2. Discussion

At the very beginning, human beings use images to communicate with each other. Before the appearance of language and character, images act as the communication tool. With the development of science and technology today, information can be sent with various forms.

However, image remains an important means of communication, becoming a universal picture language. Information visualization is considered as the characteristic of this era.

## 2.1 Development of Photographic Art and Reform of Digital Era

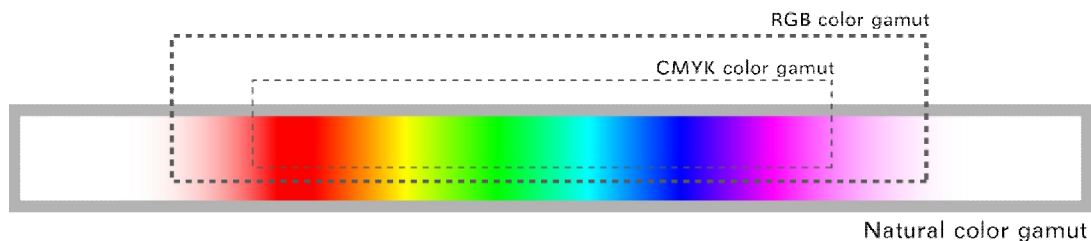
The emergence of photography brings a huge hit towards painting in the realm of art. The impact on painting by photography can be not only reflected in the shock of reconstructing the tradition; but also demonstrates a variety of possibilities for viewing as one of the visual patterns.

The birth of photography totally changes the sound tradition, making the western concept of art free from the tradition of reproduction of realism. Susan Sontag has ever evaluated the impact of photography to the painting in "On Photography", "Photography engages in usurping the tasks of artists and takes missions of mimicking the real images accurately. Thus, 'the artists should show deep gratitude', just as many photographers express before and after, such usurping is considered as liberation in fact."<sup>1</sup>

Should the photographic works depict the realistic world or express our inner aspiration to capture our flashes of soul? With the constant development of photographic technology, people are not satisfied with only capturing the shadow. They began to pay attention to the essence of photography in order to express the most direct thoughts of the photographers.

Driven by the creation of the most direct thoughts, artists began to attempt to explore different methods to create images. Digitalized images provide a broad space for those artists. Easy access to change the reality would bring a new crop of genius digitalized artists who make use of digital photography to express their unique opinions of the world, including meanings, symbols and mysteries. Having surpassed the traditional graphic functions such as record and discovery, perspective of planes, and perfect composition, digital imaging technology can show the creation and imagination of artists with multi-spatial images and screens of super dimension boundaries.

In the digital space, the photographic creation can be endowed with a much broader expressiveness of graphic color. The ranges of expressiveness of graphic color would be enlarged in RGB color patten for digital images. That's to say, the digitalized photographic works have higher abilities and spaces of expressiveness of graphic color.



**Figure 1: Comparison of ranges of expressiveness of graphic color**

## 2.2 The Formation and Features of the Digital Interactive Art

When we communicate with the outside world, various feelings are usually utilized to search for the external information, such as visual from eyes, hearing from ears, smell from noses, taste from tongues and touching from the four limbs of the body. Besides, we also have our brains for thinking, which helps us collect the external information and further re-explain them. People obtain different information from these feelings. And the information can influence each other.

In order to increase the effects of communication, people often use various methods simultaneously to express their thoughts. For example, when talking, people often make use of their body and eyes to coordinate with their languages.

The immersive "sound-surround ambiance" is regarded as one of the objectives to achieve by the multi-media to help for communication. On one hand, we exchange information with each other; on the other hand, we experience the emotions from both sides. Without qualitative communicative emotions, just as an old saying depicts that when the conversation gets disagreeable, to say one more word is a waste of breath, both sides will finish their conversation with less dialogues.

<sup>1</sup> Susan Sontag " On Photography"

Therefore, if we want to utilize multi-media for effective communication, the sound-surround ambiance of both sides should be ensured, and favorable communicative emotions can be aroused. In this very short and timely moment, the images displayed on the screen of multimedia computer should be easy to understand and even pleasant to view. Then the communicative emotions between people and computers can be intrigued. So the principles of communication modes of interactive multi-media are described as follows:

Interactive communication

Sense of experience for timely communication

Easy access to the contents and information

Brilliant acoustic and visual effects (expanding to effects of touching and tasting)

Inspiring the communicative emotions and desire of information receivers

As for the usage of the term “interaction”, it is very complicated including the interaction between man and man, man and machine, and machine and machine. And in the realm of art, the interaction among peoples from creators, communicators and their works can be also called “interaction” which should be carried out under the permission, encouragement and support of the works of the authors closely connected with the characteristics of the digital media.

Generally speaking, “interaction” refers to the interactive functions with feedback between things. One of the general methods of defining “interaction” is determined by the degrees of controlling the contents by the users.

The second definition of “interaction” is connected with the feedback, which can also be considered as a bilateral exchange to replace the traditional one-way communication. The above two kinds of “interaction” can differentiate the network media and traditional media. But the relationship between consumers and producers should be redefined, not only relying on the capability of technology; but also the redefinition by the media from concepts and organizations. Viewers are involved in certain artistic work of interactive art. Some equipment can be implemented to let the browsers take part in. Actually, the network art and electronic art can provide many interactive choices in various aspects. The interactive art is superior that it comes from sensing art and electronic art because participants are involved in the specific artistic form. The participants have the rights to choose. Some participants are invited to take part in the interactive art and some need to pay. The electronic games are regarded as the most universal and representative in the interactive art.

Generally speaking, the interactive artistic activities are based on interpersonal activities or internet interactive activities. The artists send the invitation to the guests in order to finish a specific artistic activities or contents. Nowadays, such kind of interactive artistic activities can be divided into the following several types:

Firstly, the artists send invitation to call on the guests to finish a certain task of artistic contents;

Secondly, some services will be provided for the guests;

Thirdly, the communication will be carried out between artists and guests.

As a matter of fact, interactive artistic activity not only can be supported by the computer or network, but also arranged by telephone, fax and so on. But we need to pay attention to two principles: firstly, under the circumstances of intervention of computer or connection with internet, users have been difficult to determine whether you interact remotely with human beings or programs; secondly, network games usually belong to interactive artistic activities with dramatic attraction.

### **2.3 Analysis on the Medium of Expression of Photographic Works of Digital Imaging**

The traditional medium of expression of photographic works makes use of printing technology through papers for communication such as album of painting, magazine, picture, newspaper etc, and their advantage is embodying their values of artistic works by themselves. However, the communicative areas and circulation become inferior to the electronic media at the same time. The photographic works in digital era have more choices and tolerance on the communication media. For instance, some digital media like internet, video screen and cell phone can serve as the communicative medium of digitalized photographic works. Among the digital media, the communication applied by network media possesses the most advantageous characteristics with rapid circulation and strong timeliness, which becomes a best choice for press photography. The digital imaging communication in network media is transmitted not only at the velocity of light, but also in an open, virtual, equal and interactive form. In the past, media refers to a unilateral oppressive indoctrination of information.

But the electronic network not only breaks the spatial-temporal barriers of information transmission; but also empowers the equal voices for human beings. Everyone is both the owner and creator of information. The copies of images appear perfect as the original works, and even surpass the original by some electronic technology, widely applying electronic copying technology, electronic simulation technology, collage imaging technology and spatial transfiguration technology together to form a series of unique aesthetic language.

#### **2.4 Analysis on Type of Audience Interaction in Interactive Works**

The visitors browsing the works in the interaction might be divided into several types and orientations as follows: The first one is the interaction with authors. Such type is mainly characterized by “Blog” in the internet and uprising “Podcast”. Blog refers to a form of website where authors can release their thoughts, opinions, experiences and other contents. Visitors can share the contents with the authors; response correlatively to some interesting topics and even join in the thoughts and experiences of the authors. Following the blog, Podcast in Chinese name “Bo Ke” has become a new form of publishing weblog. It possesses a characteristic of combining acoustic and video as the publishing contents to interact with visitors.

The second one is the interaction with works. Browsers directly interact with works. Currently, most of interactive works appear on the internet mainly taking the form of websites.

The third one is the interaction with other visitors. The interactive activities among visitors can be divided into synchronous interaction and asynchronous interaction. And the synchronous interaction is often realized in the environment of multiple users, such as internet chatroom and BBS.

According to the different degrees of viewing the interactive works, the visitors can be mainly divided into three types.

Firstly, the audiences only stay in the shallow interaction with the works, making use of the mouse or keyboard (also some external equipment such as earphone, microphone and camera) to attempt to influence works with various possibilities. If having time or becoming interested, visitors can appreciate polymorphic works all-around; or else give it up in the midway.

Secondly, the viewers are inclined to participate in the works. Unlike the formal visitors in the shallow interaction, these viewers tend to explore the creative intention, ideological and artistic values.

Thirdly, the cooperators take part in cultivating the climax forms of works. Authors take them as their cooperators to perfect their interactive works, which is what some authors, look forward to. Three types of cooperators can be described as parallel form, serial form and combination of parallel and serial form.

As for the visitors, they tend to change the status of only receiving information and transform contacting the artistic works into a funny exploration process. Because they grasp the control power to transform the polymorphic artistic works, visitors can choose the interactive form based on their necessity, acknowledge authors' thoughts and opinions and causality objectively involved in the works from the obtained feedback.

Under the conditions of views participating in the works and acquiring feedback, interactive art deserves truly. From the perspective of the works providing feedback, the results of audiences in the interaction can be divided into three types:

Firstly, passive temporary pattern. Authors have huge control power towards the finished works. When interacting with the viewers, the works only change passively and temporarily. The results cannot be preserved at the end of the interaction process. The works maintain their original status.

Secondly, passive perpetual pattern. Authors still have huge control power towards the works, but permit viewers to change the original appearances. Thus, in the ongoing process, the works may be changed passively and perpetually due to the participation of the viewers.

Thirdly, active temporary pattern. The works are orientated as the future progressive tense by the authors. Till the end of the creation, the works are open to be transformed by themselves. Although the authors have the right of ultimate amendment, the works bring about independent reaction towards the viewers.

With continuous expansion and perfection of current mobile technologies, mobile media has great market and exploitation prospects. Through mobile media, the digital photography can be realized to instant shooting

→immediate uploading→ sharing and editing→ information feedback→ immediate downloading.

The final establishment of interactive model of digital photographic works can be fulfilled by multiple concepts such as network, interactive activity and interactive artistic works. The overall interactive model can be divided into vertical and horizontal directions of interaction system. Interaction between users and works; interaction between authors and viewers; interaction between authors and authors; and interaction between users and network are included in the interactive model. The establishment of interactive model is divided into two parts: firstly, interactive activity in the cyberspace; secondly, interactive artistic works of interactive activity in cyberspace. The first part of interactive activity refers to a horizontal model, taking network as its medium, including network resources in common, quest for cooperators, joint participant in the creation of the artistic works. In the horizontal layer, all the participants (creators, browsers, cooperators etc.) stay in the process of interaction and transfer their roles in the interactive activity. The second part refers to the interactive artistic works that participants timely interact in vertical model of interactive activity.

### **3. Conclusion**

“The era of information” is a time of information explosion. The most difficult problem lies in information flooding and digestion without time. Because a large amount of information often rushes by surprise, most of us do not know how to resolve and information panic comes into being. As for this problem, human beings continuously improve the communication technologies and develop multimedia system to help us process information rapidly. The improvement of human-machine interface and simplification of use methods provide lots of measures to process information. And ingenious combination of various media materials, such as character, image and audio which complement each other forms a novel and effective information dissemination idea of “multi-media”.

Now we can say that the digital art will become the mainstream of our society in the future. Such changes are global. Meanwhile, the digitalized environment of life inevitably requires the suitable artistic morphology, artistic concept and artistic appreciators. The photography must have a certain change in the digital era. With its own characteristics and values, digital image refers to the unique ideology and display patterns different from traditional form and concept of photography. The future digital art should possess three features: that is, networking, interaction and sense of experience. Networking can bring about more affluent and colorful experience. And interaction can arouse the human’s participation. The relationship between man and computer changes from passive pattern to active one, fulfilling each person’s individual requirement. The research is sponsored by the scientific research project (the number of the project: 2011Q33) of Shanghai University of Engineering Science.

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