Conservation of Media Art & Other Complex Works

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Basic problems with technology-based material
How are new works even more problematic?
Problems caused by endlessly re-formatting
Issues with New Works—what are we trying to represent/save?
Efforts to watch (projects, standards)
Paradigm shifts needed

Today’s Zeit Magazine--Metropolis

Metropolis—Conservation without Access?

• From Paula Felix-Didier
  • Sent: Friday, June 27, 2008 3:53 pm
  • Subject: miapers don’t fall far from the tree

Hola Howard,

I just came back from a very nice cheese and wine dinner with Herr M. Koerber, in his Berlin apartment. A German magazine brought me here as part of the story they are publishing next week on our Metropolis finding. I arrived here two days ago and I went directly from the airport to the Kinotheek to show my DVD to Koerber, Reiner Rotha, and the people from the Murnau Foundation. Yesterday, I went to Munich and showed it to Patalas. A few jaws dropped and everybody is very excited, but this is not why I’m writing to you.

The thing is that throughout the whole business people kept complimenting me on my generosity, and how great and rare it is that I decided to share this so openly, bah, blah, blah. And I couldn’t see why this was such a big deal. For me, it came naturally, and it was the obvious thing to do. And I couldn’t help thinking that if something like this were more common, we would be further along in this business than we are today.

For me, it came naturally, and it was the obvious thing to do, and I couldn’t help thinking that if something like this were more common, we would be further along in this business than we are today. So I just wanted to let you know that you are sending good seeds out to the archiving world, and that we are making a difference and people are noticing it. I just felt I needed to tell you this and give credit where credit is due.

Other than that, everything is going well, except that I’m starting to deal with the Murnau Foundation. They didn’t believe me at first (probably thought I didn’t know what I was talking about), but now that they have proof, they are getting proprietary and are claiming copyright on the new images I have. This is very alarming and disappointing, but I’ll have to learn how to negotiate something for my little museum. We’ll see how it goes.

Hope your things are going fine, wherever in the globe you are at the moment.

unbeso

Paula
Paula Felix-Didier
Directora, Museo del Cine de Buenos Aires

A/V Materials are part of Communications history

• A history where technology has permitted us to build “carriers” to encapsulate and save forms of communications
  - Paper and Books to capture oral legends & tales
  - Photographic film & paper to capture images
  - Motion picture film to capture what our eyes see
  - Audio wax and wire recordings to capture what our ears hear
  - Audio and video tapes
  - CDs and DVDs

Communications Technologies: Carriers & Content (background)

• Throughout history, the content produced was intimately bound up with a particular carrier
  - Papyrus scrolls, clay tablets, codex
  - Only reproduction was hand-copying (monks with religious texts)
• Copying technologies (printing press, photography, film/video, photocopying) still bound content to carrier, but introduced the idea of “lack of uniqueness” and sometimes distinguished between a master “original” (negatives) and copies
Communications Technologies:
Carriers & Content (lessons for today)

- Many types of institutions (libraries, some archives) only collect mass-produced copies (books, films, videos, DVDs), they do NOT collect the original materials (master copies, negatives, etc.).
- In the digital world, most originals are absolutely identical to all copies. Even when these are put onto different carriers (hard disk, digital tape, CD, DVD), all copies are identical to original (unless specifically made lower quality)
- For those mentioned above, there is no notion of “uniqueness”, nor of “original”
  - For those institutions that collect material that was used to construct an “original” (manuscripts, negatives, inter-negatives), the production elements used to construct the “original” still maintain some uniqueness
- Not being able to identify “originals” or “uniqueness” bothers conservators

Both A/V and Digital Preservation causes a shift in Conservation thinking

Kungl Biblioteket-Conservation storage

Very different concerns than for Digital Storage
Communications Technologies: Carriers & Content (cautions)

In this context, “carrier” means a container permanently bound to the contents (a book, videocassette, film, tape)

• In the A/V world, we often distribute identical content through many different carriers
  – Vinyl, cassette tape, CD, iPod
  – Nitrate film to safety film
  – 35mm film, 16mm film, video formats, DVD
  – 2” video, 1” video, U-Matic, Beta, VHS
• Sometimes the content is identical with each carrier, and sometimes it is shrunk or compressed for some carriers
• Managers of really unique content (production elements) have different vocabularies and different needs than managers of mass-produced content.

Many types of difficult materials

• Moving Images
• Sound
• Websites
• CAD
• GIS
• Electronic Art
• …
Difficult Materials become obsolete relatively quickly

- The physical carriers decay or become obsolete
- The technology required to view the carriers changes frequently
- The encoding formats needed to decode the content shift

Obsolete Carriers

Old Video Formats (www.vidipax.com)

Kodak stops making some films
Even conventional Moving Image Carriers are highly unstable, and an enormous # have already disappeared

- 50% of all titles produced before 1950 have vanished (approximate number as of late 1970s)
- This reflects full-length features; survival rates are much lower for other types (studio newreels, shorts, docs, independent, …), and these “orphans” are particularly in peril
- Fewer than 20% of features from 1920s survive in complete form; survival rates of 1910s is <10% (and none of these are negatives)


How are multimedia and electronic works even more problematic?

Conventional Works

- Manuscripts, books, paintings, sculpture
- We have a good sense of what the original object is
- Objective is to make object itself endure (temperature/humidity control, chemicals/pigments/fibers/adhesives, …)
- Goal is to keep object as close as possible to original state (though occasionally contravention arises over whether to let aging show)
Electronic Media

- Video, audio, digital, new media, websites, blogs, … Often difficult to determine what the original object is
- Difficult to make the original object endure (magnetic particle deterioration, warping, etc.)
- Even if we could make the original object endure, we wouldn’t have the infrastructure to view it in the future
- Need to develop a paradigm shift from preserving the original object to preserving info content
- Need to pay more attention to maintaining authenticity and replicating user experience

Electronic Art in general is not like canvas paintings

- May include
  - Moving image materials
  - Multimedia
  - Interactive programs (including hypertext novels & games)
  - Computer generated art
- Most electronic art works share some common characteristics with other “strange” works like
  - Performance Art
  - Conceptual Art
  - Site-specific installations
  - Experiential Art

The Short Life of Digital Info: Digital Longevity Problems (details tomorrow)

- Disappearing Information
- The Viewing Problem
- The Scrambling Problem
- The Inter-relation Problem
- The Custodial Problem
- The Translation Problem

The Viewing Problem

- Digital Info requires a whole infrastructure to view it
- Each piece of that infrastructure is changing at an incredibly rapid rate
- How can we ever hope to deal with all the permutations and combinations

The Translation Problem

- Content translated into new delivery devices changes meaning
  - A photo vs. a painting
  - If Info is produced originally in digital form in one encoded format, will it be the same when translated into another format?
  - Behaviors

Thinking of the Future (1/2)

- Screens will be different resolutions and different aspect ratios
- CRTs won’t exist
- A decade or 2 from now, today’s user interfaces will look like arrow-key navigation looks like today
Screen Formats

Responding to serious Longevity Problems

▷ Previous formats required little ongoing intervention (remote storage facilities, Iron Mtn); digital formats require intense ongoing management

▷ Need for:
  - Preservation Repositories
  - Preservation Metadata

Issues with new works -

- What is the work?
- Is there an “original” to preserve?
- Complexity of rich media
- Difficulty of making the work last

LeWitt: Wall Drawing 340

Installing LeWitt

LeWitt Install Directions
LeWitt: What do we save?

- The installation?
- Documentation of the Installation?
- The directions for the Installation?
- What is the goal of our documentation and preservation?

Born-digital works

- Where is the “original”?

Born-digital works are both easier and harder to preserve than analog works

- + With a born-digital work, we don’t have to worry so much about the “original artifact” (there really isn’t one)
- - We know that digital works face a whole range of obsolescence problems, so they must be reformatted at least once per decade

ECI - Hole in Space (both)

ECI - 84-locations

ECI - 84-Community Memory
ECI - 84-kids

ECI - 84-MOCA

Gates Project 1992 (3D flyover)

Gates Project 1992 (3D ground)

Gates Project 1992 (plan)

Gates Project 1992 (time-slices)
New Opportunities--Digital Cameras

GPS Metadata in Camera

Giving images a Place (google)

Giving images a Place (google)

Giving images a Place (google)

Giving images a Place (google)
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Complexity of Rich Media

- Works often have artistic nature (including video games)
- Enormous number of elements can, at times, be very important to preserve (pacing, original artifact, elements used to construct the artifact)
- Too complex to save every one of these aspects for every type of material
- Importance of saving documentation

Special Characteristics of Electronic Works

- What Really is the Work?
- Disappearing software
- Enormous number of elements can, at times, be very important to preserve (randomness, interactivity, pacing, color, format, original artifact, elements used to construct the artifact)
- Pieces and Boundaries
- Recontextualization (Postmodernism)—which rendition to save?
- Dynamic & Lack of Fixity (evolving works)
- Interactivity
- Historical context
- Difficulty of authentication over time

Management & Preservation: What are we trying to do?

- Show the work the way people saw and interacted with it when it was first created (may be impossible in the past, the artifact and how one interacted with it didn’t change much, so preservation and documentation was relatively straightforward)
- Show documentation of the work and people interacting with it when it was first created
- Reinstall/Recreate/Reinact the work

Managed Environment

- More than temperature & humidity control
- Periodic monitoring of the works
- Periodic monitoring of the technical environment for viewing the works (software, systems, hardware)
- Trusted repositories
Storage Media

- Removable media (like CDs) is not a long-term answer
- The long-term answer requires ongoing management, and involves regular migration or emulation. This solution is only viable with storage on spinning disks-

Consumers replace their CDs with a hard disk (& so should you)

Plain DVDs are no longer the latest format

Standards for encoding creators’ intentions

(group efforts w/ Cult Heritage community)

- Variable Media Initiative
- New Arts Foundation collaborations - Media Matters (MoMA, SFMOMA, Tate)
- DOCAM
- INCCA
- Past
  - Seeing Double Exhibition, & Symposium
  - TechArcheology: A Symposium on Installation Preservation (SFMOMA)

Artist Interviews

- Required as part of purchase for certain types of works (SF MoMA, Tate, Guggenheim, MoMA, ...)
- AIC Denver workshop
- WAAC (Western Assn for Art Conservation) “Artist Interview Committee”
- Miwa Yokoyama’s thesis -- “Capturing the Artist Interview: Interview Methodologies and Resources for Documenting and Preserving Time-Based Media Art”
Multiple Approaches

- Capture the documentation
- Freeze a final version (e.g., PDF of CAD)
- Capture the full functionality

Trade-offs
- risk vs. safety
- cheap vs. expensive
- full functionality vs. reduced functionality

ELO Projects-

- For older works
- For works not yet created

ELO: Uncle Buddy’s Funhouse

ELO: Impermanence Agent

ELO Research Approaches - Retrospective

- Focus on 8 older works representing
  - Text/lexia-based hypertext/interactive works
  - Storyspace hypertext/interactive works
  - Hypertext/interactive works in "plain" HTML
  - Hypertext/interactive works incorporating more complexity (DHTML, layers, Javascript, CSS, ...)
  - Flash works
  - Director/Shockwave works
  - Interactive Fiction/Drama
  - Algorithmically-generated works

- Attempt various preservation/restoration methods
  - Archival repository to save the bits, maps/storyboards, software in hopes of future restoration breakthroughs
  - Write open source code to construct viewers to read the older works on today’s machines
  - Save supporting material (screen shots, videos of interactive sessions, interviews with the author/designer, interviews with users, ...)

- Evaluate Results
  - Review how usable the works are under each method after 3 (or 5, 10) years
  - Assess the cost, time, skills involved in each method
ELO Research Approaches--Prospective

- Develop standards for encoding interactive behaviors, timing, etc.
- Gain community consensus for these standards
- Express these standards in terms of METS extensions and XML encoding
- Either convince vendors of authoring software to export to these standards, or design our own open-source authoring software
- Partner with a stable institution running a digital preservation repository, and use the encoded standards we develop as directions of how to handle works over time
- Develop model IP rights contracts that allow ELO to distribute a work if it's no longer in distribution elsewhere
- Convince the community of authors to place copies of their works in ELO’s “dark archives”

Preserving Eyebeam’s ReBlog
(Pamela Smith project)

- Description of the component parts
- The archive
- Risk assessment
- Possible preservation strategies

http://www.eyebeam.org/reblog/journal/archives/2005/06/preserving_the_dynamic_by_pamela.html

Re/Collecting: A Centennial Installation
By Simon Attie with Norman Ballard

- Projections of art objects hovering in free space, and evocative texts that materialize as if written by an unseen hand, greet visitors to a dramatic, enclosed environment created in The Jewish Museum by artist Shimon Attie in collaboration with Norman Ballard, as a new artwork commissioned for the Museum's centennial. The sound design by Bill Toles. Presented in two "chapters," the artwork evocatively juxtaposes images from the Museum's collection and fragments of texts. Re/collecting: A Centennial Installation by Shimon Attie with Norman Ballard, in which three-dimensional projections and laser writing magically call up objects and snatches of language from The Jewish Museum's past, is in the contemporary gallery of the permanent exhibition. The words and images have been selected to suggest the conversations about art, culture, identity and history that have been at the heart of The Jewish Museum over the last century. The second chapter, featuring works from the Museum's collection related to Hanukkah, remains on view through January 16, 2005.

Another Simon Attie work

Student Projects
NYU’s Moving Image Archiving & Preservation

- Examples of some steps taken towards capture & preservation of complex works-
Jewish Museum (interior)

Pamela Smith Thesis Project:
Videofreex--early 1970s experimental community broadcast television

Videofreex (Pamela Smith)

Television Pictures
March 12, 1931

Unedited material used in a Fox Movietone newscast
project by Kara van Malssen, Sean Savage, Paula Felix-Didier, Lindsay Herron

Clip #2
Ernst Fredrik Werner Alexander
in the General Electric "House of Magic"

- "We have succeeded to photograph the television image on a moving picture film. Important events that in the future may be intercepted by the television camera and broadcast to all corners of the world may thus be recorded on the film and kept in readiness in moving picture houses for projection of a lifetime some minutes or hours after the event."
- Cuts to close-shot: "We hope that this will be one more step to widen our horizon and to make all people our neighbors."
• The scanning disk "is perforated with 48 small holes, three sixty-fourths of an inch in diameter which are arranged in a spiral on the outer edge of the disk."
• Clip continues later on tape after a repeat of Clip #1

Early experiments with television

Limitations
• 48 lines of resolution (not a life-like image)
• Audio: synchronization & pitch
• Required the subject be in close proximity to the apparatus

What we were able to verify.
Date.
First successfully recorded image shown to the public.
Alexanderson.
The apparatus.
Was edited and shown in theaters.

Paradigms Shifts needed

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• http://variablemedia.net/
• http://www.deadmedia.org/notes/index-cat.html