

Return of Physical Interaction: Joachim Sauter's New Media Art

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Abstract: Joachim Sauter has been engaged in the creation of new media art for more than 20 years. His early works have a successful exploration of the technical expression of new media, and later works emphasize the reality of interaction through physical objects. Therefore, his works is an excellent case for the study of new media art development. Through his works, the development process of new media art could be seen, and the idea of return of physical interaction is worthy of extensive reference in the fields of new media art creation and design.

1. Introduction

New media art generally refers to art forms that use modern technology and new media as the main means of expression. New media art originated in the electronic age, making full use of the technology and characteristics of the electronic age, including video, animation, virtual images, electronic machinery and other forms of expression, and extended to the traditional art field with great inclusiveness, blurring the field limit. As long as we review the relationship between the development of oil painting technology and the Renaissance, the relationship between photography and impressionism, we can recognize the enormous influence of technological development on the form and concept of art, and the new media related technology is also changing the form and boundary of art. It is hard to categorize a new media work as clearly as classical art.

2. Why Joachim Sauter's work

As a representative new media and installation artist for nearly 20 years, Joachim Sauter is known as the "father of new media." As early as 1988, he co-founded the ART+COM design studio with programmers, artists and designers. ART+COM is dedicated to exploring the possibilities of new media in the fields of art and design. Since 1994, a large number of unique and moving works have been created, including the dynamic new media installations of the new BMW Museum in Munich, the "Kinetic Rain" installation at Singapore Changi Airport, and the installation "Mobility - Reflective Kinematronic II" for the Shanghai World Expo, "Anamorphic Kinetic" for Deutsche Bank Frankfurt headquarters. Although Joachim has achieved great results, there are only a few studies of his works and most of them are introductory texts. Therefore, this paper attempts to think

and explore the concept of creation through his works.

3. The Idea of Return to Physical Interaction

3.1 Kinetic Sculpture as example

Take Joachim's new media installations for BMW new museum in Munich in 2008. This "Kinetic Sculpture" consists of 714 metal balls suspended in a 6-square-meter space with thin steel wires. Each metal ball is controlled by a separate servo motor to adjust the height of the metal ball in space. These seemingly single individuals operate through the computer system and become "sculpture" works that can float in the air and change the overall shape. The work expresses BMW's exploration of car design through a 7-minute dynamic narrative. Irregular movement of the metal ball presents a chaotic state at the beginning, expressing the state of inspiration of the form; then a preliminary abstract car outline appears slowly, representing the initial car prototype; then one after another car contours alternate until the last concept car silhouette. The entire dynamic process is full of poetic mechanical beauty.

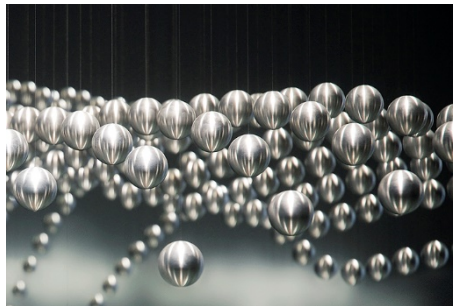


Figure 1 Kinetic Sculpture BMW

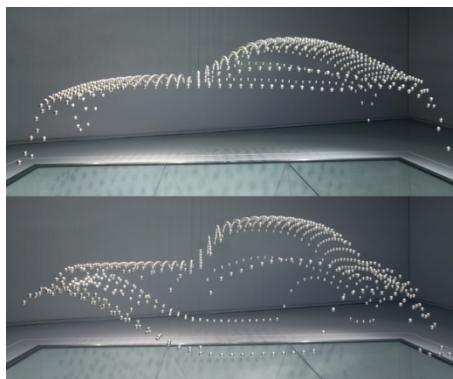


Figure 2 Kinetic Sculpture BMW

After exclamation, how do we view this work? Interestingly, Joachim named the work “Kinetic Sculpture”, which may indicate that the author prefers to look at the work from a sculptural perspective rather than new media or installations. This also echoes his main point of view: return to physical interaction.

3.2 First stage: embracing new media

If Joachim's work could initially be divided into two stages. Then the first stage should be the period of embracing new media. During this period, it is clear that Joachim was fascinated by the expressiveness and possibilities that new technologies and new media can bring and try to push it to the extreme, represented by “TerraVision”.

At the stage when computer and new media technologies are just beginning to become popular, Joachim has foreseen the impact of the vigorous development of new media-related technologies on society and human lifestyles with an extremely keen eye. “The computer has quickly been seen as an independent medium, not just a tool to help design and publish. When the visual network appeared in 1993, we realized a medium equivalent to printing, television and radio. Appeared.” (Joachim, December 2013) After foreseeing the development and possibilities of new media-related technologies, he quickly embraced new media technologies and created a series of works, such as the 1992 “Zerseher”; “TerraVision” in 1994; “The Jew of Malta” in 1999-2002. Among them, “TerraVision” system is the ultimate exploration of this work. This work is a networked virtual visual earth reproduction system that integrates satellite imagery, aerial imagery, contour map data and building model data. Users can use this system to overlook the earth from space, bird's eye view of a city, and enter the street with pedestrian's perspective, and the entire browsing process is seamless. This system can also customize the time to see this place at a historical moment. Experience of this system is almost identical to our experience with Google Earth today, and it is also a strong proof of Joachim's foresight, we know that Google Earth was only launched in 2005 after 11 years.



Figure 3 TerraVision

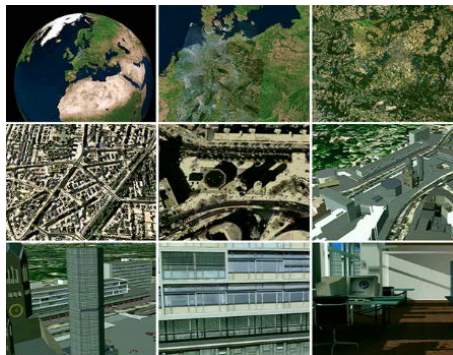


Figure 4 TerraVision

Joachim then created the “The Invisible Shapes of Things Past” 1995, and “Timescope” 1995. The Timescope is a viewing lens fixed next to the ruins of the Berlin Wall. Through the viewing lens, the audience can see the realistic streets of Berlin, and then see the time gradually recede, and the historical scene of the current scene is full of connotations. The graffiti of the Berlin Wall, the ruins after the bombing, and so on. The whole work seems to see the past through the viewing lens. And “The Jew of Malta” 1999-2002 brings new media interactions and projections to the stage of drama, creatively using action tracking technology to capture stage characters, projecting costumes onto characters and stage. Subsequent works "Composing The Lines" 2002, "Gardens"2004, "Floating Numbers" 2004, "O2sulpture"2005 etc. Themes vary, but they are all works that use projection devices or display screens to interact with motion capture for information interaction.

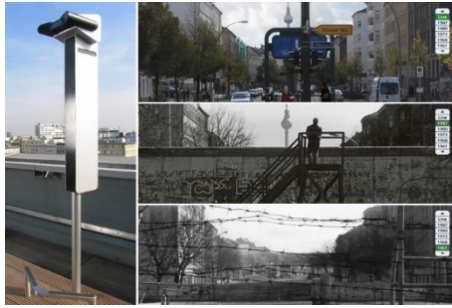


Figure 5 Timescope

3.3 Second stage: return to physical interaction

The second stage is to surpass new media and seek to return to physical interaction. The stage is represented by the Kinect Sculpture BMW event sculpture. But it is believed that Joachim's 2006 "Duality" should be regarded as an iconic work. This piece is an interactive device designed for an office in downtown Tokyo. The installation site is a passage connecting the subway station to the adjacent residential office area, which passes through an artificial lake. This particular spatial situation provides inspiration for the concept of "duality". The 4-meter square white LED display is mounted on the aisle, covered with sandblasted opal glass, and the weight sensor below the glass tile measures the exact position and velocity of each step, triggering the corresponding virtual ripple on the LED display. When the water waves on these displays reach the edge of the display and the lake, the wave machine underneath will push the waves into the water. The interaction between "solid" (road) and "liquid" (water) is amplified by virtual waves on the sidewalk and real waves in the water. The water waves on the screen look exactly like the waves on the real lake.

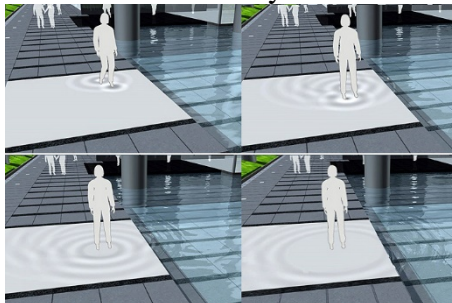


Figure 6 Duality

Compared to the previous works, the change that can be seen is that the screen no longer exists as the traditional default "screen", and is no longer used to display information and perform "click" type of interaction. The screen seems to be part of the environment. The water waves on the screen are transmitted to the lake, which also seems to indicate that Joachim's line of sight has gradually shifted from a "digital" form of expression to a more realistic and "physical" form of expression. In the interview, Joachim also clarified this point of view: "New media or interaction should be far from the screen and display, people need to be more immersed in the reality of interaction", that is, "physical objects as carrier of information."

The idea of returning to physical interaction is gradually manifested in subsequent works. Such as the "Kinetic Sculpture BMW" mentioned above and the installation art "Kinetic Rain" of Changi Airport. The dynamic rain device and the active sculpture are similar in structure, but consist of two groups, each consisting of 608 "raindrops" made of aluminum-clad copper. The entire installation area is 75 square meters and the height is more than 7 meters. The overall action

of "Kinetic Rain" is 15 minutes, programmed by computer design, these two parts of the raindrop coordinated action, sometimes mirrored, sometimes supplemented, and sometimes responded to each other. " Kinetic Rain", "RGBCMYKinetic" (created for the opening exhibition of the Gwangju Asian Art Center in South Korea, 2015), " Anamorphic Kinetic", the main feature of those works is that the audience does not seem to see the "new media", but only metal balls or mirrors, all the projections, screens, sensors and other devices that are usually presented are hidden.



Figure 7 Kinetic Rain

4. Conclusion

The advent of the new media era has changed the social form and brought about earth-shaking changes in the fields of art and design. The combination of technologies such as sensors, displays, projection devices, and interactions provides artists, designers, and practitioners with unprecedented expressions and virtually unlimited possibilities. The use of new media in the works or exhibitions we see now is very common. At the same time, we also saw reflections and explorations on new media applications, such as Joachim's work mentioned in this article, as well as Japanese Maywa Denki works, which completely circumvented the use of screens and projections. We can't judge whether the expression of new media art should be like the early work of Joachim or the work of teamlab, in the creation of the ultimate application of technology to bring a gorgeous sensory enjoyment; or should work like Joachim's later works, hidden technology behind the work, and to express in the form of realistic physics.

The author believes that if Duchamp opens the door to new media art, Nam June Paik provides the first classic case of new media art for the latecomers, and the subsequent new media art exploration form has a clearer road map and route. There are many small branches in the picture, pointing to new media interactions, audio and video images, virtual reality and other directions, and latecomers are exploring on various branches. Joachim's style change can be seen in his reflection on the application of new media and new technologies in the early days. The works after reflection gradually show his point of view, that is, to abandon or hide the interface of electronic products and replace them with physical reality interface. Although the screen provides a fresh, free and gorgeous interface, this freshness and gorgeousness seems to be too splendid. We are not opposed to it, but after too much splendid, works that close to real life and physical texture seem to have more long-lasting value.

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