



From "Deduction" to "Consciousness"--The change of artistic behavior of interactive image installation works in the era of digital art

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Abstract .In contemporary art works, interactive image installation art is undoubtedly one of the most popular types of works among the audience; Starting from early artists represented by Bai Nanzhun, he created image installation art works to express the artist's thoughts and emotions through his works; With the help of modern physics, electronic information, simulation technology, AI technology and other technologies, interactive video installation works of art in the era of digital art began to gradually transform their past artistic behavior; The interpretation of works from the perspective of onlookers gradually shifts towards the integration of human-machine interaction, and evolves towards "conscious" interactive image installation art works. Interactive image installation art works begin to become a complete "individual life" with "consciousness".

Keywords: Interactive image installation art; Visual Angle; Field; Integration; consciousness

1 Introduction

From photography, movies, television to computers, after experiencing different media evolution, images have evolved from "chemistry" to "digital". The image has also evolved from the passive "reference and contrast points" of Engel, Courbet, and Miller to a new poetic meaning, which is the overall reorganization of art, forming a more widely disseminated and deeply involved artistic structure. Gradually, we entered the space of video. With the vigorous development of image art and interactive image installation art, "digital art", "multimedia", "immersive art", "interactive art" and "everything connected with power" appeared. With the assistance of modern physics, electronics, information technology, and other technologies, image art has gradually transformed from self interpretation of previous works to interactive image installation art "individuals" with "life" and "consciousness". Interactive image installation art emphasizes interaction and emotional expression with the audience, making interactive image installation art works more spiritual and cultural.

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2 Interpretation of works from an observer's perspective

Dr. Roy Ascott, a professor at Plymouth University and a scholar of new media art, said: "The most distinctive characteristic of new media art is connectivity and interactivity. To understand the creation of new media art, there are five stages: connectivity, integration, interaction, transformation, and emergence."^[1]When we watch a work, we must establish a connection with it and fully immerse ourselves in it, feeling the thoughts and emotions expressed in the work. When we look at a traditional painting, sculpture, or other work, the audience views it as a bystander; A work is just a "spectator perspective interpretation" - presenting and interpreting the originally designed and created content, and the same work provides different experiences and feelings to different audiences. During the display process of this work, there was no interactive behavior between the work and the audience (see Figure 1 behavior mode), which is also a common feature of early installation art.

In 1974, the father of video art, Bai Nanzhun, created the video installation art work "TV Buddha" (Figure 2). A Buddha head placed on stage, a TV monitor, and a standing camera make up this work. The Buddha's head on stage stands in front of the TV, and the camera behind the TV keeps shooting the Buddha's head. The TV screen plays close-up images of the Buddha's facial expression captured by the camera. Three seemingly unrelated objects form a profound artistic conception, as if the Buddha is meditating on his own video footage or engaging in dialogue. In this work with a strong sense of Eastern Zen and speculative symbolism, we feel the gaze between "people" and external objects, the confrontation and dialogue between ancient and modern, Eastern and Western cultures. Viewers view and experience works of visual installation art from an observer's perspective, and appreciate the ideas and significance of the works; The viewer did not enter the field of the work, did not integrate into it, participated in the creation of the work, and did not make any instructions, actions, behaviors, or changes to the work. The work is displayed in its own way, and the relationship between the work and the audience is one of seeing and being seen, feeling and being felt.

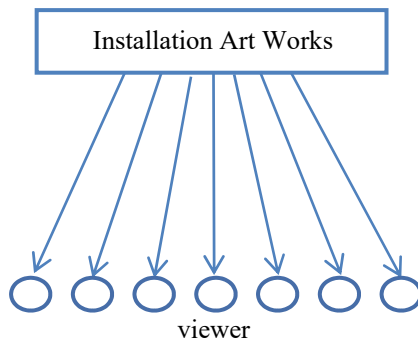


Fig. 1. The behavioral patterns between the audience and the work



Fig. 2. Bai Nanzhun's installation art work "TV Buddha" / Image source: Hi Art Network

3 Established outputs from a subjective perspective

With the development of modern science and technology, electronic information, simulation technology, AI technology and other technologies are widely used in the creation of digital art and interactive image installation works of art. The image installation works of art in the digital art era begin to gradually change their artistic behavior: focus on interaction with the audience. Under the interactive interpretation of the audience, the interactive image installation work can complete the subsequent "creation", achieve the creator's intention, and the work can be more complete. The audience passively participates in the creation of the work. The work receives various information such as the audience's body movements and speech, and then transmits these behavioral and action information through video information, presenting different visual effects in the work; There is a relationship between receiving and being received between interactive installation art works and the audience. This process involves outputting image symbols and information in a set language program (such as Processing language) and artistic form, supported by digital media technology; This output is a predetermined output of the work from its own subjective perspective, aimed at the audience (capturing audience information - outputting image information). In this process, the work takes the audience as the input of content information, and then outputs it in a set audio-visual content and artistic form, which is the predetermined output from the subjective perspective of the work (see Figure 3 for interactive behavior mode).

The interactive imaging installation work "I" captures the image of the camera and outputs the image of the monitor, outputting the "present tense" of the "I" (audience) at the current time point into three different styles of images, presenting the "past", "present", and "future" of the "I", thus combining a complete "I" across time and space. With the support of spatial field, the audience interacts with the work, conducting signal input and image output. The work "I" connects the three spatiotemporal elements of "past", "present", and "future", and aggregates them into the time and space of the viewer's "present tense", forming a complete expression of the work's three time points (Figure 4). Throughout the entire process of the viewer's participation in the work, the viewer does not change the inherent design and program of the work. The viewer is

only captured and input as an image signal, and the entire process is the output of the predetermined visual content and form of the work from the subjective perspective of the work.

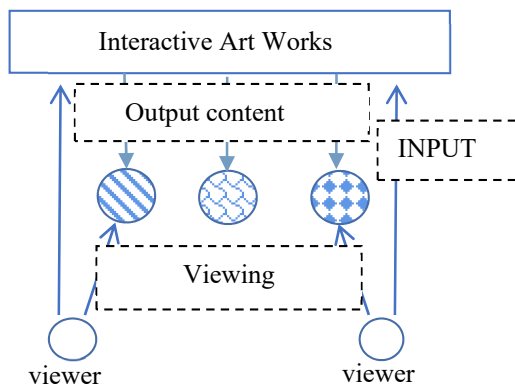


Fig. 3. Interactive Flowchart between Audience and Works

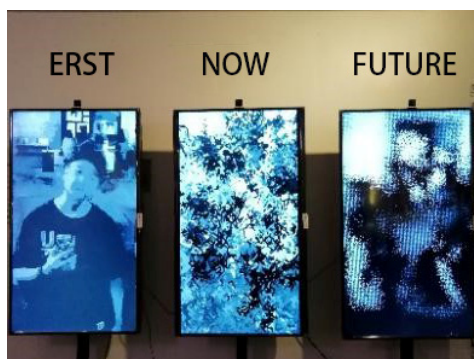


Fig. 4. The 2018 Graduation Exhibition of Guangzhou Academy of Fine Arts titled 'T'

4 Interactive and Integrated Dreams

In Freud's view, dreams are a psychological characteristic that expresses a person's inner desires. Artists such as Dali also express certain emotions in their hearts through their works of "creating dreams". Compared to art works such as easel painting that can only express dreams or artistic conception through visual content, an important form of installation art is the ability to simulate or attempt to create a "dream" through spatial scenes; This type of installation art can be called dream making interactive image installation art, and its composition form is also similar to the composition of dreams: rich visual information, various combinations of scenes, spaces, and materials, and various symbolic elements.

Dreammaking interactive image installation art works borrow digital technology to create a field through visual effect elements such as space, objects, shapes, lights, colors, etc. This "fantasy" field is created through digital technology, and various symbolic material objects will be intentionally designed and placed. The two main functions of borrowing materials for interactive image art installations are: firstly, the physical and chemical properties of the material function and the basic characteristics of the material; Secondly, in terms of material aesthetics and aesthetic perception;^[2]To achieve the best work effect.

One significant difference between interactive image installation art works and traditional art is the emphasis on audience participation. How to bridge the gap between the work and the audience, and stimulate their enthusiasm; Even allowing the audience to "integrate" into the work and complete its creation, making the audience a part of the installation art work, is one of the most thought-provoking design points in this type of installation art. Olivier Eliasson produced a work called 'The Weather Project' at the Tate Gallery (Figure 5). The entire work space is a large art field, composed of hundreds of yellow sodium vapor lamps, the sun, and the ceiling mirror combined with fog, creating a very realistic "beach sunset" scene. At the same time, the artist set the air humidity for the work, creating a thick fog that allows the audience to feel the dampness of the sea when exposed to the work. Olavir Eliasson used sugar sweeteners to create an aroma that made people's sensory experience more relaxed, authentic, and immersive. Visitors stand, sit, or lie freely on the ground of the exhibition site, gazing at the misty yellow "sun" and searching for their reflection in the mirror above their heads, all of which are like being in a dream. In this type of interactive and integrated installation art work, the work utilizes digital technology to achieve comprehensive interactive integration with the viewer. The person and the art work become a whole, and the viewer becomes a part of the work; Even reaching a level of 'viewing things from the perspective of things, so I don't know which one is me and which one is things'.^[3]The audience experiences the thoughts and emotions of the work in their interaction with it; Understand its interpretation of themes such as society, ecology, life, humanities, dreams, and illusions.



Fig. 5. Olivier Eliasson's installation art work "Weather Project"/Image source: Sohu. Com

5 Formation of "Consciousness"

With the support of material technology, machine equipment, and artificial intelligence, as an interactive image installation art work of digital media art, it is no longer an appreciated decoration; The changes in its artistic behavior have occurred, and the work independently collects information during the interaction process and outputs behaviors, actions, images, and sounds. The work interacts with the audience independently. In the process of conscious interaction between the work and the audience, interactive image installation art works can effectively receive the audience's body movements and language, and input this information into their own artificial intelligence "brain". With the help of artificial intelligence, the work consciously "commands" the interaction between themselves and the audience. This interaction caused by "consciousness" is like Locke said: "Consciousness is the perception that occurs in a person's heart.^[4]The "consciousness" attribute of interactive installation art works, just like others, can also express the melody, sweetness, pain, bitterness, and love similar to the human heart. In the interaction process, the work, as a conscious "living" individual, is parallel to the audience's individual life.

Many of Raphael Lozano Hummer's works explore topics such as human perception, visual illusions, and social surveillance. In London's Trafalgar Square, he created a work full of modern technological applications called "Scanning" (Figure 6). In this outdoor lighting square equipped with tracker cameras and projectors, the cameras and projectors will be activated as pedestrians come and go. At the same time as the camera captures pedestrian shadows, the pre recorded live images will be synchronously projected into the pedestrian shadows captured by the instrument. Through this work, people from different dimensions and time and space meet at the same time and place, and pedestrians in Trafalgar Square see strangers in their shadows. In the interaction process of this work, the work actively captures and projects pedestrians in a "conscious" manner, and the audience consciously participates in image interaction activities. The work (machine equipment) and pedestrians are performers of a two-way movement (Figure 7).



Fig. 6. Raphael Lozano Hummer's Interactive Image Installation Art "Scanning"/Image source: zhihu.com

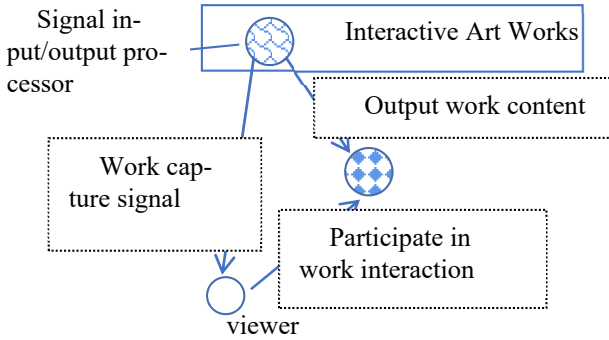


Fig. 7. Behavioral Flowchart between Audience and Conscious Works

6 Development Trends

With the replacement, development and progress of electromagnetic, photosensitive, communication, and Internet technologies, interactive image art works keep up with the development of science and technology of the times. The interactive imaging device works actively apply computer technology, information acquisition and editing technology, electronic technology, artificial intelligence, holographic imaging, etc. to the works. Although these types of image interactive device works have certain technical difficulties, they always bring surprises and are favored and pursued by everyone. Interactive media designed using the Processing visual editing language has the characteristics of interactivity, continuity, systematicity, flexibility, randomness, etc. It is currently the fastest developing, most diverse, and most eye-catching type of installation art, which is also the main direction of future digital media art development.

In the movie "Avatar", humans can put on Avatar's body and go to the distant planet Pandora to plunder resources. In today's era of big data, many people also control themselves, completing various avatar tasks in online virtual spaces, managing their own image on different online platforms, establishing their own networks, and creating their own kingdoms. Nowadays, with the continuous progress and maturity of VR, AR and other technologies, interactive image installation art can better meet the situational and emotional experiences of different groups of people, and strengthen the audience's participation experience. O. Holland and A. Seth divided the criteria for determining consciousness into two levels - weak artificial consciousness and strong artificial consciousness. Weak artificial consciousness only focuses on external behavior or achieving corresponding input and output functions, and does not require machines to have true consciousness. Only by achieving consciousness in the same sense as humans, that is, the consciousness ability in the sense of subject consciousness, can it be called strong

artificial consciousness.^[5] With the development of technology and the application of AI technology, more and more interactive image art works are developing towards strong artificial consciousness.

Through a large number of cases in the article, we can find that in the current diversified development of the art environment, interactive digital image installation art has become a trend. Through the research and creation of new media and art forms, artists express social issues and personal thinking, providing viewers with dual visual and sensory stimuli, enabling them to spontaneously engage in ideological and conceptual interactions when facing their works. Art works stimulate viewers' thinking. In the current social and cultural context, artists are constantly exploring and innovating, integrating modern humanistic ideas and technology into their works of art, intervening in traditional creations through different media, breaking through conventional spatial concepts and narrative methods. More and more interactive art works are being used for commercial activities or public facilities. Contemporary artists are not only highlighting the complex connections between viewers, works, and artists, but also constantly developing the social expression of art, exploring interactive ways to change the aesthetic style of art on shelves, establishing a closer interactive relationship with the public, and redefining the relationship between people, art, and society.

7 Conclusion

Through observation and research on the changes in artistic behavior of installation art works, the author found that with the application of digital media technology, installation art works have evolved from individual interpretation to interactive image installation art works; The artistic behavior of installation art works gradually transforms from the perspective of the audience to the integration of human-machine interaction, and evolves towards "conscious" interactive installation art works. With the assistance of modern physical technology, electronic information, simulation technology, and other scientific technologies, interactive image installation art has transformed from the expression of individual thoughts and emotions of artists in the past to the self-expression of works in a "conscious" state. Interactive image installation art works have begun to become a complete "individual" with "consciousness". With the application of AI technology, artists are giving more and more "self-awareness" to interactive image installation art works, emphasizing the two-way equal action behavior and emotional feedback between the works and the audience through emotional interaction. During the interaction with interactive image installation art works, the audience continuously receives and feels the strong "life" and "consciousness" of the works themselves. The active interaction between the audience and the work makes the emotional expression of the work more complete, and also makes the interactive image installation art work more spiritual and cultural.

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