

**Preserving Our Digital Stories: Civil Rights, Yiddish
Literature and the Hunt for Moon Patrol.**

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INTRODUCTION:

“In many ways digitization is the fulfillment of our original mission: to preserve Yiddish books and make them accessible forever.”¹

When I began doing research for this paper, my aim was to find out how some of my favorite archival projects: The StoryCorps and Voices of Civil Rights: Ordinary People. Extraordinary Stories. were willed into being and what were the technological specifics of their preservation in the Library of Congress. Then I began to wonder what might happen to these wonderful projects ten year from now, or 100 years. These fantastic artifacts containing Americans stories, our stories, are they being collected for us today, or are they being collected for future generations to see who we are and what we believed. If these future generations do find our digital videos and audio recordings, our streaming multimedia websites, will they know how to play them? Will they be able to read a zip disk, an 8 inch floppy, or even an website created with HTML 4.0 standards?

Then I started thinking about hardware and hardware emulators (big mistake) and, to prove my point, I went on a long and involved quest to find my favorite video game from the early 1980s, Moon Patrol. The best thing about the arcade version of Moon Patrol from the 1980s was this funky bass line that went with the game (dum dum dum dee dum dee dum dum dee dum...), but when I searched for the game I found a bunch

¹ Lansky, Aaron. Outwitting History. P293

of Moon Patrol emulators, one with music even, but none with the beloved bass line from my childhood!

As if to find a reverse illustration to this conundrum, I picked up a copy of Aaron Lansky's book: *Outwitting History: The Amazing Adventures of a Man Who Rescued a Million Yiddish Books* (<http://yiddishbookcenter.org/+10176>) and I was once again faced with the actual mission of digital preservation, and the hunt for Moon Patrol forgotten. The literature about digital preservation that I read for this paper, and the Lansky book tell very different stories. The digital preservation literature provides a very bleak story. The difficulties in preserving born digital collections seem disparate and insurmountable. There are difficulties of: hardware, software, metadata, storage medium deterioration, and keeping digital artifacts together with their metadata. But for Aaron Lansky and the Yiddish Book Center these problems pale in comparison to the salvation that digitization offers. Comparing these young websites with the entirety of Yiddish Literature, and the Jewish people, the Yiddish books face problems that the 'born-digital' collections should never know. Yiddish books were destroyed by the thousands during the pogroms in Russia and Kristallnacht

(<http://motlc.wiesenthal.com/resources/books/kristallnacht/introduction.html#1>).

More than half of the world's Yiddish speakers perished in the holocaust. The survivors were flung to the four corners of the earth, some preserving their treasured books, but most not. Then in their new countries of origin a process of assimilation occurred and the younger generations gave up on Yiddish, either choosing to speak the adopted language of their new homelands, keeping only the most vestigial trappings Judaism, or favoring Hebrew, they denounced Yiddish as the hybrid, pidgin dialect that should be left behind with the bad memories. Eventually the only people who spoke Yiddish in

the United States and Israel were some Professors and the Chasidim, and the Chasidim [hasids.jpg] didn't talk to anyone except themselves. Yiddish was almost dead except for the occasional 'Oy Vey' or 'Mazl Tov' uttered for a laugh at Hollywood parties. So, what happened? Well like 'kabbalism' (a fancy Hollywood way of saying: Judaism), Yiddish started becoming hip. More people wanted to learn it, one guy in Western Massachusetts started saving all of the books which, by this time were cracking in their bindings with their 100% acidic paper crumbling to dust in the attics and basements of people who were dying. Some were going to children who didn't want to schlep the moldy, yellowed, disintegrating books to their new houses in the suburbs. THEN, Steven Spielberg donated a whole lot of money and Yiddish went from almost dead to the first fully digitized literature in the world! So, I guess it's all a matter of perspective. Are there problems with digital preservation? Yes. Can it also be our salvation? Yes.

As an archivist I am not terribly interested in the tech geek-y things that one can do with .xml or .dtds, or any of the other TLA* (three letter acronym)-type things that coders and tech people can geek out about for hours. My interest lies primarily how these tools can help us to ensure that, generations from now, interested parties can look at really cool websites, videos, listen to archived episodes of This American Life. However, my dream of an entire internet worth of The Wayback Machine (if the Wayback machine actually did deliver a true glimpse of what it promised, without presenting mostly missing graphics and broken links) seems to be thwarted by the multi-headed hydra of hardware and software obsolescence, storage medium deterioration, and problematic adoption of metadata standards.

HARDWARE:

What is a girl to do when the only copy of her Master's thesis is saved on an 8-inch floppy [<http://www.pdp8.net/rx02/rx02.shtml>] disk? What if the first website you ever created is saved on a syquest cartridge[

<http://www.kassj.com/articles/zipvsez135.html> or

<http://cmdrkey.com/cbm/cworld/sample/cwscsi.html>?] Even if you had the drive,

could you find a computer with a SCSI port? As I see it there are basically three ways to view this problem from a purely hardware stand point. Emulation, migration/conversion, or outdated hardware museums.

EMULATORS:

When I first thought about emulators, I found them the most attractive option. Just start building machines with integrated software that can read WordStar documents[<http://www.wordstar.org/wordstar/history/history.htm>], or programs for the TRS-80 [<http://discover-net.net/~dmkeil/trs80/model1.htm>]. However, with the proprietary hardware, SCSI belts (of which there are numerous sizes shapes and configurations including, but not limited to: SCSI-1, SCSI-2, Wide SCSI, Fast SCUSU, Fast Wide SCSI, Ultra SCSI, SCSI-3, Ultra2 SCSI and Wide Ultra2 SCSI)² disks of all sizes and shapes this idea became confusing quickly. According to Jeff Rothenberg, a proponent of emulation, implementation of the emulation approach involves: 1. developing generalized techniques for creating emulators that will run on future computers, 2: developing techniques for saving metadata – in human-readable form-- needed to find, access, and recreate the digital documents so that emulation techniques can be used for preservation; and 3. Developing techniques for encapsulating documents, their

² <http://www.webopedia.com/TERM/S/SCSI.html>

attendant metadata, software and emulator specifications in ways that ensure their cohesion and prevent their corruption.”³

Besides the Moon Patrol issue, which is a big one for me, I found Rothenberg’s solution difficult because it is not preserving the records, rather it is preserving the delivery system. <http://www.clir.org/pubs/reports/rothenberg/introduction.html>

MIGRATION/PRESERVATION:

The general idea of migration and preservation is that an archivist or records manager will keep migrating data to the newest systems, onto the most durable storage media and into the latest version of software available. The upside of this is, if it’s kept up, it will always be readable by the newest systems. The downside of migration/preservation are as follows: 1. Records will be mostly migrated from one proprietary system to another. 2. The unselfconscious manner in which people tend to create records means that creators won’t migrate most of their records to new systems. So what happens when, a few generations down the line, archivists obtain these records, will they be readable from that point? With proprietary systems there will be formatting issues and data structure loss due to software incompatibilities (think of converting thousands of pages from Quark page layout to Adobe InDesign, or whatever the adobe page layout thing is). I mention software here, because there can be no hardware migration without software migration, whether operating systems, page layout programs or word processors. However, the “most prevalent view is that migration is a legitimate digital preservation strategy, and, along with converting to standard formats, offers the best hope for the future. Yet, even the most vociferous

³ IBID. section 8: Emulation solution

advocates of migration recognize that much additional research is needed to test the technical feasibility, establish best practices and identify costs”⁴ I must add that with the cost of storage and the processing speed of most desktop machines being what they are, hardware migration and buying larger and larger drives to back up more data seems to make the most economic sense. However, it does seem problematic with regard to the integrity of the data.

Outdated Hardware museums:

One interesting, but quite impractical preservation strategy recommends that society create museums of obsolescent hardware and software. On the whole this has been dismissed as unrealistic and too expensive. It seems unrealistic to preserve every combination of hardware, software and storage device that might present itself.

However, I have done some interesting searches for old machines and items on ebay and found a bunch of SCSI devices, some TRS-80s, and ATARI 2600s! However, I’m not sure that 200 year from now these will still be available and operational.

Software and backwards compatibility:

As a primarily Macintosh oriented person, I have to say that I am completely opposed to developing a preservation strategy around proprietary software. Essentially it means that we will be ruled by the big three: Microsoft, Adobe and Macromedia. Over the years I have stopped trying to chew my own foot off to rid myself of the Microsoft Office trap, and I’ve paid the money to own versions for both the Mac and the PC.

⁴ Banten, Philip C. Electronic Records Management—A Review of the Work of a Decade and a Reflection on Future Directions. Indiana University, Bloomington IN. p34

However, I find Microsoft's operating system so ugly; kludge-y; bug-y; and their (so-called) 'help' manuals are written by space aliens translating from their native language into Arabic, and then to English. I am also not sure, in some instances, that changing from one proprietary software to another allows us to maintain the original intent of the document we are saving, or to the person who created it. For example, imagine migrating all of Douglas Adams' work onto a Dell running Microsoft XP and into MS Word 2006 (or whatever the newest one is). Here are some things that Douglas Adams might say about this:

"Something wrong, sir?" he said. "Oh, nothing," I said gloomily. "It's just the new version of Microsoft Word."
"Ah," he said, wiping a glass sympathetically, "I expect it's the manual that'll be getting you down then, sir. I always tell my customers, 'there's nothing in life so difficult that a Microsoft manual can't make it completely incomprehensible.'⁵

And:

"I want to contrast for a moment the number of features on two different word processors. One of them is Microsoft Word 3.0, billed as the most comprehensive word processor yet - powerful, flexible, configurable to the demands of any professional writing task, it takes 600 pages of manual just to describe all its features (twice, admittedly).

The other word processor is miniWRITER, a desk accessory which only has about two features, one of which Word 3.0 hasn't got. And it's not a negligible feature either. As a professional novelist and occasional desktop publisher it's the first thing I looked for after I'd torn off the shrink wrap, and I discovered it wasn't there, I cursed and swore, went out for a sullen lunch and shouted at the barman."⁶

It seems to me that these musings will lose their humor when read in Microsoft Word on a Dell running WindowsXP. However, trying to keep original versions of

⁵ Adams, Douglas. Douglas Adams' Guide to the Macintosh.
http://www.csd.uwo.ca/staff/magi/personal/humour/Computer_Audience/Douglas%20Adams'%20Guide%20to%20the%20Macintosh.html

⁶ *ibid.*

miniWRITER around so that we can still enjoy the authenticity of Douglas Adams'

humor doesn't make sense either. This brings me to the only idea that makes any sense.

Instead of migrating digital artifacts from outmoded incompatible software programs to

other software programs that will also soon be outmoded and incompatible, why not

transfer them once to a non-proprietary mark-up language. Today that is xml.

Tomorrow, it may be another flavor of SGML (standard Generalized Markup

Language). As long as machines can read it and format it, and we can at least see

what's in it when it's in it's machine readable form then we're set. (see an HTML

sample below):

```
<table border=0 width=100%><tr valign=top>
  <td width=45 bgcolor=purple align=center>
    <A href="http://www.csd.uwo.ca/staff/magi">
      <IMG src="../../images/labels/dgwnname.gif" border=0 width=34
        alt="David G. Wiseman"></a>
    </td><td align=left>
<!-- ----- Your page starts here ----- -->
<h1>Douglas Adams' Guide to the Macintosh</h1>
<pre>
Date: Tue, 25 Feb 92 10:06:02 -0500
From: alec@ftp.com
Subject: Guide to the Macintosh (Douglas Adams)
```

As the author of the four books of the Hitchhikers Guide to the Galaxy trilogy, and the perpetrator of two infocom text adventures (Hitchhiker's and Bureaucracy), Douglas Adams needs no introduction.

MacUser, "The Macintosh Resource", September 1987

Douglas Adams'

Guide to the Macintosh

WE ARE NOT EXACTLY SURE WHAT WE'VE GOT HERE - PERHAPS WE ASKED THE WRONG QUESTION - BUT WE THINK YOU'RE GOING TO LIKE THIS... One of them is Microsoft Word 3.0, billed as the most comprehensive word processor yet - powerful, flexible, configurable to the demands of any professional writing task, it takes 600 pages of manual just to describe all its features (twice, admittedly).

The other word processor is miniWRITER, a desk accessory which only has about two features, one of which Word 3.0 hasn't got. And

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it's not a negligible feature either. As a professional novelist  
and occasional desktop publisher it's the first thing I looked for  
after I'd torn off the shrink wrap, and I discovered it wasn't  
there, I cursed and swore, went out for a sullen lunch and shouted  
at the barman.
```

```
</pre>  
<!-- ----- Your page ends here ----- -->  
<h4>Ha, ha, ha. Take me back to  
[ <a href=" ../Computer_Audience.html">the alphabetic list</a> ]  
[ <a href=" ../CA_bydate.html">the date-ordered list</a> ].</h4>  
</td></table>  
</BODY>  
</HTML>
```

Now, reading the person-readable text in between those tags is pretty simple.

And with some coding the formatting isn't lost either. There are also non-proprietary formats for images. An original digital image whether scanned in or imported from a camera or whatever is saved as a high resolution tiff file. If the tiff file is combined with it's metadata, we might always find a way to view it. Slowly over the past two years a new lossless compression standard, JPEG2000, has been making it's way into common usage. There is now a photoshop plug-in for it and image archives are beginning to use it, this might add to our choices of migratable image standards.

This brings me to audio. According to NDIIPP (National Digital Information Infrastructure and Preservation Program), the problem with audio preservation exists because there is no permanent format. An article on the NDIPP website states: "Ultimately, preservation reformatting will be required for all media upon which sound is recorded, since preservationists acknowledge that there is no permanent format. Most preservationists believe that resources spent to identify and develop a permanent medium are better spent building systems that acknowledge impermanence and exploit the potential of readily available

technology.”⁷ Despite a lack of permanent formatting for digital audio, one issue seems clear, there is a real need to create digital objects that permanently marry audio files with their metadata. “Digital repositories such as the one proposed for the LC call for each audio recording in the repository to be represented by a set of digital files, a "digital object." The digital object comprises the audio tracks of the recording; graphic components of the recording's packaging, such as disc labels, dust jackets, and sleeves; and metadata (which can be partitioned into "descriptive," "structural," and "administrative" metadata) about the original recording and its digital files.”⁸ Which brings me to metadata:

METADATA:

According to NARA an image is not considered to be of high quality unless metadata is associated with it. “Metadata makes possible several key functions – the identification, management, access, use, and preservation of a digital resource – and is therefore directly associated with most of the steps in a digital imaging project workflow: file naming, capture, processing, quality control, production tracking, search and retrieval design, storage, and long-term management. Although it can be costly and time-consuming to produce, metadata adds value to production master image files: images without sufficient metadata are at greater risk of being lost.”⁹

⁷ Brylawski, Samuel. Preservation of Digitally Recorded Sound.
<http://www.digitalpreservation.gov/index.php?nav=3&subnav=7>

⁸ *ibid.*

⁹ Puglia, Steven, Jeffrey Reed; Erin Rhodes. U.S. National Archives and Records Administration (NARA) Technical Guidelines for Digitizing Archival Materials for Electronic Access: Creation of Production Master Files – Raster Images. 6/2004.
http://www.archives.gov/research_room/arc/arc_info/techguide_raster_june2004.pdf

Without getting too fancy, there are essentially three types of metadata:

Descriptive, Structural and Administrative. Descriptive metadata provides the who, what, when, where of a resource or file. Structural metadata describes the relationships between different components of a digital resource.

Administrative metadata is comprised of both technical and preservation metadata and is generally used for internal management of digital resources.

Technical metadata describes the attributes of a digital image or file. This helps ensure that images will be rendered accurately.

The metadata type that I really want to discuss in detail is the aspect of technical metadata called **Preservation metadata**. Preservation metadata encompasses all information necessary to manage and preserve digital assets over time. This is

“the information necessary to maintain the *viability*, *renderability*, and *understandability* of digital resources over the long-term. Viability requires that the archived digital object’s bit stream is intact and readable from the digital media upon which it is stored. Renderability refers to the translation of the bit stream into a form that can be viewed by human users, or processed by computers.

Understandability involves providing enough information such that the rendered content can be interpreted and understood by its intended user.”¹⁰

Preservation metadata is mostly comprised of Content Information (CI) – the data object and representation information, Preservation Description Information (PDI) which contains information about how to preserve the content, Packaging Information (PI) – marries the digital object to the metadata and descriptive information and Descriptive Information (DI) – describes how to access the content via archival search and retrieval

¹⁰ OCLC/RLG Working Group on Preservation Metadata. Preservation Metadata and the OAIS Information Model: A Metadata Framework to Support the Preservation of Digital Objects. June 2002. p1

tools.¹¹ Combined, these tools are our best hope for being able to save the digital creations that will provide a picture of us to future generations.

CONCLUSION:

In researching this paper I realized that in order to understand the preservation about the projects that I find so compelling, I had to immerse myself in understanding the standards, the technology and the actual tools of digital preservation. I've read about PREMIS and Dublin Core, OAI and OAIS, XML and SGML. I've thought about preservation strategies and what might happen to our most beloved stories if we don't think about preservation strategies. However, in the end, it really is mostly about these stories. The StoryCorps project [www.storycorps.net], the Voices of the Civil Rights Project [<http://www.voicesofcivilrights.org/project.html>], and the Yiddish book Center are about preserving the stories of every person. Too often we are overwhelmed by the attention paid to the cult of personality. If you are not powerful, wealthy, famous, or in some way related to someone who is, then your story is not of worth. On the other hand an historical movement has been going on for some time now that seems to be rooted in Labor unions, rooted in the civil rights struggles of the 1960s and 70s, and yes, even rooted in the desktop publishing movement. This peoples' movement says that it is not just the Carnegies, the Generals, and the writers of the constitution whose stories are important to record and know. It is the laborers, the infantry and the people for whom the constitution was written who also have important stories to tell. Not just because it's nice to hear the stories of the little people and the also-rans. But because these stories give us a different perspective of an event or a period in time.

¹¹ Ibid. p8, 9

The digital artifacts that represent these stories must be preserved so people 200 years from now can watch, see and hear the lives of everyday people, in the way we can only read about the everyday lives of the people who lived centuries before us.

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