



New Media Art Practices and Conservation

Professor Jeffrey Shaw

ABSTRACT

International contemporary art practice over the last thirty years has increasingly been researching and utilizing the new media technologies, ranging from video to interactive computer based installations and internet applications. Such artworks are conjoined with the rapid cycles of change and improvement that are a feature of these technologies, and as a consequence are subject to seemingly insuperable problems of maintenance and conservation both in terms of their software and hardware architectures. As an artist engaged with new media over this period, as well as having worked for ten years in Europe's first and largest new media museum – the ZKM in Karlsruhe, Germany - I have had direct experience of these maintenance challenges and have formulated conservation and archival strategies that can be undertaken by individuals and museums to effectively ensure the long term durability of media art works. These strategies address the

question of the inviolability of the original and the sufficiency of artist directed digital cloning as a means of allowing the artwork to migrate to new hardware and software platforms as the older ones fall into inoperative obsolescence. They also examine the differentiation between the contemporary and long term cultural signification of a media art work, given that transient techno-social conditions may often be integral to the experience and connotation of such a work. In my presentation I shall elucidate these issues with reference to my own artworks as applicable case studies.

The traditional activity of art has been the representation of reality; manipulating materials in an analogue manner to create tangible reformulations of our experiences and desires. Now with the mechanisms of the digital technologies, the artwork can itself become a simulation of reality; an immaterial digital configuration encompassing synthetic spaces that we

can literally enter. Here the views are no longer observer in a museum of artefacts, rather they are travellers and discoverers in latent spaces of sensitive information, whose aesthetics are embodied both in the coordinates of their immaterial formations and in the scenarios of their interactively inveigled manifestations.

The central role of a traditional museum is to be space of display and conservation, so that a culture can maintain a memory of what has been achieved in its creative research for meaning and self understanding. But in thinking about the typical kinds of artefacts stored in such museums we should not confuse the identity of those traditional media with the actual identity and practice of art itself. Art is a broad mechanism of discourse that may use any medium to embody itself, and I believe that it is specially effective and relevant when it adopts and transforms those media that are contemporary in society. Since the 1950s the rapid and central evolution of the digital technologies has increasingly constituted one of the most exciting supports for an innovative and adventurous contemporary art practice that has worldwide expression. But as a support, these technologies also pose challenging new conservation problems if we wish to maintain an operational history of these new kinds of art practice.

In my dealings with art historians and museum curators I have experienced recurring misunderstandings in their attitudes to the long-term value of media art. Typical, is the mistaken belief that the media artwork is an expression of the machinery with which it has been made, that as its technology becomes outdated or obsolete, the artwork itself becomes subject to the same devaluation. This misconception gives many museum directors a convenient excuse neither to purchase nor conserve media art works. It betrays their failure to comprehend the real nature of these works and the role of the technologies used in their making. Another hurdle for media artworks is the real problems associated with the maintenance of their technical systems

that are subject to eventual failure and obsolescence. A solution, I believe, is that media artworks have to find a way to migrate from one technological platform to another to keep them 'alive'. The way to do this is via the conservation of the work's software, its description and functionality, rather than its material shell, and the acceptance that if we can exactly reconstruct the work's appearance and functionality, then the medium in which that reconstruction is embodied is not necessarily a relevant issue. For museums and collectors who venerate the artwork's original support, such a 'reconstructive' approach to conservation is controversial. But this departure from traditional attitudes is the only way to get over the extremely costly, if not hopeless task of trying to keep obsolete technologies functional. This approach also makes explicit what the new skill sets and the science of conservation will be for the next generation of media art 'restorers'. These are not the skill-sets associated with the restoration of paintings and sculptures, but rather those coming out of computer science and electro-mechanical engineering.

The rapid evolution of new resources, and equally rapid obsolescence of older resources, makes sensible such a strategy of migration of the original application from older to newer platforms. The challenge here is that these new hardware conditions should not alter the original look and feel of the work, unless the artist desires the alterations that the newer technologies might offer. In other words, the newer platforms usually must be designed and programmed to simulate/replicate the look and feel of the work as it was produced on the older platform. Opportunely, it is the actual digital nature of the media artwork that lends itself to replication, migration and reconstruction without any quality loss or formal alteration of its appearance or content. Compare this facility with the futility of trying to replicate the analogue brush strokes of a Rembrandt.

The reconstruction I did in 1997 of my interactive computer based artwork *Points*

of View gives valuable insights into such a procedure of platform migration. Created in 1983 using an Apple II computer with custom developed software and custom made audio and interaction devices, all of this interactive artwork's components had become technologically obsolete by 1997. So rather than try to reassemble these components into what would now be a fragile and difficult to maintain system, I decided to reconstruct the whole artwork in a more current technological environment, while respecting the exact look and feel of the original. In practice, this meant dealing with a number of issues. The old Apple II computer's low screen resolution and slow frame rate had to be simulated on a new PC's higher resolution and faster graphics system. I want to stress here how important it was to maintain these 'low-performance' characteristics of the original computer: its low screen resolution caused the images to have 'jagged' lines that gave the impression of being animated when they moved, while the slow frame rate created a special stop motion effect. It would have been a serious mistake to adopt the PC's higher resolution and frame rate because then these original features, fundamental to the work's aesthetic identity, would have been lost. The original software was a custom application written in Forth for the Apple II CPU, so instead of the difficulties of trying to revive and port this idiosyncratic software, it turned out to be easier and cheaper to rewrite the whole application in C and OPEN GL.

The custom designed joysticks of the original work used analogue optical components that were very difficult to calibrate. The reconstructed work has the identical exterior design and operational functionality of the original joysticks, but the technology is now entirely digital and constitutes a more accurate and robust solution. The sixteen channel audio system of the original used a rack of auto-reverse cassette decks, which was a far from fault tolerant machine and the magnetic tapes degraded over time. In the reconstructed work the original recordings have been digitised and are now played back from the computer's hard disc, while

the mixing of the sixteen channels is now handled in software. So in almost every respect, the reconstructed work is new and more robust in terms of its hardware and software technologies, and yet the complete aesthetic and functional integrity of the original work has been faithfully emulated. This was possible because an exact description and the custom components of the original work still existed: the drawings, photographs, the audio recordings, and the user interface devices. This allowed new programmers and engineers to fully grasp and faithfully re-implement the whole work.

The reconstruction methodology for *Points of View* is a useful conservation paradigm for almost any computer-based work. Even the complete obsolescence of the original hardware and software platforms does not seem to prevent a faithful reconstruction of the work, as long as an appropriately detailed description of the original is conserved for hardware and software engineers to work with. On the other hand, there is the possibility that the newer technological platforms become so fundamentally different that a completely faithful emulation may be difficult to achieve. For example, the original version of *Points of View* used an old monochrome video projector, but now all video projectors are colour and their black and white images do not look exactly the same as those coming from a purely monochrome projector. But I found this difference acceptable, and this indicates that the artist needs to be consulted when newer technologies are to be used that deviate in one way or another from earlier ones and which might therefore affect the look and/or feel of the work. Thus an explicit aspect of the documentation of a media artwork would be documents and/or interviews with the creator(s) where permissible variables could be outlined that would be relevant to future iterations of the reconstruction-conservation process.

Newer hardware and software platforms also offer the artist the opportunity to change and/or 'improve' the original work. For example the original version of my

installation *The Legible City* was actually hampered by the limited performance of the computers that were available in 1989 when I first presented this work. So over the next few years as these graphics computers got better I did make software changes that I felt improved the work. For example, I could add sky and ground textures and increase the graphics frame rate from twelve to 25 frames per second. But by 1993, I had arrived at a point where I considered the work completely finished, and while computers have continued to increase in performance and capability since then, this technological development did not create an obligation for me to make any further changes to the work.

Because an often-necessary aspect of media art is technological innovation, the seduction or revulsion caused by such novelties may seem to compromise the artistic integrity of the work. For the casual viewer the technological features often take precedence over the artistic aspects embodied by these features. So the media artist has a difficult relationship with technology he uses; it both facilitates and constrains his art. Until the mid 1980s there was a privileged time for media art because during that formative period it was a cultural fringe phenomenon. Its artists were working in an opportune vacuum with not much context other than their own convictions and goals. Today, media art has become a popular phenomenon and media artists must participate in a larger discourse and deal with the 'noise' of social labelling, cultural theory, curatorial circumscription and commercial interests. Still, I feel that one of the great attractions of this digital medium that is always changing is that it might offer artists the means for a permanently innovative art practice, always transcending, or at least one step ahead of its cultural interpretation and incorporation. The (short lived) euphoria around Net.Art was certainly predicated on the radical autonomy (as well as novelty) of its modes of distribution and consumption. It was an art practice that for a while completely circumvented the art world's traditional *modus operandi*. On the other hand such a 'speed' of change may

obviate the processes of a craft that often needs time and numerous iterations before it can mature into 'timeless' significance. While these are the variable concerns of the practitioner, the challenges of media art conservation will remain constant (unless from the outset the artist's intention is an ephemeral gesture that is destined to live brightly in the moment and then be extinguished by techno-obsolescence. For example, the posters I made in 1966 with Tjebbe van Tijen for our installation *Continuous Sound and Image Moments* were purposefully printed using an old-fashioned architectural plan copier, so that when hung up and exposed to the sun's ultraviolet rays, their imagery gradually faded into obscurity).

Today's media art offers a large spectrum of perceptual experiences, including important attempts to forge new levels of heightened perception based on new methods of delivering information. On a fundamental level the digital media technologies are computational machineries working with highly abstracted data streams. Such data streams can be disengaged from their analogue real world sources and then used to constitute whatever other audiovisual forms the artists' wishes. One could for instance take the data from a football game or the weather and use it to make a painting or a cocktail mix (though we didn't need to wait for digital technology to fulfil such hybrid desires; Yves Klein had already strapped a canvas to the front of his car and 'painted' it with the imprint of insects as he drove from Paris to Marseille). This interchangeability and interoperability of all world-derived data is one of the most radical capabilities of the media technologies. The chemistry/alchemy gets even more interesting when we add the infinite variety of data that is algorithmically coded and synthetically generated. Any serious approach to conservation of media art has to grapple with the internally immaterial, almost ineffable dimension of such creations. But at the same time the conservator takes custody of the tangible lines of code that underlie them. These

codes are transportable and reproducible and so, like musical scores, will be able to be 'performed' and 're-interpreted' over and over again in coming times by ever evolving and ever changing computational systems. As in music there will be those who will be always searching for the most exact representation of the (sooner or later inscrutable) original and others, who will simply present (rediscover) the work 'anew' in contemporary technological and cultural contexts.

AUTHOR BIOGRAPHY

Jeffrey Shaw has been a leading figure in new media art since its emergence from the performance, expanded cinema and installation paradigms of the 1960's to its present day technology-informed and virtualised forms. He has pioneered and set benchmarks for the creative use of digital media technologies in the fields of virtual and augmented reality, immersive visualisation environments, navigable cinematic systems, algorithmic software techniques, and interactive narrative. Shaw is recipient of the prestigious Australian Research Council Federation Fellowship. He is also director of international projects at ZKM Institute for Visual Media and visiting professor at the University of Art and Media, Karlsruhe.

Prof. Jeffrey Shaw

Executive Director

iCinema

Centre for Interactive Cinema Research

University of New South Wales

Sydney

www.icinema.unsw.edu.au