

CONSERVATION OF HISTORIC CATHODE RAY TUBE-BASED ARTWORKS FROM THE 1960S

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ABSTRACT

As broadcast television became a ubiquitous part of culture in the 1960s, the first generation of artists to recognize the potential of cathode ray tube (CRT) television sets—and later video—as a new artist’s medium emerged. The Korean-born American artist Nam June Paik (1932–2006) began to experiment with CRT monitors in 1962, pioneering the development of media-based art. Paik transformed the idea of an image on a television screen from a literal representation of objects and events into an expression of the artist. In a diverse body of work that includes installations, performances, interactive artworks, and collaborations with other artists, Paik questioned the idea of time, the nature of music and art, and more specifically our understanding of television. As these technologies become obsolete, our ability to access and exhibit a significant segment of our cultural property is seriously challenged.

During Paik’s time in Germany from 1956–1963, he met the composers Karlheinz Stockhausen (1928–2007) and John Cage (1912–1992) as well as the conceptual artists Joseph Beuys (1921–1986) and Wolf Vostell (1932–1998), who inspired him to work in the field of electronic art. Paik first began participating in the Neo-Dada art movement, better known as Fluxus and made his big debut at an exhibition known as *Exposition of Music–Electronic Television*, in which visitors interacted with different artworks and performance pieces in different rooms.

EXPOSITION OF MUSIC—ELECTRONIC TELEVISION

Paik's first solo exhibition *Exposition of Music–Electronic Television* was held from March 11 to 20, 1963 in a gallery run by architect Rolf Jährling in his private residence in Wuppertal, Germany. The title that Paik chose for this exhibition indicates his transition from music to the electronic image. Four “prepared” pianos, mechanical sound objects, several audio records and tape installations referenced his music background. Paik transferred this treatment of musical instruments and records to the television set, while scattering televisions in the gallery rooms. Always exploring different ways to alter or distort their images, he radically changed the use of CRT monitors. Paik created twelve television set artworks in 1963, entitled *Zen for TV*, by reducing the image to a vertical line. In this group of works, Paik turned the electron beam tube and placed the television sets on their sides, implying both that the sets are in a meditative state and that they might serve as a meditation aid. In *Rembrandt Automatic*, 1963, television set, private collection, Paik turned the CRT on and placed it face down on the floor. In *Point of Light* 1963, manipulated television set, Hamburger Bahnhof, Berlin, he invited the visitor to become an active part of the exhibition by including a radio pulse generator that was hooked up to the television so that as the viewer turned the volume dial on the radio, the point of light in the center of the screen became larger or smaller in. In *Kuba TV*, 1963, manipulated television set made by Kuba manufacturer, 46.5 x 58.5 cm, Collection of Dieter and Si Rosenkranz, Berlin, the image on the television expanded or shrank according to the level of volume linked to the television. In a prototype of *Participation TV*, 1963, a microphone was connected to the television and a foot operating switch. When the viewer activated the switch and spoke into the microphone, their voice was translated into an explosive pattern of points of light on the screen. Today, this room is seen as the starting point of the video art that later developed, although Paik, did not yet have access to video equipment (fig. 1). Paik was still modifying

inexpensive second-hand television sets to distort the images or the programs as they were being broadcasted.

Paik left Germany soon after his first exhibition in Wuppertal to move to New York City and began a collaboration with the classical cellist Charlotte Moorman producing performance works. In 1965, Sony introduced the Portapak, the first portable video and audio recorder. Paik could now both move and record things outside of his studio. And with no doubt from there, Paik became an international celebrity, known for his creative video sculptures and video installations.



Fig. 1. Installation view of *Exposition of Music–Electronic Television*, Galerie Parnass, Wuppertal, Germany, March 11–20, 1963. Photo by Rolf Jährling. Courtesy of John Hanhardt

ELECTRONIC ART

In 1965 Paik had two solo shows in New York. The exhibition *Electronic Art* at the Galeria Bonino and an exhibition at the New School For Social Research, New York, that featured both the Demagnetizer *Life Ring* (1965) and *Magnet TV* (1965), a 17-inch black-and-white television set with magnet, 72.1 x 48.9 x 62.2 cm overall, Whitney Museum of American Art, New York, acc. no. 86.60a-b, in a display that acknowledged television as a new tool on the artist pallet. In the performance piece *Magnet TV*, he created an abstract pattern by moving a magnet on top of a television set and distorting the path of the electrons generated by the CRT.

In a German video clip produced by broadcast 3 SAT, Paik elaborates on his motivation to work with televisions and in particular *Magnet TV* (1965):

You have to destroy the television. TV was always been one-way information and I wanted to talk back to television. Therefore, this has a symbolic meaning, I found out in 1965. More than five million technicians knew that a magnet is able to create such paintings. But nobody used it. Why? I don't know . . . Maybe TV was still too expensive. . . . And then there is this fetishism with technology, but I only respect humans, and not machines or money. Therefore, I like to destroy what is considered to be holy, TV was such a holy thing as the piano. I destroyed the piano and the television. (3 SAT, n.d.)

TV as a Creative Medium

In 1969 Howard Wise organized a show entitled *TV as a Creative Medium* to reflect the increasing use of CRTs as an artistic expression. This show also included Paik's iconic *TV-Bra for a Living Sculpture*, 1969, two CRT television sets, rheostat, foot switches, acrylic boxes, vinyl straps, cables, copper wire, dimensions variable, Walker Art Center, Minneapolis, acc. no. 1991.98.1–10, as well as many other artists using experimental television technology of that time. This included the artist Earl Reiback (1948–2006), who artistically modified and experimented with CRTs in a different way. Usually the inside of the CRT tube is a vacuum. Reiback removed some of the phosphorous coating on the inside of the glass of the CRT tube, covered the inside of the tube with phosphorus paint, and recreated a vacuum with neon gas. In *Thrust*, 1968, modified CRT television set with phosphorous paint, Whitney Museum of American Art, New York, acc. no. 94.132, a phosphor coated screen is mounted perpendicular to the face of the tube. As the electron beam scan sweeps across the inner screen, shooting im-

ages in color are produced in response to the broadcast program.¹ All those examples describe artworks that were created by manipulating commercial CRT technology as opposed to the use as a video art monitor. The use of manipulated CRTs as a creative medium emphasizes the work-defining properties of this type of artwork and its dependency on a now obsolete technology.

CATHODE RAY TUBE MONITORS

CRTs were the standard technology used in Paik's studio from the early 1960s until his death. Constant maintenance of CRTs is required to keep Paik's work exhibitable. This includes servicing the monitors, finding replacement parts, and replacement CRTs. With the shift in technology, these preservation needs are a challenging task and hard to perform due to the lack of replacement CRTs and components available on the market, but also due to the decreasing availability of specialized technicians and engineers serving the field of CRT repair. In addition to servicing, repairing, and replacing CRTs, it is important to document the artworks and their components in full detail. Although traditional conservation methods are appropriate for examining and documenting the physical or sculptural components of a work of art as a sculpture or painting, they are not sufficient to capture information about the condition of electronic equipment. The development of new conservation methodologies as well as best practices for documentation is critical to the preservation of media art.

DOCUMENTATION

In order to gather technical details and to provide as much information for future reference, a detailed documentation form has proven to be extremely helpful. Inspired by the modular documentation forms created by Joanna Phillips, Associate Conservator of Contemporary Art, Solomon R. Guggenheim Museum, New York (Phillips 2010), and the forms developed by the New Art Trust, Matters in Media Art Initiative (Tate 2005), a new documentation template was designed. Chi-Tien Lui, a CRT engineer, and Raphaela Shirley, a former Paik art-

ist's assistant collaborated on the development of the form, which is currently undergoing further testing. Beside the artwork and component identification, emphasis is given on the status of the technical and aesthetic condition of the equipment. As such, it is recommended that the information captured should include CRT identification as well as a condition assessment as outlined in the Appendix. For further information on storage and maintenance of CRTs, see "Fundamentals of the Cathode Ray Tube based Display and its Maintenance and Conservation within Contemporary Artworks" by Chi-Tien Lui and Raphaele Shirley published in this volume.

APPENDIX

CRT IDENTIFICATION

Status of Equipment

Dedicated:

Historic:

Shared equipment:

Attributes

Original:

Modified:

Mismatched:

Replaced:

General information

Description of casing (wood, plastic, veneer):

TV Model number:

Serial number:

Manufacturer:

Manufacture date:

Location/ Origin:

CRT model number:

CRT manufacturer:

CRT diagonal dimensions:

Outer case dimensions:

TV power draw manufacturer's listing:

TV power draw site measurement:

IR:

Video input type:

Ampere:

Voltage:

Plug:

Associated Items

Operating manual:

Service manual:

Images

CRT CONDITION

Condition Assessment

Appearance of Equipment:

Casing intact and undamaged:

Clean and dust free:

Screen undamaged:

Condition Track

Noise – Audio:

Noise – Component:

Power Supply Problem:

On/Off working - w/ Breaker:

Requires Manual On/Off:

Requires remote for Power on:

Maintains proper channel for on/off:

Control dials:

Dials Functional:

Odors:

Parasite sound:

Conservation Needs

Cleaning

Inside:

Outside:

Control dials:

Odors:

Components:

Maintenance, Service, Repair

Spares and Consumables

Packing Details

Packed Dimensions:

Weight:

Type of Packing

Manufacturer's box:

Flight case:

NOTES

1 The analog broadcast television signal was discontinued in the US in 2009. In order for the artwork to receive a broadcast signal today, the digital signal needs to be converted to analog.

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