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OVERCOMING OBSOLESCENCE: THE EXAMINATION, DOCUMENTATION, AND PRESERVATION OF NAM JUNE PAIK'S *TV CELLO*

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ABSTRACT

Appropriate documentation is a critical part of the preservation and conservation of electronic media art. Traditional methods and formats have proven insufficient to adequately describe the complex technological dimensions of this type of artwork. The examination and conservation of Nam June Paik's (1932–2006) *TV Cello* (1996) provides an example of the distinct approaches and considerations required for the treatment and documentation of a work of art with sculptural, electronic, and multimedia components. This artwork includes varied materials and technologies, including acrylic sheeting, cathode ray tube television sets, and video content in laser disc and U-matic tape formats. Because electronic equipment and analog media formats found in video art are becoming technologically obsolete, it is critical that best practices be developed so that such works can be preserved while those components are still functional, and before the necessary technical expertise becomes unavailable.

INTRODUCTION

Artists have always used the technologies of their time. Beginning in the mid-1960s (when video technology became more accessible through the introduction of the Sony Portapak video recorder), artists were quick to integrate video into their creative practice. Over its forty-five year history as an artistic medium, video art has evolved rapidly. Many technological changes have taken place: new recording devices, formats, and display methods have replaced the old—only to quickly be replaced themselves. Cathode ray tube (CRT) television sets, for example, were once commonplace, but they have since been superseded by newer technologies. As these technologies become obsolete, our ability to access and exhibit a significant segment of our cultural property is challenged. For this reason, appropriate documentation and preservation techniques for electronic and video components are of utmost importance to the individual artwork.

Although traditional conservation methods are adequate for examining and documenting the physical or sculptural features of a work of art, they are not sufficient to capture valuable information about the condition of electronic equipment or the contents of media components. The development of new conservation methodologies as well as best practices for documentation is critical to the preservation of video art.

For electronic media art, the aim of documentation should not only be to extend the full functionality of an artwork, but also to plan for the time when its components become outmoded. At that point, it may no longer be possible to exhibit an artwork as originally intended by the artist, and documentation may be the only remaining record of the artwork in its initial form. Consequently, it is important to document (in consultation with the artist, when possible) not only the technical specification and condition of the components, but whether they can be altered or replaced without transgressing the meaning of the work. The totality of all this information guides the establishment of protocols for the preservation of an artwork, and can be used to make decisions about what changes are acceptable in the future. This underscores the importance of detailed record keeping, which is central to any preservation strategy.

The preservation of electronic media art is a relatively new area within conservation, and is well suited to interdisciplinary collaboration in the development of guidelines and models for best practice. The conservation of Nam June Paik's *TV Cello* (1996) from the collection of the Emily Harvey Foundation, New York City, provides

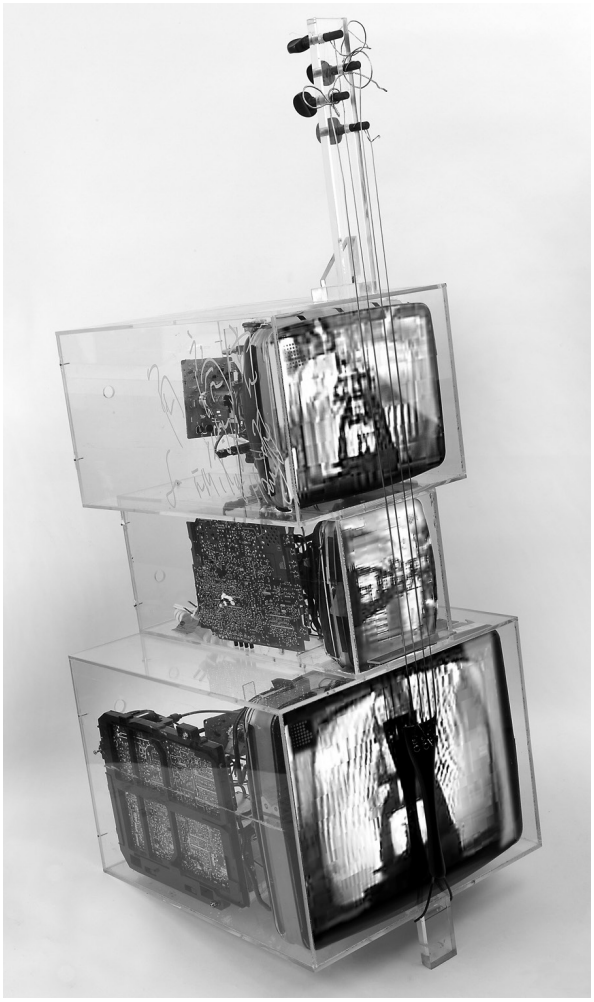

Fig. 1. Nam June Paik, *TV Cello*, 1996, three CRT Sony Trinitron television sets, acrylic boxes, electronics, remote control, wires, U-matic tape cassette, laser disc, 133.7 x 47.3 x 53.3 cm. The Emily Harvey Foundation, New York. Courtesy of The Emily Harvey Foundation.

an example of the necessary considerations and useful strategies for approaching an artwork with sculptural, electronic, and media components.

This paper addresses methods for documenting and preserving electronic media art using as a case study Paik's 1996 version of *TV Cello* (fig. 1). In addition to documentation and preservation, ethical concerns including authenticity and migration of video formats are considered. The research for this project was conducted in the Spring of 2010 as part of a graduate course entitled "Modern Materials and Media in Contemporary Art" at the Conservation Center, Institute of Fine Arts, New York University, under the supervision of adjunct lecturer Christine Frohnert.

PRECURSORS TO *TV CELLO* AND PAIK'S ARTISTIC DEVELOPMENT

Nam June Paik was born in Seoul, Korea in 1932. He moved to the United States in 1964, where he lived and worked until his death in 2006. As television became ubiquitous in the 1960s, he began to experiment with the medium, pioneering the development of media-based art. Paik transformed the idea of a video 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 including 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. For example, Paik created works like *Magnet TV* of 1965, a 17-inch black-and-white television set with magnet, 72.1 x 48.9 x 62.2 cm, Whitney Museum of American Art, New York, acc. no. 86.60a–b. In this performance piece, he created an abstract pattern by moving a magnet on top of a television set, thus distorting the path of the electrons generated by the CRT.

Later Paik used the television set as a compositional element rather than simply a medium to transmit image and sound. One famous example of such works is *TV Bra for 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. Featuring the classically trained cellist Charlotte Moorman (1933–1991), the work marked the beginning of an artistic partnership that would last two decades. In 1971, two years after *TV Bra for Living Sculpture*, Paik and Moorman debuted *Concerto for TV Cello and Videotape*. In this performance piece Moorman used a sculptural interpretation of a cello composed of three stacked acrylic boxes housing three partially disassembled CRT television sets (fig. 2). Like its traditional counterpart, the cello had strings that Moorman bowed, struck, and plucked to produce an array of sounds. During performances, it displayed single-channel video content coming from one of four different sources: a closed-circuit video showing a live view of the performance; a previously recorded videotape; a live feed of a local television broadcast signal; or any of the previous three video sources distorted by the audio signal from Moorman's live performance via a synthesizer.

Fig. 2. Nam June Paik, *TV Cello*, 1971, video tubes, television chassis, Plexiglas boxes, electronics, wiring, wood base, fan, stool, photograph, dimensions variable. Formerly the collection of Otto Piene and Elizabeth Goldring, Massachusetts. Walker Art Center, Minneapolis, acc. no. 1992.6.1-.10, T.B. Walker Acquisition Fund, 1992. Courtesy of Walker Art Center.

Over a thirty-year period, Paik constructed at least ten versions of *TV Cello*. While some were intended to be performed by Moorman, others were created as sculptural works with no intention of use in live performance. While Paik closely followed the design of the original in the earliest versions, he later began to vary the number and arrangement of the televisions and acrylic boxes as well as the video content. In most cases he continued to use CRT television sets, but in one version from 2003, liquid crystal display (LCD) television sets were used instead. This change in technology causes a fundamental difference in appearance—one implemented by the artist himself—and also affects how these later versions should be preserved.

EXAMINATION OF THE EMILY HARVEY FOUNDATION *TV CELLO*

While similar in appearance to the 1971 *TV Cello*, the Emily Harvey Foundation version of *TV Cello* was made after Moorman's death, and therefore was never intended for performance. The sculpture displays a looped single-channel video that consists of clips of collaborations between Moorman and Paik. It incorporates sculptural components (a three-part acrylic housing and related attachments); hardware components (three Sony Trinitron CRT television sets, a remote control unit, and cables); and media components (one U-matic tape and one laser disc, both entitled *Finnish Dream*). Visual examination also revealed that several elements were conspicuously absent. There was no playback equipment for either the U-matic tape or the laser disc. Also missing were speakers, either from the television chassis or external units. This begged the question of whether the video contained audio, and if so, whether it was intended to be heard. Finally, there was no bow.

To facilitate the future installation and maintenance of the artwork, it was important to fully document the technical specifications of each component. This included the aspect ratio; the television standard; detailed notes about elements of the exhibition environment; and modifications of the work that occurred throughout the course of its exhibition history. To aid the documentation procedures, the authors used a set of templates created and shared by Joanna Phillips, Associate Conservator of Contemporary Art, at the Solomon R. Guggenheim Museum, New York (Guggenheim 2012). The templates consist of a general form used to describe the piece overall, and supplemental forms for each electronic media component and format, allowing them to be assessed and documented independently of each other. Such a set of templates that captures detailed characteristics of each type of sculptural, electronic, and media component, is invaluable for documenting complex works of electronic media art like *TV Cello*. Standardization of the forms promotes efficient workflows, and makes gathered information consistent, accessible, and exchangeable.

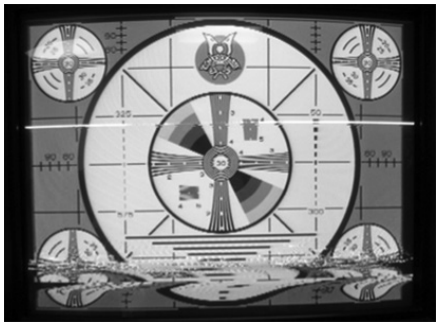

Fig. 3. Illustration of a drop-out during examination and evaluation at DuArt Film & Video, New York, April 2010. Courtesy of Christine Frohnert.

In evaluating the media components, the goal was to determine the condition of each video format, as well as the source of the content in each video. The authors hoped to determine the relationship between the laser disc and the U-matic tape, and to ascertain the number of generations between each video and the original editing master. Understanding such details about a video's production history may inform the production of further copies. For example, if the preservation strategy for an artwork requires migrating analog video from one format to another, one should migrate from the copy closest to the edit master in order to avoid the loss of image quality that accompanies each generation.

The condition of the U-matic videocassette and laser disc was assessed with the help of an audio-visual production company in New York City. Their studio had the equipment needed to make a thorough investigation: a large calibrated CRT monitor with underscan and pulse-cross capabilities, accompanied by vectorscope and waveform displays. These features made it possible to view aspects of the video that are not visible during normal playback. Common image errors can be observed, such as drop-outs, which appear as white spots moving across the video image (fig. 3). These interruptions are caused by dirt or scratches on the media carrier, but may also indicate damage in a prior generation of the video that has been permanently recorded into the next generation copy.

Through careful viewing, it was possible to glean some information about the provenance of the *TV Cello* video, *Finnish Dream*. One can determine the number of generations between a master and a subsequent copy by looking for the visual indication of one or more head-switching points in the latter.[1] A U-matic video recorder has two video heads that create the signal on the magnetic tape. In order for the signal to be continuous, there is a particular point at which the machine must switch from recording with one head to the other. When the video is viewed with the pulse-cross displayed (i.e., the picture is offset both horizontally and vertically), this point is visible as a slight misalignment in the video near the edge of the frame (fig. 4). If a master is copied to tape, two points will be visible in the second generation: one from the machine that recorded the master and another from the machine used to create the copy. With each generation, the recorder adds a head-switching point in a slightly different location.

Fig. 4. Illustration of head-switching point in pulse-cross display during examination and evaluation at DuArt Film & Video, New York, April 2010. Courtesy of Christine Frohnert.

It was found that the videos on the U-matic tape and the laser disc differed slightly in their content, contradicting the authors' expectation that they held an archival master and an exhibition copy of the same video. Video on the laser disc includes a looped series of five clips, each with an independent editing history before being pieced together. The laser disc was made from a tape that was itself at least three generations from an editing master. The U-matic tape contained similar looped video, but the clips were supplemented and manipulated in various ways. This tape was also several generations away from an editing master (fig. 5).

Why did the content of the two video formats differ? Was this intentional, and if not, which video did Paik intend to be played with *TV Cello*? In lieu of the possibility of posing these questions directly to the artist, the authors consulted collaborators, assistants, technicians, and others with historical and professional connections to the creation or acquisition of this and other *TV Cello* works. The aim was to better understand technical aspects of the work and establish which aspects are integral to its essential meaning and which are variable.

It was learned from the Emily Harvey Foundation that *TV Cello* was acquired in 1996 and that it arrived as a kit with the expectation that it would be assembled by an audio-visual technician. According to the Foundation, their version has never been exhibited, suggesting that playback equipment was not purchased at the time of acquisition. In order to inform the decision about which

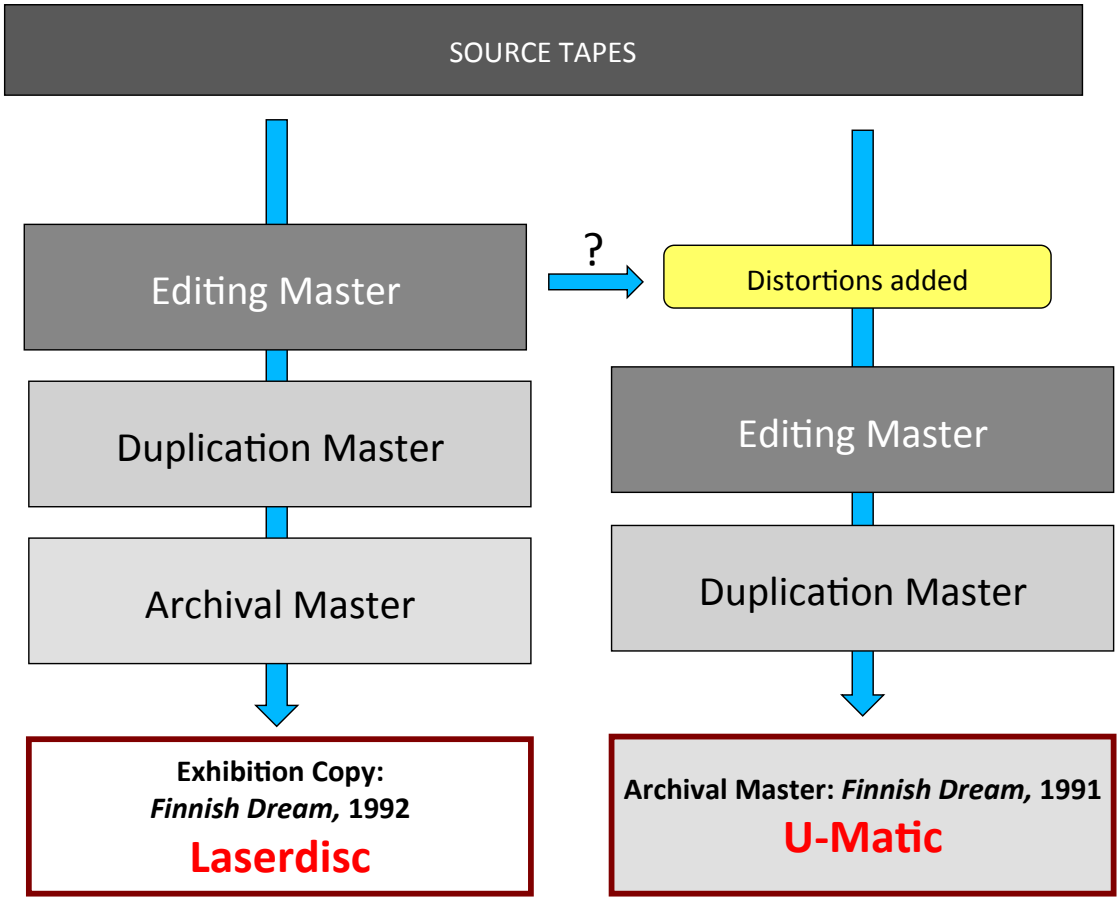

Fig. 5. Laser disc and U-matic provenance diagram. Courtesy of Lisa Nelson.

player would be appropriate to purchase for *TV Cello*, the authors consulted with the technician who originally assembled the artwork (CTL Electronics 2010). In addition to a discussion about Paik's preferences for available playback equipment in 1996, the technician indicated that in order to bring *TV Cello* into working order, a video distribution amplifier would be necessary to deliver the video signal from a single source to the three separate CRTs simultaneously.

One of Paik's studio assistants also provided insight into Paik's working processes and articulated his view of the artist's intent for this version of *TV Cello* (Saueracker 2010). He explained that many of the *TV Cello* works lack bows, and that its absence in this case should not necessarily be attributed to the fact that the artwork was created after Moorman's death. He also suggested that though both the laser disc and U-matic tape formats contained audio tracks, Paik might have removed the television speakers from the chassis in order to deliberately exclude the audio content from the work. Furthermore, Paik may not have been concerned about the artwork being exhibited with or without audio. He explained that in his experience, Paik had been interested in the conceptual content of the artwork more than the details of its exhibition, and cautioned us against being too prescriptive. Paik appreciated the possibilities for variation in his work, and in some cases considered his work to be akin to the score for a performance—some elements were essential, but others could be left to the judgment of whoever is installing or performing the work each time it is exhibited.

The End of Analog Television Signals
2006: Luxembourg, the Netherlands
2007: Finland, Sweden, Norway, Switzerland
2008: Belgium, Germany
2009: United States of America
2010: Spain, Latvia, Estonia
2011: Japan, Canada
2012: United Kingdom
2013: Australia

Table 1. Dates of obsolescence for analog broadcast television signals. Courtesy of Lisa Nelson.

CONSERVATION AND THE FUTURE FUNCTIONALITY OF *TV CELLO*

Learning about the history of an artwork and cataloguing all its parts makes it possible to predict some aspects of its future vulnerability. Observing and recording these details is important, not only as a means to create a record, but as a key part of managing risk. As conservators working with electronic art, we must consider changes that might take place and identify which parts of the work will require specific technologies or equipment to ensure future functionality.

Unfortunately, some elements of many media artworks are already obsolete. In the case of *TV Cello*, exhibiting the work as the artist intended would require purchasing a circa 1996 laser disc player and a video distribution amplifier to split the signal between the three CRT television sets. It would also be necessary to budget for repair or replacement of the CRT television sets in case of their future failure.

More problematically, one of the four original display modes for the early versions of *TV Cello* is already defunct. Broadcast of analog television signals ceased in 2009 in the United States, and this trend continues worldwide. Because the signal is integral to these works, all versions of *TV Cello* that Paik created for the television broadcast standards of the United States, Germany, and Australia are impossible to display as they were originally intended (table 1).

Information gathered through examination of media components also informs decisions about digitization and migration. When approved as a preservation strategy, digitization and migration should take place as soon as possible before additional degradation occurs. One must inspect the video content and identify image errors before digitization so that they can be corrected where possible.

The entire process should be supervised by a conservator in order to ensure that the appropriate migration method is selected and documented, because this will directly affect the quality of the copies. Ideally the highest quality transfer method and a widely-supported file format should be used when digitizing media. To migrate the video content of *TV Cello*, a 10-bit uncompressed

QuickTime compatible MOV file format was used, one of the highest quality standards currently available for digitization.

Maintaining a distinction between the original and the copy is vital. If artists intend their work to be shown as VHS videotape displayed on a CRT monitor, these choices should be honored so long as they are technically feasible. Ideally, it would be possible to exhibit a work of analog video art in its original format indefinitely. In reality, however, the original video will wear out and playback equipment will become obsolete. Digitization and migration should be undertaken in preparation for the time when it's determined that the analog medium can no longer safely be used. Digitization should not be thought of as a way to make it more convenient to exhibit the artwork. The owner must weigh the risks of media degradation during playback against the benefits of exhibition, while taking into account the projected lifespan of the original medium. Digitization is inevitable for many analog formats, so migration must be carefully handled, and should be indicated to the viewer when the work is exhibited.

CONCLUSION

It was possible to learn much about Nam June Paik's 1996 *TV Cello*. However, many questions remain unanswered. Perhaps most perplexingly, whether the laser disc or the U-matic tape was meant to provide the video content. While the authors had hoped to be able to put together a more complete history of the artwork, this project is a compelling demonstration of why detailed examination and documentation of both the artwork and its production history are so critical in the field of conservation. Compiling information about the sculptural, hardware, and media components of a complex artwork such as *TV Cello* is a complicated process. Developing templates and protocols for gathering and organizing information can make this task more manageable.

Once a full picture of the artwork has been developed, informed decisions can be made regarding conservation treatments, preservation and storage considerations, and migration of media. Proper documentation is particularly important for analog media and electronic art because technological obsolescence affects these works so profoundly. In some cases, aspects of an artwork may be remembered in the future only through the documentation that we create today. When it comes to electronic media art, documentation is conservation.

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NOTES

1 More accurately, by counting visible head-switching points, one can determine the minimum number of generations between two copies. The count is a minimum because certain techniques exist which allow one to suppress the visual indication of the head switching point during recording.

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