

# The Archival Turn: Toward New Ways of Conceptualising Changeable Artworks

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## Abstract

As inherently changeable artworks, computer-based installations are amongst the most demanding when it comes to their continuation, perpetuation and muzealisation. And yet, up to now, this topic has attracted little attention in the specialist literature, essentially due to gaps in professional training in the area of technology-based art and a requirement for in-depth interdisciplinary collaboration. Computer-based works may exist in a number of different versions, variations, and clones, pushing the boundaries of the traditional paradigms of museum collecting, archiving, and conservation practices, and questioning what has for so long been understood as a static, stable, and fixed "object." The existent variants of a work may generate variations and further developments that are not necessarily associated with one another or that might only be loosely connected with the artist's initial idea. Instead of determining an artwork, its conservation or recovery may lead to the fabrication of yet further versions. Computer-based works also provoke the most arduous disputes among professionals regarding the limits of their classification, as well as the display aesthetics and preservation standards. Next to the conservators, archivists, and curators, the artists, too, become caretakers and even decision-makers that shape the work long after it enters a museum collection and then reaches its presupposed stability. The archival turn suggests a radical change in the conceptualization of these artworks, with consequences for the normative framework of conservation that had long been compliant with museum practices related to conventional, apparently static artifacts.

**Keywords:** archive, changeability, creative conservation, collaboration, computer-based art, continuity, identity, time

## Introduction

Since changeable artworks emerged as a result of shifting practices in the artistic avant-garde in the 1950s–70s, museum collecting and presentation practices, as well as the methods and ethics of conservation have become subject to re-evaluation. Apart from the heterogeneous assemblages of installation art and the idiosyncrasies of performance, it is technology-based media, including computer-based installations, which provoke agitated discussion in the still traditionally rooted field of conservation. Among the questions addressed in relation to these art forms in the discourse of conservation is one that pertains to what an artwork is in relation to the change it experiences and, consequently, what exactly there *is* and what has to be *preserved*. These questions acquire a currency in relation to both media art collections and media *in* art collections. Specialized collections devoted solely to technological artifacts are nothing new in the institutional landscape;<sup>1</sup> yet from another perspective, technology-based media are widely present in almost all contemporary art collections. Therefore, questions pertaining to the proper approach to an artwork, the survival of which depends on the fast-ticking clock of the

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<sup>1</sup> Center for Art and Media in Karlsruhe and LIMA (formerly NIMk) in Amsterdam, among many others, as an example.

development of digital technologies and, accompanying it, technological obsolescence, have become increasingly pressing. In a collective and individual endeavor, conservators, archivists, and curators have started to reflect upon the nature of these artworks – artworks which, often-times, are spatially and temporarily determined (meaning they are attached to their temporal characteristics and spatial context), and complicated by their media's temporal referentiality which impacts their potential emulation, migration, and re-interpretation. Intrinsic change – a change built into the work structure – characterizes technology-based media, including computer-based artworks. This is unlike many traditional media, which submit to a certain kind of linearity of entropy, decay, or degradation. Intrinsic change is dictated by the short-durational character and the logic of recurrent replacement of technology-based media play-back and display equipment that, in performing a mechanical-technical function, constantly succumbs to wear and tear and, unavoidably, to technological obsolescence.

Although considered by several authors in the past years (Rinehart, 2000; Dimitrovsky, 2004; Garcia and Vilar, 2007; Lurk 2008; Graham and Cook, 2010, *Aktive Archive*, 2012; *Variable Media Network*, 2012)<sup>2</sup>, the topic of the preservation, archiving, and collecting of technology and computer-based media demands further attention. The comparatively little notice that computer-based art attracts might be seen in the necessity for more expertise among institutions and caretakers. Similarly, a set of new categories associated with technology-based media such as interactivity, connectivity, and computability (Graham and Cook, 2010) needs to enter the vocabulary of art historians and curators. This is necessary in order to avoid the isolation or even “ghettoization” of these media (Paul, 2007, p. 251) – an epitome of the often arduous rapport that institutions maintain. Another complication for the established collecting and conservation protocols is the maintenance by the artist of the role of a technician and caretaker by performing amendments, re-installations and even re-interpretations of their works. The artist assumes a dominant role in shaping his/her artwork's identity by extending the creative process long after the artwork has been included in a collection. This goes against the grain of traditional conservation's ethics, which presume a completion of objects and attention paid to the unique moment of an artwork's creation. It also contradicts conservation's “conservative” gesture that – seeking the authentic moment in an artwork trajectory (Hölling, 2013) – prohibits any creative involvement with the artifact, both on the part of a conservator, and indeed also of the artist after he/she has completed his/her work. Simply put: If repainting the Mona Lisa is unthinkable, why, then, when it comes to technology and computer-based media, should remaking, reinventing, and reinterpreting be considered acceptable?

### Focus

This chapter interrogates the varied trajectories of a specific computer-based artwork – *I/Eye* (1993) by Bill Spinhoven van Oosten (b. 1956) distributed by the former Netherlands Media Art Institute, Amsterdam (NIMk), currently LIMA. Served by additional observations of yet another technology-based artwork, I focus my argument on the complex trajectories of technology and computer-based works in order to reflect upon what an artwork is in the context of the change it experiences and how it functions in the world. This reflection takes place within, and reaches beyond, the conservation conceptual framework that considers the maintenance

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<sup>2</sup> The themes of conservation of media and computer-based art were taken on by Matters in Media Art, the Variable Media Initiative, DOCAM Research Alliance, the International Network for the Conservation of Contemporary Art, and the above-mentioned Obsolete Equipment Project by PACKED in the Benelux countries.

of objects in the present as well as their potential existence in the future. In these media, the aspects of conservation are inseparably bound with curatorial concerns – the questions of space, actualization, mediation and archivization. Therefore, departing from the manifold life of *I/Eye* and sketching examples of the many generated versions, variations and clones, we will arrive at broader considerations of the identity of the work. In what follows, we will focus on the ways in which an artwork may become entangled in a relationship with the archive, tacit knowledge, skill, and memory of everyone involved in its life. Looking at an accumulative character of these media, I will suggest that an artwork may become an archive of its own self, carrying the material, physical trace of its pasts and the virtual strata ready for future actualization. The archive will allow me to conceive of a temporal materiality of artworks, compliant with the ruling conventions, tastes, and conservation culture.

### Taxonomies

It is difficult to strictly define what a computer-based artwork is. In these times of enormous expansion of various forms of computed media and the perpetual flux of encoded information on the Internet, almost every art installation involves computation at a certain stage of its development and/or presentation. Yet unlike net-based, source-code-based, and computer-generated art, I propose to define computer-based art as an art form that generates artistic content based on computer-technology without a particular emphasis on the implemented apparatus, network environment, or the language of the source code. In other words, a computer-based work involves the computing device as a technical support, which can – but does not necessarily need to – participate in the creation of the aesthetic content of the artwork. In the case of *I/Eye*, the aesthetic qualities of the visual output are not exclusively dependent on the employment of a specific technology. Still, the computing technology manages the rendition of the digital image content and constitutes the greater part of the core of the artwork, also described as its *logic* (Lurk, 2010).

The term “changeability” used throughout this essay offers an alternative to the term “variability” established by the *Variable Media Initiative* (Depocas, Ippolito and Jones, 2003) and used in relation to artworks experiencing change.<sup>3</sup> Changeability is different from variability, which presumes a variation within fixed parameters defined by a score or instruction. Variability also seems to imply reliance upon some kind of a mean value. Involving extrinsic and intrinsic change and going beyond the questions of judgment, changeability moves past any fixed parameters and may entail a dramatic change that finds evidence in historic practice (for instance, a shift from interactivity to relic, or from analogue to digital format). Changeability, I suggest, takes place in time, and implies difference, rather than sameness – an aspect of variability.

The archive discussed here is both a concept and a physical entity on the basis of which the identity of the work is created. I choose to use the term identity – rather than integrity<sup>4</sup> – in order to emphasize the (culturally contingent) process of its construction.<sup>5</sup> Identity can shift, and so can the rules that determine what might still be regarded as the same artwork. The archive is never closed, limited or

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<sup>3</sup> The Variable Media Initiative undertaken by the Solomon R. Guggenheim Museum in New York established the term *variability* to characterize mostly technology-based and performative installations. A range of possible values defined the core of the work, describing a closely clustered set of the artwork’s data. These data could include the artistic idea in the form of a score or instructions, sound or audio material, special installation requirements/prescriptions, and modes of interaction. The remaining variables were subject to change, having the status of loosely prescribed specifications for peripheral elements, often software or hardware. Significant coordinates characterizing variable artworks – distant from the understanding of conventional artifacts in terms of their physical components and materials – constituted their behavior. The artwork’s behavior was neither permanent nor fixed; instead it described the ephemeral qualities of the work.

exhausted; rather, it is a realm ensuring unrestricted potentialities for the actualization of an artwork.

The acceptance of the archival turn, as it were, fosters the appreciation of a work open to change understood as something positive. If we take the flux of things seriously, nothing ever made can be stopped or fixed in the tirelessly changing universe – neither the vibrant, lively materiality of an object, nor the contexts that form it.

What about the artwork, then? Before revealing what might remain concealed at first glance in *I/Eye*, I will start to tell its story from the very beginning.

### **The absent artwork**

My first encounter with *I/Eye* was indirect. On the occasion of my participation in the research project *Obsolete Equipment* at the NIMk,<sup>6</sup> I had a strange encounter with an artwork that was physically absent, and yet virtually present. How is that possible? Rather than an artwork being experienced on the first-hand aesthetic level, for which we would have to wait until the completion of the project, I was confronted with many sources and traces. Distributed knowledge was weaved into the oral narratives of the persons involved in the artwork's life at different stages, random archival documents, images, database entries, a video showing an image of an eye in motion, and, last but not least, elements of what was once supposed to be the artwork. The lack of a direct encounter did not prevent the work of imagination – collected from bits and pieces from various sources; *I/Eye* seemed to gradually crystallize in the non-material sphere of my imagination. These beginnings have forged a profound reflection on the nature of artworks and their individual histories, as well as the behind-the-scenes functionalities of the institutional systems and cultures, including their exclusive and inclusive behaviors. Further, the first encounter with *I/Eye* spawned a contemplation of the archive as a virtual and physical sphere, and as a source for the artwork's actualization. I will return to this idea shortly.

So what exactly is *I/Eye*?

### ***I/Eye*: a computer-based installation**

*I/Eye* is a freestanding, responsive computer-based artwork.<sup>7</sup> In its installed form, it comprises a black-and-white monitor, a manipulated camera modified with a fish-eye lens placed in a metal tube on the top of the monitor, a black plinth, and a computer concealed in the plinth that serves as playback equipment.<sup>8</sup> The viewer is being observed by an active, gazing eye that fills the entire screen. *I/Eye* subverts the standard role of an artwork. Here, the gaze of the viewer has been reversed by the gaze of the artwork. Moreover, the eye – Spinhoven van Oosten's own eye – has

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<sup>4</sup> Integrity was introduced to the conservation of technology-based art by Pip Laurenson (Laurenson, 2005) as an alternative to the term of "authenticity" familiar in traditional fine art. Integrity, according to Laurenson, depends on hardware and software components, and might be divided into conceptual and aesthetic parts and depend on the aesthetic and functional values assigned to the equipment. In the case of technology and computer-based artworks, the term integrity too strongly relates to the condition of being whole, unimpaired, and intact, which contradicts the nature of the works discussed.

<sup>5</sup> Elsewhere, I pursue extensively the question of the maintenance of the identity of an artwork experiencing change (Hölling, 2013).

<sup>6</sup> The Flemish-Dutch project *Obsolete Equipment* was a collaborative research initiative conducted in 2009-2011 by PACKED in Ghent and the former NIMk with the aim of providing preservation solutions for a number of technology-based works. Other partner institutions included: MuhKA and S.M.A.K. in Flanders and the Kröller-Möller Museum in Otterlo, the Netherlands, the Stedelijk Museum in Amsterdam, the Van Abbemuseum Eindhoven in the Netherlands, and the Cultural Heritage Agency of the Netherlands RCE.

the awkward capacity to also follow the observer's movements realistically. The encounter of a human and a machine – a phenomenon known from early electronic art – is highly provocative. Through the implementation of the surveillance technique so ubiquitous in our daily commutes in big cities, in an astonishing and rather wicked way, the artwork involves the viewer in the process of watching and being watched.<sup>9</sup> Moreover, on a different level of the viewer's engagement and typology of surveillance, another viewer observes the first-degree encounter of the person standing in the direct range of the camera. In the moment of the realization of such an unsettling network of surveillance, we may ask ourselves whether, if at all, there is a moment free from the ever-present eye of the *other*.

Created in 1993, *I/Eye* (Fig. 1) is one of the earliest examples of responsive, computer-based art that was included in an institutional collection of Montevideo/Time Based Arts, later known as the Netherlands Media Art Institute NIMk (now LIMA).<sup>10</sup> René Coehlo, the founder and first CEO of Montevideo, who during an interview assigned *I/Eye* the status of an icon, holds “[...] for twenty years we have been promoting an art form that nobody was asking for. In the Netherlands it has never attracted a large audience, due to the lack of a scientific and theoretical foundation” (Coehlo 1999). It was only since the *Documenta IX* in Kassel in 1992 that artists such as Gary Hill (b. 1951), Bill Viola (b. 1951), Bruce Nauman (b. 1949), and Tony Oursler (b. 1957) have gained attention. Coehlo's gallery in the Netherlands was already being innovative by presenting and distributing video art in the late 1970s.



Figure 1. Bill Spinhoven van Oosten, *I/Eye*, 1993, responsive computer-based installation, dimensions variable, Netherlands Media Art Institute, acc. no. 13-January-199725. Artwork on display at the Montevideo gallery in the Spuistraat in Amsterdam in 1994. Courtesy of the Netherlands Media Art Institute.

<sup>7</sup> As a rule, computer-based artworks consist of files, an operating system, software, and hardware. Upon closer examination, the software can consist of a source code of more than one generation, involving the creator's annotations, and, if authored by more than one person, technical correspondence within the source code files. Hardware may involve the computer with its processor(s) driven by machine code, possible modifications such as oscillator, motherboard, and, in older devices, a floppy disc reader and a disc from which the system can be booted. Additional elements such as camera, digitizers, monitor(s), and, last but not least, the physical casing of the equipment (computer, camera, and monitor) are integral parts of these artworks, and play a crucial role in defining their properties.

<sup>8</sup> The monitor measures 48 x 51 x 50 cm, the camera with the metal tube 10 x 10 x 35 cm and the black plinth 125 x 50 x 50 cm.

<sup>9</sup> “My idea was that if everybody comes to Montevideo to look at art, I invent art that can look at people” (Spinhoven van Oosten & Hölling, 2010).

<sup>10</sup> The Netherlands Media Art Institute came into being as Montevideo in 1978. In addition to its own collection of video and media art, the institute also managed the video collections of the De Appel Foundation, the Lijnbaan Center in Rotterdam, and the Netherlands Cultural Heritage Agency (RCE). The distribution collection comprised more than two thousand media works in various formats, varying from the earliest experiments through recent productions by known Dutch and international artists. The institute's online archive accommodated more than a thousand media artworks and unique documentation of events and projects. Due to financial cuts, and after reorganization, NIMk became LIMA in 2013.



Figure 2. Left side: Bill Spinhoven van Oosten, *Shot across the mind*, 1989, and (right side) *Birds Eye*, 1991, responsive computer-based installations, precursor of *I/Eye*. Courtesy of the artist.

### The multifold trajectories of *I/Eye*

The idea for *I/Eye* materialized in the form of Spinhoven van Oosten's various realizations before its actual creation in 1993. During the period the artist spent at Coehlo's gallery at the time of its reorganization in the 1980s, van Oosten was experimenting in making drawings by recording his eye using a black and white camera. *Shot Across the Mind* (1989) was the first installation that resulted from these experiments and the artist's cooperation with Paul Klomp (Fig. 2a). Projected on a double screen, the work became fully computerized and allowed the eye to create graphical drawings by itself. A further development of the idea of an active eye implementing a projection was realized by means of the work *Birds Eye* (1991, Fig. 2b). Spinhoven van Oosten was able to use a telephone to connect with the installation from the outside. What is interesting in both these early installations is that they led directly to the emergence of *I/Eye* in two primary ways. The images that Spinhoven van Oosten used in *Birds Eye* are identical to those incorporated in *I/Eye*. By the same token, the source code of *I/Eye* created for Montevideo entails sequences from *Birds Eye* (Spinhoven van Oosten and Hölling, 2010). Now that *Birds Eye* has become dysfunctional and is nonexistent as an autonomous piece, a potential recovery of *Birds Eye* on the basis of these preserved sequences is feasible. Such an idea is not so bizarre if we realize the precious evidence that the artwork bears to the genesis of earlier computer-based art.

### Artwork as an archive?

There is something else to the entangled logic and reciprocal inclusions of bits and pieces of discrete artworks in Spinhoven van Oosten's oeuvre. Going beyond their sheer material occurrence, *Shot Across the Mind*, *Birds Eye* and *I/Eye* might be seen as mutually dependent on one another as drawing from a pool of the same archival origins and resources. While creating a new work, the artist engages with that pool always anew, weaving into it the recent technical achievements, knowledge, concepts, and solutions. From the perspective of a singular work, taking this idea further, *I/Eye* entails sequences from *Birds Eye* becoming a sort of a container of source code, that is, an artwork and an archive of documentation at the same time. Simultaneously self-inscribing and documenting, *I/Eye* enables future interventions by transgressing the generational boundaries and becoming the archive.

The confirmation of such a proposition might be seen in the example of *I/Eye*'s sequel. After receiving the *Prix de Rome*, the highest and oldest art award of the Rijksacademie in Amsterdam,

Spinhoven van Oosten conceived another, this time non-responsive installation that used black and white images of his eye, drawing from the pool of archival resources (Fig. 3).<sup>11</sup> The identity of these individual works, in my view, is not exclusive, but rather cumulative, rendering every sequel and precursor an essential part of the whole.

Nam June Paik's *Untitled (Piano, 1993)* from the Museum of Modern Art Painting and Sculpture Collection in New York is an audible closed-circuit multimedia installation that functions on a similar level of accumulation by recording its own generational development. It retains the versions of its own past while simultaneously referring to versions produced subsequently. *Untitled* consists of an upright piano, fifteen television sets, two cameras, two laser disc players (earlier U-matic decks), a floppy drive, and an electric light.<sup>12</sup> A similar artwork also exists in the Albright Knox Gallery's collection with a slightly different title – *Piano Piece* (1993) – and has taken shape as *Video Piano* (1999) at the Guy Pieters Gallery collection in Knokke Belgium. As in the case of *I/Eye*, the artist draws on the idea of a piano implementing various compilations of playback and display equipment that play various tunes in distinct spatial arrangements.<sup>13</sup>

Let us briefly look closer at the MoMA version of *Untitled*. Initially, the artwork was equipped with two consoles of U-matic players displayed on both sides of the piano. Shortly after its acquisition by MoMA in 1993, subject to obsolescence and authorized by Paik, the U-matic players were replaced with laser disc players. The co-existence of technical function and aesthetic significance of the playback equipment in this work is highly problematic for its conservation, at least in the traditional sense. Now, the time has come to find a newer technology to replace the laser disc players and the floppy discs from which the piano plays the show tunes. Based on elaborate research, MoMA's conservation solution for the floppy disk is based on the addition of a new device (an IQ Intelligent Player) next to the old one, which would take over the playback function.<sup>14</sup> Therefore, the old apparatus would be retained in its documentary value rendering the generational replaceability of the playback equipment superfluous and circumventing the consequences of the removal of the older elements.

Would this also apply to the laser disc players? At the time of writing this essay, MoMA was considering maintaining the appearance of *Untitled* with the old decks on either side, and favored a future solution presupposing the concealment of the new playback device (DVD or computer hard drive) from the viewer. This solution poses questions of honesty towards the viewer and renders the deactivated apparatus a relic. It also refers to the concept of changeability, which, reflecting the ruling conservation culture may entail a profound change evident in historical practice. Accordingly, the relic is deactivated yet retained for its aesthetic, sculptural value. To use a musical analogy, it might be said that the relic points to the artworks' historical instrumentalization. Such a solution is no less problematic than the replacement of the

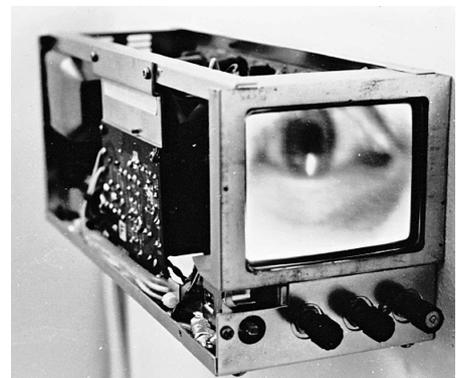


Figure 3. Prototype of the *I/Eye* submitted for the Prix de Rome, Rijksakademie. A slide retrieved from Spinhoven archive in Hengelo. Courtesy of the artist.

<sup>11</sup> Intriguingly, although the installation was entirely static, the viewer was led to believe it was responsive.

<sup>12</sup> *Untitled (Piano)* might be seen as a continuation of Paik's engagement with modified musical instruments inspired by the avant-grade composer John Cage. *Untitled* is a tribute to Cage who died in 1992.

<sup>13</sup> The number and arrangement of the spotlights, tripods, cables, monitors, the stool, camera, video and audio playback are variables.

<sup>14</sup> Documentation of the MoMA Conservation Department.

equipment, which, in the absence of the artist, faces the issue of the implementation of a new, state-of-the-art technology. *Untitled* also manifests the rationality and plausibility of narrowing down the thinking about a changeable work to the singularity of its institutional histories within which, and on the basis of which, it may be further reinterpreted and modified. *Untitled* demonstrates that the history of installation may be an institutional one – a history based on a singular source.

So it occurs to me that *Untitled* – just as *I/Eye* – collects traces of the generational shift of technology and reflects the cultural-economical context of the times in which it is being conserved. The recent transfer of the video data to archival Digibeta format and to uncompressed QuickTime files for exhibition purposes only reconfirms this.

Paik's *Untitled* and Spinhoven van Oosten's *I/Eye* are not the only examples of the accumulation of traces of an artwork's own trajectory. Marcel Duchamp's *Network of Stoppages* (1914) that entails the *Young Man and Girl in Spring* (1911) becomes an apt instance that illustrates how a traditional painting may, in a sense, 'archive' its strata. Furthermore, the many musealized forms of early conceptual art provide examples of such 'accumulative' artworks. For instance, the same logic seems to guide some of the executions of Sol LeWitt's wall drawings, of which each materialization expands and contributes to the knowledge that affects their future embodiments. Whereas LeWitt's drawings are often destroyed after temporary exhibitions, in its site-specificity, Joseph Kosuth's *Glass (one and three)* (1965),<sup>15</sup> is an accumulation of photographs of a sheet of glass leant against the wall as it moves through institutions and collections (the work consists of a sheet of glass leant against the wall, a photograph of this, and a glossary entry under the word "glass;" the changing exhibition context necessitates the creation of new photographs). The archival accretion of traces and manifestations in *Glass (one and three)* might be unlimited (Hölling, 2013a).

Artworks, following philosopher Martin Heidegger, do not simply disappear into the world but, rather, create their world (Heidegger, 1975). Refusing enclosure in a singular trajectory of a certain variant, these artworks may become archival entities that accumulate the past in the present, or, in other words, become dynamic archival intersections where past, present, and future interpenetrate.

### Variants, versions, variations<sup>16</sup>

Studying *I/Eye* forces us to go beyond singular institutional histories and to acknowledge its existence in a number of instantiations, versions, and variations. There are, simply put, many manifestations of *I/Eyes* that occur simultaneously at certain times, and consecutively at others. These trajectories are intrinsically bound with several museums, media institutions, and particular exhibitions.<sup>17</sup> The artist maintains that in the early stages the artwork existed in the form of at least two or three versions at the same time. At the moment when the first and the second versions were on display – at times concurrently – the artist kept the third at his studio for use as a test dummy. Spinhoven van Oosten used the hardware in more than one version of the work, exchanging it between versions, and manipulating the computer by replacing parts such as the monitor, graphic cards, and batteries interchangeably.

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<sup>15</sup> Sanneke Stigter (2013) traced the problems of the conservation of this work.

<sup>16</sup> This and the next section draw on my earlier article (Hölling, 2013b).

<sup>17</sup> The artwork was lent out by the NIMk for various exhibitions, including *The Second: Times Based Art from the Netherlands* (August – November 1998) at the Stedelijk Museum and subsequently traveled around the world. It was also included in *Dertig Jaar Nederlandse Videokunst* (January – March 2003), which was shown in Mexico, Taiwan, Japan, Budapest, and Prague, among other locations.



Figure 4. Bill Spinhoven van Oosten, *I/Eye*, 1993, responsive computer-based installation. Various shapes and spatial settings of the artwork in course of its various exhibitions in (clockwise, from upper right): (a) Städtisches Museum Gelsenkirchen, 1996 (*Kinetik und Interaktion. Multimediale Kunst aus den Niederlanden*); (b) DASA Dortmund, 1997 (*Short Cuts. Anschlüsse an den Körper*); (c) Inter Communication Center, Tokyo, 1998 (*The Second, Time Based Art from the Netherlands*); and (d) NIMk Amsterdam, 2003 (*Dertig jaar Nederlandse videokunst*). Courtesy of the Netherlands Media Art Institute.

The very first computer-type to be implemented was an Archimedes Acorn 410 home computer dating back to 1987, along with its operating system Acorn RISC OS, versions 3.0 to 6.0. The computer was programmed with the help of a BASIC V Assembler. Contrary to a number of its precursors, *I/Eye* was created as a mute installation, intended to be installed outdoors.

At the moment of the completion of this research in 2012, the version of *I/Eye* that was distributed by the NIMk was a black and white version comprising a Sony monitor placed on a black cubic plinth, a camera hidden in a black cylinder placed on the top of the monitor, and a playback apparatus, usually hidden inside the plinth. The monitor displayed five images of Bill's eye from an earlier installation. The camera interacted with the viewer, following his or her movements by registering changes in contrast within the 180-degree camera angle.

Dating back to the 1990s, there were at least four versions of *I/Eye* in existence, including its NIMk versions, and a number of variations, or, in the artist's words, "editions" (2010). Worth mentioning, among others, is a German version from 1997 – the so-called DASA version (Industrial Safety Association in Dortmund). *I/Eye* was acquired by DASA on the occasion of an exhibition entitled *Short Cuts: Anschlüsse an den Körper: ein Cross-over durch Kunst, Wissenschaft und Körperbilder* (August – October 1997). This version was characterized by the implementation of a color JVC monitor displaying a black and white image, and a later version of RISC OS (286 Acorn RISC, OS 3.7, 1992). DASA decided to conceal the entire apparatus behind a grey-painted chipboard casing. The only visible part of the installation remaining was the monitor screen. Due to technical problems, the artwork became the subject of a preservation project by Intermedia Art Institute (IMAI), Düsseldorf. In reference to the number of existing versions, the registration of *I/Eye* by IMAI in 2009 suggests that "there are

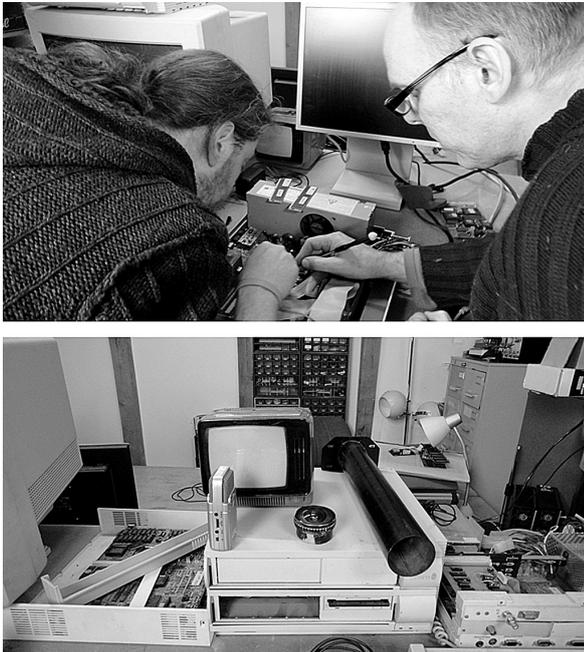


Figure 5. *I/Eye* (1993): Recovery project at the Spinhoven van Oosten's studio in Hengelo in 2011. (a) Spinhoven van Oosten and his assistant. (b) The recovered hardware. Courtesy of Hanna Hölling.

four editions of *I/Eye*: two with the artist, one at the NIMk and one at the DASA. It is unclear if all of them are the same” (Caianiello, 2009, p. 1). Interestingly, and highly relevant for the argument of institutional histories of artworks and archival accessibility, IMAI planned to recover the installation, taking the earlier DASA version from 1997 (rather than the 1993 version created for NIMk) as a starting point.

In 2004, Spinhoven van Oosten produced a version of the work with the eye in full color. This version used the image of an eye of a stranger and was presented as a multiple installation on a larger number of screens at the Library of Hengelo in The Netherlands. It is currently out of order.

*I/Eye* is an open-ended project in that Spinhoven van Oosten still continues to develop further versions of it. For instance, during one of the meetings for the research project in 2010, the artist introduced a test version of the artwork that implemented five images of a child's eye. Spinhoven van Oosten posits: “[*I/Eye*] was an installation at the beginning, then

it became a part of a computer, then the computer became interactive, and a part of it became a core version. [...] The camera and the monitor are separate parts, but I would like to make it more organic. [...] An organism, I mean like cells that have kind of similarity and together they create all new organisms” (Spinhoven van Oosten and Hölling, 2010). The latest instance of *I/Eye* is embodied in the project *LART* (2010), which focuses on the “the possibility to transform fluently from one classical installation into another” (Spinhoven van Oosten and Hölling 2010). According to Spinhoven van Oosten, over time, “*LART* will become an extremely expressive self-supporting entity, capable of managing its own sustainability and development” (Spinhoven van Oosten and Hölling, 2010). The project is based on the biologist James Grier Miller's living systems theory. In order to transfer *I/Eye*, Spinhoven van Oosten applies virtualization of the computer system to a web-based platform (Spinhoven van Oosten and Hölling, 2010).

### Three interpretations

Virtualization<sup>18</sup> plays a key role in the artistic development of the project, but also in thinking about the future existence of *I/Eye* in the purview of its time-sensitive technology, which is prone to obsolescence.

In 2010, on the occasion of the mentioned research project, NIMk decided to recover the initial functionality of *I/Eye* (Fig. 5). The seemingly logical circumstance of this decision was the selection of one from the many versions of the installation from its twenty-year lifespan. Efforts were concentrated on bringing back to life the version of *I/Eye* dating back to 1993, when it was acquired by NIMk, due to its historic significance and the fact that *I/Eye*'s initial behavior and

functionality has a strong relationship with the architecture of specific computer hardware. Unsurprisingly, the objective of the recovery of this version encountered complications. The early Panasonic monitor once displayed in the window of Montevideo was missing. The implementation of the Sony monitor that appeared on the occasion of the exhibition *The Second* in 2004, and from then on most preferred by the artist, already excluded this strategy as a revival of the initial version. Spinhoven van Oosten maintained that the installation retained its look and feel only by being displayed on a cathode ray tube monitor due to the specific texture of the image. Gradually, the return to the early version of *I/Eye* unraveled as being illusory, at least as far as the hardware was concerned. This became even clearer when the historical Acorn Archimedes 410 dating back to 1987 was no longer recoverable due to the obsolescence of its components. Furthermore, numerous modifications and additions to the installation were made and removed over time, which complicated the return to the original configuration of the computer. For this reason, a later and better-maintained Acorn RISC PC dating to 1992 was employed (Fig. 6). The original program was booted from a floppy disk. To recover the functionality of the old version, a newer motherboard was assembled from second-hand bits and pieces; the source code needed to be migrated. The oscillator originally used to accelerate the processor was no longer necessary with the newer, faster processor. The original camera was no longer available. The digitizer had to be replaced and, finally, in order to ensure proper functionality, an emulation of the machine code was performed. The synchronization of the image timings posed challenges. By the end, the physical appearance of the activated artwork and its technical functions resembled, yet was not identical to, the version from 1993. The emulation and migration of *I/Eye* went hand in hand, as it were. One could say that the endeavor was an attempt to recover and present a media artwork with the aid of archaeological equipment.

Having completed the apparent “recovery” of the historic *I/Eye*, and triggered by the obvious incompatibility of the components of the artwork with time, the next step in the development of preservation strategies for *I/Eye* was the isolation of the entire system and its transplantation to a different environment by means of virtualization. The artist performed the virtualization of the recovered Acorn RISC PC to a Microsoft Windows operating system with the help of a virtual machine. The latter is an isolated software container that can run its own operating systems and applications, imitating the function of a physical computer. The performance and behavior of the initial, historic version of *I/Eye* were maintained. The emulation of the visible hardware equipment rendered the aesthetic appearance of the installation similar to its initial version.



Figure 6. The inside of Spinhoven van Oosten's *I/Eye* (1993): a 2011 refurbished version of an Archimedes Acorn computer dating to 1992. Courtesy of Hanna Hölling.

<sup>18</sup> Depending on the profile of the specialists and their background (programmers, conservators, etc.), the terms virtualization, emulation, migration and reinterpretation are used interchangeably. At times the term *emulation* is used interchangeably with the term *virtualization*, meaning the process of extracting the operating system, the source code, and files to a new environment. Furthermore, there is no specific differentiation between the vocabulary applied to the purely carrier, material-based aspects of the artwork and its encoded, digital content. For example, the process of rewriting a code in a different language may entail a radical strategy of *reinterpretation*. Alternatively, the migration of code to enable the operability of a newer application, operating system, hardware, or all three, implies less severity to an artwork's integrity in terms of honoring its initial condition.



Figure 7. Bill Spinhoven van Oosten, *I/Eye*, 1993/2011, responsive computer-based installation. Left side: The refurbished version of the installation from 1993, and (Right side) its virtualized form during the reinstallation at NIMk on February 24, 2011. Courtesy of Hanna Hölling.

This version, along with the recovered *I/Eye* was presented side by side on the occasion of the symposium *To Transform or To Transfer* in February 2011 (Fig.7).

Lastly, although not realized within the time span of the research project, Spinhoven van Oosten conceived of a fully virtualized version of *I/Eye*, operating solely on the web browser. This strategy omits the immediate physical dependency on computer hardware. It is solely the behavior of the artwork that is being maintained in a form close to the initial version. Most critical, however, is the aspect characteristic for many other computer and net-based artworks, namely the achievement of a certain form of independence from a physical carrier, and, theoretically, from a number of system restrictions and market de-

pendencies in a broader sense. The implications of this type of virtualization provoke a radical ontological shift, which relates both to the physical art object, which ceases to exist, and to time, which implies intermittent access rather than continuous presence. This parallels the shift that might be observed in music and film, and their transfer from physical carriers to distributed records.

### Was it conservation?

It is worthwhile, at this point, to reflect on the outcomes of the “conservation” performed. The project, so it seems, rather than recovering the artwork’s initial version or arresting it in a sort of a final stage, contributed to a genesis of further variants of *I/Eye*. On the basis of the early exhibition of *I/Eye* at Montevideo, narratives of eye witnesses, gallery’s technicians, curators and registrars, and including an enormous investment on the part of the artist, the artwork appeared anew not only in one, but in three variants (recovery, virtualization, and a web-based form, yet to be realized). Although the project’s contribution to the creative solving of a conservation problem cannot be prized enough, what interests me here is whether, if at all, we can still speak of the *conservation* of the work?

Although intuitively one could still believe that the artwork’s identity has been maintained, something disturbing becomes apparent when we contemplate *I/Eye*’s trajectory. The problem arises with the very fact that, as a changeable artwork, *I/Eye* refuses to be reduced to a singular condition or a state compliant with the ethos of conserving traditional objects. When it comes to the conservation of, for instance, a painting or a sculpture, conservation professionals act interpretatively to stipulate the preferred “condition” of the work (often designated as the “original condition”). Although such an attempt at imposing “our own notion of timelessness” (Albano 1996, p.183) is not unproblematic even with regard to traditional art, computer-based art such as *I/Eye* explicates the sheer impossibility to reduce an artwork in constant transition to one singular state, an “original condition.”

This impossibility of the return to an original or a previous condition, which somewhat evokes the modernist myth of originality, reveals a paradox. It questions the principle of decay and aging (nothing can ever become younger) and exposes the lack of an appropriate conception of time in conservation (Hölling 2013c, p. 257). In the words of Heidegger: “World-withdrawal and world-decay can never be undone. The works are no longer the same as they once were. It is they themselves, to be sure, that we encounter there, but they themselves are gone by” (Heidegger 1975, p. 40).<sup>19</sup> So the problem is twofold: it is the problem of defining how, rather than what, the artwork was in the world. Consequently, to return something to its original condition would mean to return both the thing, and the world surrounding it to some kind of an imaginary past. But even if the project to recover perfectly an earlier version of the work succeeded (although I have demonstrated otherwise), its context and characteristics (wit and freshness) would have become something else. It is not only the object that succumbs to entropy and technological obsolescence, but also the world surrounding it moves on – there are always new surveillance techniques and new display technologies that relativize once poignant ideas. The human eye has become acquainted with, and tired of, the ever-present “Big Brother,” and the gaze of the eye in the artwork might not be as startling as it was in the 1990s.

Unlike traditional artworks such as painting or sculpture, which are subject to entropy and decay (and which might be defined as “slow art” due to their passive relation to time), *I/Eye* is a sort of “fast art” actively involved in being *with* and *in* time (Hölling, 2013a, p. 189). This not only means that *I/Eye* maintains different relationships with changing temporal conditions, but also that it generates variants and versions that respond to the shift of technologies and applications. Through this, the artwork refuses conventional categorizations and taxonomies. Especially in technology-based media, conservation becomes a process deeply engaged with the manipulation of objects’ temporalities (actualizing them to present conditions and technologies, or metaphorically “rewinding” time). Here, conservation can be conceived of as a temporal translation of changeable artworks.

But then, perhaps, it is time to rethink profoundly the tenets of traditional conservation and move towards more open horizons of interpretation and re-creation. Other than traditional media, in the case of which change was often negatively charged and conservation’s very nature was to act against it, the changeable artworks that have emerged since the early implementation of computation as an artistic means impose on us their own sense of continuation. Perhaps the continuation of computer-based media and digital heritage is only feasible under the premise of the acceptance of change within the limits of a work’s identity established by the ruling conservation and curatorial cultures.

### Extended collaborations

What is the role of the main actors in performing conservation? Loaded with constraints, traditional conservation ethics prohibited the conservator from entering the “restricted sphere of the creative process” (Brandi, 2005, p. 62). But the engagement with *I/Eye* resulted in the questioning of the assignment of traditional roles. In particular, Spinhoven van Oosten’s role as a creator involved in the maintenance of his artwork’s life – a sort of its conservation – transformed the traditional division of roles. This not only overthrows the paradigm of a “finished” work, but also poses the question of whether respect for the artist’s evolving intentions and the inclusion of

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<sup>19</sup> Heidegger distinguishes the work-being (artworks as standing-in-themselves) from the object-being and suggests that it is only the object-being of an artwork that the art industry, and conservators, may access.

intentions of all actors intrinsic to the project (conservators and curators) should be included in thinking about the conservation ethos of intentionality. Should not conservation's codes of ethics be extended in accordance with the continuing and collaborative creative process?

Like craftsmen in centuries past, the contemporary media artist is also a specialist in information technology, and acts as a restorer of his or her own artistic production. But what about the involvement of a conservator? For a conservator, bearing witness to the artist's (re-)engagement may, over time, not be enough. By extending the notion of collaborations and trespassing on the boundaries of traditional roles, the creative involvement of a conservator requires subtle and skillful maneuvering and negotiation in the zones between technological know-how, creativity, and fidelity to professional ethics. Moreover, the engagement of a conservator with the material and the immaterial sphere of the archive on the basis of which decisions are made renders his or her activity highly creative.

### **Creative conservation**

Creative approaches in conservation are not exclusive to conservation's engagement with recent media, such as *I/Eye*. Rather than being an invention of post-modernity, conservation has always creatively invested in artworks and objects. Transfers of wall and panel paintings, examples of *anastilosis* and ethnographic conservations, as well as creative interpreting and actualizing artworks to the temporal and cultural context of the time in the conservation of installation art are among examples. To paraphrase Bruno Latour's famous postulate – we have always, in that sense, been creative. (Latour, 1993) It may be said that the practices of multimedia installation taught conservation to express its creative side with more confidence. In the words of David Lowenthal: "Nothing ever made has been left untouched, nothing ever made remains immutable; yet these facts should not distress but emancipate us ... since to appreciate the past is to transform it" (Lowenthal in Muñoz Viñas, 2004, p. 111).

I suggest that conservation actively and creatively invests in the history of artworks. The productive acknowledgment of the creative power of conservation may contribute to the emancipation of the field. This emancipation will ultimately free conservation from the habit of latching onto new developments in the arts and curatorial practice. "Conservators must be seen as a competing and complementary authorial (or editorial) agency, occupying a place in the work," according to Paul Eggert. "This has an effect on how we view the concept of the work and how we understand each individual one" (Eggert, 2009, p. 112)

### **The archival turn**

The persistence of change in computer-based artworks such as *I/Eye* leads to a rethinking of the very notion of conservation and its pursuit. However, the question still remains how to ensure the continuity of such artworks without having to submit to notions of fixity and stasis. The solution, in my view, lies in the conception of the archive.

In its physical and virtual sphere, the archive takes on an active role in harboring and creating identity, and maintaining the continuity of works of art. The virtual sphere of the archive entails tacit knowledge, skill, and memory of everyone involved in the process of shaping the work. Conversely, its physical sphere contains all documents, leftovers and tangible materials produced by the artwork. The research and recovery process of *I/Eye* exemplifies how the tacit knowledge, skill, and memory of all persons involved became actualized and how the work became materialized.

The passage from the virtual to the actual takes place by means of an actualization (Deleuze, 1991, p. 97) of virtual potentialities of the archive (Hölling, 2013a, p. 243). The archival actualization follows the rules of difference and creation, rather than resemblance, which, according to the philosopher Gilles Deleuze, who, in turn, follows Henri Bergson, would be linked with the limitation of somewhat already known possibilities (Deleuze, 1991, p. 97). The actualization will never outperform the potentiality involved in the virtual sphere of the archive. In other words, the potential for many different actualizations is inherent to the artwork's virtual quality. Additionally, what we perceive as the changeability of artworks may become their potentiality to differentiation within their virtual quality embodied in the process of transformation from the virtual to the actual.

We may also say that the archive "contains" the potentiality for the transformation of changeable artworks such as *I/Eye*. Heterogeneous, partial and fragmentary, and dependent on accessibility, the archive determines the shape of artworks – decisions about the future embodiment of artworks are made on the basis of the archive. The DASA version of *I/Eye* implemented the physical materials, tacit knowledge, and skills from locally available resources. Thus its appearance was different from its NIMk version, which, in turn, referred to different resources and employed distinct practices. Clearly, the archive does not reduce an existent object to a series of its past manifestations; it is not a static domain of records – that of an artworks' changeability in retrospect – but a dynamic entity directed towards the future. New iterations of an artwork produced from the archive enter the archive and transform it; thus the formation of the archive is itself recursive. The archive becomes a condition of possibility for the artwork's change; it can never be reduced to a given series of manifestations, because each manifestation is bound to a continuously changing subject.

In the conservation of computer and technology-based installations, and with possible implications for conservation in general, the conservator's role is that of maintaining the work's identity through the interpretation and actualization of the archive. This actualization is compliant with the set of values characteristic to the ruling conventions and culture of conservation. With their hieratical system of values, these cultures selectively set the discursive practice – the boundaries and limits of what, in a Foucauldian sense, can be said or done. This has one more consequence: researching the archive, its traces, and the ways in which the data, documents, tacit knowledge, and skill were recovered, implemented, and manipulated in the past may provide a picture of the historical condition that governed the archival realm – its historical a priori.<sup>20</sup>

The conservation of these art forms is henceforth no longer the return to a past 'original state,' or an occupation with the distant past, but rather, an active and creative 'presencing' of artworks. Conservation also signifies the creation of the archive that will guide future iterations.

Because changeability shifts the discourse to the dimension of time and the material of artworks is temporalized, we may agree that the archive that is temporal and that "contains" time allows us to conceive of a certain kind of *temporal materiality* of artworks. In other words, the archive may be regarded as a *source* of the artwork's materiality.

The concept of an archive on the basis of which artworks are actualized has one further consequence. It is no longer the artist that exclusively shapes the identity of an artwork, but rather the archive on the basis of which decisions are made. The *archival turn*, I suggest, relativizes the weight of the intentionality of the artist, making space for the creative aspect of actualization

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<sup>20</sup> Michael Foucault's historical a priori is a technical term used in his *Archaeology of Knowledge* (1976) to describe the collection of material traces left behind by a historical period and culture. From this collection of traces, one can deduce the episteme of the period.

and the involvement of the others (conservators, curators, and technicians), rendering the artwork and its archive realms of social investment.

The vectors of the archive point in both directions – to the future, as well as to the past, generating iterations of *I/Eye* based on what it already entails, and what it allows for. The archive is both of time and of material, and yet in its potentiality for the artwork's future actualizations, it transcends the linear temporality of progress and development, situating all versions of a work on a temporary equivalent time structure.

In this essay, I have proposed a new way of thinking about the persistence of change – change that originates and contributes to the archival domain. I have suggested that in our post-modern – or post-internet – times, conservation needs to take other virtues of the objects into consideration than only the purely material and move towards the affirmation of continuity through change. Indeed, the objects, either recovered, reinstalled, or actualized, are never the same, and the search for authenticity or integrity needs to be replaced by the maintenance and defining limits of identity. We might thus, once again, be inclined to agree with Lowenthal, who states that “[...] material preservation is thus at bottom an illusion. [...] What matters in preservation may be the continuity of form, of substance, of texture, of colour...” (Lowenthal, 1988, p. 141). Compliant with such a sense of continuity, in the world of conservation, *I/Eye's* has just begun to instigate change.

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of Paik's *Fluxfilm No.1* (in press, Bard Graduate Center New York/The University of Chicago Press) accompanies eponymous exhibition at the Bard Graduate Center Focus Gallery (September 2015 – January 2016). A monograph *Paik's Virtual Archive: Time, Change, and Materiality in Media Art* is under contract by the University of California Press (exp. publ. 2016).

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