

Reading Jeremy Blake: Issues of Preservation  
and Access to Born-Digital Artists' Archives in  
a Multi-Institutional Context

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## I. Introduction

On March 16, 2010, the New York Times published an article in its Arts section by Patricia Cohen that posed the following dilemma to its readers: “Imagine having a record but no record player.”<sup>1</sup> The statement comes in the context of Emory University’s Manuscript, Archives and Rare Book Library’s acquisition of the author Salman Rushdie’s archives, which includes four Apple computers, along with several floppy disks, compact discs and hard drives. Few libraries have, as of the writing of this paper, attempted preservation of born-digital files, and many in the archival community met the announcement of this acquisition of unique digital materials created by a major literary voice with a degree of both excitement and trepidation. The article calls attention to the vast difficulties that libraries and other collecting institutions encounter when dealing with “born-digital” files (that is, documents whose entire existence has been encoded into the zeroes and ones that comprise digital information). While it is tempting to think that the encoding of analog materials into a digital form ensures both those materials’ longevity and accessibility, the digital domain is rife with problems with which many archivists are currently struggling. In many instances, a file may still technically exist, but the associated hardware and software required to access that file may no longer be available or functional.

Part of the problem with instituting a digital preservation strategy for archives is that even the most basic digital object enjoys a tripartite existence. Kenneth Thibodeau, in his 2002 summation of the state of digital preservation across the world, outlined three

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<sup>1</sup> Cohen, Patricia. “Fending Off Digital Decay, Bit by Bit.” *The New York Times* 16 March 2010. Accessed 19 March 2010. <http://www.nytimes.com/2010/03/16/books/16archive.html>.

characteristics intrinsic to all digital objects: they are *physical* objects, or “signs inscribed onto a medium”; *logical* objects, or objects that are recognized and processed by software; and *conceptual* objects, or objects that are recognized and understood by the person who uses them<sup>2</sup>. As such, the task for the digital archivist becomes figuring out how best to preserve digital files, at the physical, logical, or conceptual level.

A specific project that is being undertaken by New York University’s Fales Library and Special Collections (which will henceforth in this paper be shortened to “Fales” for brevity’s sake) will serve as an illustration of these relationships. In 2009, Fales received a number of CDs, hard drives and videotapes that belonged to the late artist Jeremy Blake (1971-2007). New York University is, as of this writing, attempting to engineer a workable digital preservation strategy for this unique collection, which contains the artist’s finished works, working files, unfinished projects, e-mails and various born-digital miscellanies. One of the inherent difficulties of Fales’ project to archive and preserve Blake’s work is that there is very little precedent for how to do it, no best practices or established workflow for navigating through an artist’s hard drives and computer files. (As Leslie Morris of the Houghton Library at Harvard, who recently acquired a collection of the late author John Updike’s 1/4” floppy disks, half-jokingly notes in the NYT article on Rushdie’s archives, “we’re hoping for some kind of universal Harvard guidelines.”)<sup>3</sup>

The first section of this paper will describe the various relationships that may influence the outcome of preserving born-digital art in a multi-institutional setting:

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<sup>2</sup> Kenneth Thibodeau, “Overview of Technological Approaches to Digital Preservation and Challenges in the Coming Years.” *The State of Digital Preservation: An International Perspective*. Council on Library and Information Resources, pub107 (2002), <http://www.clir.org/pubs/reports/pub107/thibodeau.html>.

<sup>3</sup> Cohen, *NYT*.

namely, the commercial side of the art world (as represented by an artist's dealer or gallery) and its partnership with the not-for-profit academic institution, artists' archives in academic institutions and the unique challenges they sometimes pose, and the digital library's role in facilitating researcher access to the artist's archive. The second section of this paper will discuss similar projects that have been, or are currently being undertaken by other institutions and individuals, the findings of which may have some bearing on both Fales' project and other digital preservation efforts in collecting institutions. The third section of this paper will focus on what Fales is currently doing to create access to and preserve the artist's files, along with recommendations on best practices for both Fales and other institutions that are engaged in similar projects. While there are currently efforts being made towards defining best practices for digital preservation models, very little research has been officially released regarding this topic; this paper will be operating within these limitations.

### **A. Creator**

The first link in the archival chain of command is, naturally, the creator of the archives. Jeremy Blake was born on October 4, 1971 in Fort Sill, Oklahoma to Anne Schwartz and Jeffrey Blake. Jeffrey and Anne divorced while Blake was still young and so he divided his time between his mother in Takoma Park, Maryland, a suburb of Washington, D.C., and his father in the Mount Pleasant neighborhood of D.C. proper. At the age of fourteen Blake took his first art classes at the Corcoran Gallery of Art. Jeffrey Blake died of AIDS-related illness while Jeremy was seventeen years old and attending

Montgomery Blair High School in Silver Springs, Maryland; his mother would later remarry, to Arthur Delibert of Bethesda, Maryland. After high school, Blake attended the Art Institute of Chicago, where he earned his B.F.A. in 1993<sup>4</sup>. Immediately after graduation, Blake was accepted into the M.F.A. program at the California Institute of the Arts in Valencia, California for painting. After receiving his degree in 1995, Blake moved to New York City.

For Blake, 1995 also marked the beginning of a lifelong relationship with the artist Theresa Duncan. Blake and Duncan had initially met one another through the D.C. hardcore music scene in 1994. They were each friends with bands in the scene (Duncan at the time was dating a member of Government Issue), but only crossed paths occasionally. The two had moved to New York separate of one another in 1995, but met backstage at a concert at the alternative music venue The Knitting Factory one evening. This initial friendly conversation soon blossomed into both a romantic and creative partnership. At the time, Duncan was working at Nicholson New York, a new media company based in SoHo, and had already released one highly critically acclaimed CD-ROM, *Chop Suey* (1995), created in collaboration with Monica Gesue. Blake, meanwhile, was working as a photo retoucher to support himself while making art. Though he had been trained as a classical painter, the process of digitally manipulating images spurred new avenues of creative output for Blake. Duncan hired Blake as her art director and illustrator for two of her CD-ROMs, *Smarty* (1996) and *Zero Zero* (1997). Duncan herself starred in *Smarty* in the role of Mimi Smartypants. *Chop Suey*, *Smarty* and *Zero Zero* were hailed as a breath

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<sup>4</sup> “*Wild Choir: Cinematic Portraits by Jeremy Blake* – 10/27/2007 – 3/2/2008.” Corcoran Gallery of Art website. Accessed 3 April 2010. [http://www.corcoran.org/exhibitions/previous\\_results.asp?Exhib\\_ID=189](http://www.corcoran.org/exhibitions/previous_results.asp?Exhib_ID=189).

of fresh air in the otherwise male-dominated world of online gaming, in which women were portrayed as either sexual objects or as victims of extreme violence<sup>5</sup>.

While working for and with Duncan at Nicholson New York, Blake began to get noticed for his own artwork. He had begun creating large-scale, heavily abstracted digital C-prints that appeared to mix elements of both painting and photography, yet were created entirely in Photoshop. In 1999, Blake debuted three video pieces at Feigen Contemporary, along with some of his C-prints. The pieces were digitally rendered in Photoshop, each image created through the painstaking application of sometimes up to forty layers, and then animated in Final Cut Pro. While the videos, like his C-prints, consisted of largely abstract washes of color, there were nods to California Noir imagery such as the Beverly Hills Hotel, tiki torches, and reflective pools. Blake and Duncan, meanwhile, continued to collaborate and in 2000 Blake, along with visual artist Karen Kilimnik and musicians Brendan Cauty (Fugazi) and Kathi Wilcox (Bikini Kill), assisted Duncan on a forty-minute short film called *The History of Glamour*, a wry, satirical look at a young indie rock girl's ascent and fall in New York's fashion industry<sup>6</sup>. The curators of the 2000 Whitney Biennial chose *A History of Glamour* for the exhibition that year. (Blake's solo work would be shown in the next two Biennials, as well.) In 2001, Blake's video art featured prominently in the Whitney's groundbreaking digital art exhibition "BitStreams". That year also saw Blake working with the director Paul Thomas Anderson to create animated sequences for his film *Punch Drunk Love* starring Adam

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<sup>5</sup> Sales, Nancy Jo. "The Golden Suicides." *Vanity Fair*, January 2008. Accessed 3 April 2010. <http://www.vanityfair.com/culture/features/2008/01/suicides200801>.

<sup>6</sup> Amsden, David. "Why Did Artists Theresa Duncan and Jeremy Blake Commit Suicide? – A Chronicle of Their Descent into Madness." *New York Magazine*. 19 August 2007. Accessed 3 April 2010. <http://nymag.com/news/features/36091/index.html>.

Sandler, as well as creating both the album art and tour backdrops for Beck's *Sea Change* album, both of which were released in 2002.

That same year, Blake and Duncan left New York City for Venice Beach, California. Duncan had dreams of breaking into Hollywood, following the critical success of *A History of Glamour*, and came to Los Angeles armed with a script for a film called *Alice Underground*. Blake, meanwhile, continued his progression as a video artist, slowly moving into the realm of representation in his video pieces. It was in California that he began to work on the "Winchester" trilogy of videos that would fully cement his status as an art star. The films, *Winchester* (2002), *1906* (2003) and *Century 21* (2004), all loosely revolve around Sarah Winchester, the Winchester rifle heiress who, out of fear that the ghosts of those who were killed by the rifles that made her family famous would haunt her, built a sprawling, labyrinthine 160-room mansion in San Jose, California that she claimed would deter supernatural spirits out for revenge. These works marked a departure for Blake in their incorporation of still photography, video and super 8mm film into his ever-shifting digital landscapes. All three works were shown together for the first time at the San Francisco Museum of Modern Art in 2005.<sup>7</sup>

Duncan, meanwhile, was met with less acclaim in Hollywood. The *Alice Underground* project progressed in fits and starts and eventually stalled completely; Duncan's option had run out. She created a blog, *The Wit of the Staircase*, while writing other scripts and freelancing. It was during this point in their lives that the couple began to claim that members of the Church of Scientology was harassing them, making it impossible for any of their various film projects to get off the ground. Blake severed his

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<sup>7</sup> "Jeremy Blake: *Winchester* – February 19 – October 10, 1995." San Francisco Museum of Modern Art website. Accessed 3 April 2010. <http://www.sfmoma.org/exhibitions/200>.

professional relationship with Beck, a practicing Scientologist, and the couple accused several other colleagues and friends of having affiliations with the Church, which they claimed was a covert government intelligence operation. (After their deaths, the *Los Angeles Times* published portions of a 27-page document that Blake and Duncan had co-authored detailing the specific threats they had received from the Church or its members.)<sup>8</sup>

In 2006 the couple left Venice Beach for Santa Monica, where Jeremy's modestly sized studio was located. In January of 2007, the couple moved back to New York, renting the two-bedroom apartment on the top floor of the rectory of St. Mark's Church on the Bowery. Blake prepared for solo shows at his New York gallery, Kinz Tillou + Feigen, and the Corcoran Gallery of Art, in addition to starting a consultancy with the video game designers Rockstar Games, creators of the popular *Grand Theft Auto* series of action games. Duncan, meanwhile, resumed blogging. While both Blake and Duncan continued to enjoy success in their respective pursuits, the couple's increasingly erratic behavior caused them to sever relationships with many formerly close friends (such as Blake's onetime dealer in Los Angeles, Christine Nichols from Works on Paper).

On July 10, 2007, Duncan was found dead in their shared apartment; the official coroner's report gave suicide by drug overdose as the cause of death. On July 17, 2007, one day before he was to set out with a friend to drive to Michigan to attend Duncan's funeral, Blake disappeared after telling a friend he had to run an errand at his office at Rockstar Games. Instead of returning home, he took the A train out to the terminal stop at Rockaway Beach in Queens. An eyewitness at Rockaway Beach recalled seeing someone removing his clothing and wallet before wading into the ocean. Blake's body was found

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<sup>8</sup> Amsden, "Why Did Artists Theresa Duncan and Jeremy Blake Commit Suicide?"



washed up on the shores of Sea Girt, NJ on July 22. His wallet, found on the sands at Rockaway Beach, had contained a suicide note. The Associated Press confirmed his death on July 31, 2007<sup>9</sup>. In 2009, it was announced that the filmmaker Gus Van Sant and screenwriter Bret Easton Ellis were collaborating on a biopic of Blake and Duncan, tentatively to be titled *The Golden Suicides* (the title is taken from Nancy Jo Sales' January 2008 article about Blake and Duncan for *Vanity Fair* that chronicled their lives and deaths.)<sup>10</sup> That same year, Blake's mother, Anne Schwartz Delibert, donated her son's archives to the Downtown Collection of the Fales Library at New York University.

## **B. Estate/Donor**

In the particular instance of Blake, there are two additional bodies that have a stake in his collection and who also significantly factor into the archival chain of command. As a deceased artist whose artworks are represented by a dealer, the collecting institution is beholden to both the *estate* and the *gallery*<sup>11</sup>. The executor of Jeremy Blake's estate is his mother, Anne Schwartz Delibert, who still lives and works in Takoma Park, Maryland where she raised her son. Negotiations with the estate are important for archivists because the estate exerts intellectual control over the collection.

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<sup>9</sup> Kennedy, Randy. "Jeremy Blake, 35, Artist Who Used Lush-Toned Video, Dies." *The New York Times*, 1 August 2007. Accessed 3 April 2010.

<http://www.nytimes.com/2007/08/01/arts/design/01blake.html?ref=design>.

<sup>10</sup> Fleming, Michael. "Scribes make suicide pact." *Variety*, 13 October, 2009. Accessed 3 April 2010.

<http://www.variety.com/article/VR1118009900?refCatId=13>.

<sup>11</sup> In certain instances, the estate and the gallery may be managed by the same person; for example, the visual artist Felix Gonzalez-Torres' estate is managed by his principal dealer, Andrea Rosen, via the Felix Gonzalez-Torres Foundation. Magda Salvesen and Diane Cousineau's *Artists' Estates: Reputations in Trust* (Rutgers University Press, 2005) provides several oral histories from executors of artists' estates and demonstrates the wide array of persons who have been charged with executing estates, foundations and trusts.

Fales does not assume copyright over any of its collections, so while the collection physically belongs to the library, the estate, like any donor of materials, has a say in the intellectual arrangement of the collection, which includes the terms of access.

Additionally, the terms on which the collection is donated in the first place depend on the interactions between the archivist and the executor of an estate. Delibert donated her son's collection to Fales, but in many instances an executor who is a potential donor may ask for financial compensation if it is apparent that the collection is particularly valuable or, if the executor is dissolving the estate, to cover the considerable legal and financial costs of doing so.

The estate has the right to place restrictions on which portions of the collection researchers can access. Some donors place a time constraint on archival materials by only allowing material to be accessed at a certain date in the future. *A Visual Artists' Guide to Estate Planning* advises that "potentially embarrassing materials that hurt the living should not be destroyed; rather, they should be restricted for an appropriate number of years."<sup>12</sup> While the actual contract between the donor and the library remains confidential and, hence, inaccessible to the author, Fales' senior archivist Lisa Darms mentioned that Delibert has requested that Fales, for the time being, not make public any e-mail exchanges between Blake and Duncan for reasons of privacy. It is a general practice of research libraries that possess confidential archival material to inhibit access to that material until a future, agreed-upon date between the donor and the library.

### **C. Gallery**

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<sup>12</sup> *A Visual Artist's Guide to Estate Planning*. Colorado Springs, CO: The Marie Walsh Sharpe Art Foundation, 1998, 41.

Art galleries “represent” the artists with which they work. The terms of representation vary from gallery to gallery, but generally speaking a gallery controls sales of their artists’ works without assuming legal control over the work itself. The basic responsibility of an artist to his dealer is to keep producing work. However, artists may often not be allowed to sell work out of their studios of their own accord; instead, all sales must be directed through the gallery’s staff. Many, though not all, artists sign consignment agreements in which the gallery and the artist agree to the terms of sales of their work, including commission figures (i.e. how much the gallery receives for each work sold). While sales do form the crux of the artist-dealer relationship, a gallery also forms a support system for the artist. The gallerist often discusses the artist’s works with him or her and provides encouragement and counsel for the creation of future works and as such becomes intimately familiar with the artist’s working process. The gallery is responsible for putting the artist’s works out in the public eye, advertising the artist’s works through press releases, creating still images of artworks for circulation and publicity purposes, and providing the artist with any special equipment that he or she might need for their upcoming shows. Because gallerists aim to create an ideal working environment for their artists, there is – or ought – to be a premium placed on the integrity of the work created as well, to ensure against any potential damage that may occur as a result of either faulty handling, mismanaged sales or forgeries being sold as the real thing.

Because of this fact, video art presents a unique problem for galleries. While paintings and sculpture are “fixed”, unique objects whose authenticity is for the most part easy to determine, moving image-based art and photography are inherently reproducible

and thus present problems for collecting institutions interested in obtaining a copy of the work. Any given video work on a DVD can be ripped, burned onto new discs, and copied endlessly, even with technical protection mechanisms (which can nearly always be circumvented). The “edition” process was created to get around this particular hurdle so as to ensure the authenticity and uniqueness of a video art piece. Blake’s dealer at the time of his death and for most of his working life was Lance Kinz, who currently co-owns Kinz + Tillou Fine Art (formerly Kinz, Tillou + Feigen Gallery). Kinz’s edition process follows the typical route that most galleries follow. If an artist is working in a reproducible medium such as photography or video, a certain number of copies can be made of each work, depending on how highly sought after the artist is by museums or private collectors. Blake’s early video pieces were produced in editions of either three or five; once museums and collectors began to express increased interest in his works, the editions went up to eight or ten. Blake signed each edition as a guarantor of authenticity and created special packaging for each DVD copy. Since Blake’s death, Kinz issues certificates of authenticity for each work that he sells. In instances where the DVD is no longer playable, he presses a new disc in exchange for the faulty one. Kinz retains a Digital Betacam master copy for each piece that Blake created and sold, though he stressed that in many instances the DigiBeta tape is all he has left of certain works, particularly early pieces such as *A History of Glamour*.<sup>13</sup> In the event that someone would request a DVD of such a piece, however, he would take it to a tape transfer facility to have a copy made.

As Blake’s dealer, who handles all financial obligations surrounding his work, Kinz naturally has a vested interest in setting the terms of access to Blake’s work. At the

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<sup>13</sup> Interview with Lance Kinz, 12 March 2010.

time of this writing, three of Blake's video pieces – *Guccinam*, *Liquid Villa*, and *Century 21* – are available to be viewed in their entirety and for free on the UbuWeb website, which makes difficult-to-find avant-garde film, video, music and poetry from the 20<sup>th</sup> and 21<sup>st</sup> century available on the Internet. In their FAQ, the editors of UbuWeb insist that works of art whose copyright has elapsed or that are otherwise extremely difficult to acquire is fair game for the website, but that otherwise “we won't touch it”. However, elsewhere in their FAQ they confess “if we had to get permission from everyone on UbuWeb, there would be no UbuWeb”. UbuWeb's “collection” policy has been the target of some controversy over the years. Some artists, such as Tony Conrad and Bruce Conner, demanded that their works be taken down from the website, claiming copyright infringement; in other cases, certain dealers and artists, such as Elizabeth Dee and the video art distribution company Electronic Arts Intermix, allow UbuWeb to host low-resolution streaming copies of their artists' video or film pieces. A discussion of the financial ramifications of UbuWeb's exhibition practices is outside the scope of this discussion, but Blake's work is hardly “orphaned” in the sense that the films contained on an Internet ‘venue’ such as archive.org are. Blake's pieces are not commercially distributed, but Kinz, as Blake's dealer, oversees the distribution of Blake's work. Kinz is aware that Blake's work is on UbuWeb; while he is unsure exactly how those pieces got there in the first place, he is unhappy that the work exists there as no one affiliated with UbuWeb contacted him for permission.<sup>14</sup>

For the gallery or dealer, then, the decision to deposit their artists' collections in an archive entails determining whether and how such a move will ultimately be beneficial

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<sup>14</sup> At the time of the interview with the author, Kinz mentioned that he was planning on contacting them to ask them to take the works down, but hadn't yet done so.

to both the gallery and the archive. As Kinz's issues with UbuWeb demonstrate, there is a financial incentive for the dealer to restrict the channels by which one accesses the work, even or perhaps especially in an age when information is easier to distribute than ever before. While the legal processes of archives are largely a result of the wishes of the artist's estate or foundation, the long-term preservation of an artist's life's work necessarily involves the input of their gallery, if there is one.

#### **D. Collecting institution**

The Fales Library and Special Collections at New York University was established in 1957 by DeCoursey Fales in honor of his late father, Haliburton Fales. At present, the collection comprises two hundred thousand volumes of rare English-language books and manuscripts, largely dating from the mid-18<sup>th</sup> century to the present day. In addition, Fales houses over eight thousand linear feet of archival material. Fales actively collects in four different areas. The largest division of Fales' special collections is the Downtown Collection, started by the director of Fales, Marvin J. Taylor, in 1996, which documents the downtown New York art, music and literary scenes from 1975 to the present (with "downtown" defined as the geographical region of New York City consisting of the East Village, the Lower East Side and SoHo). Additionally, Fales has a General Special Collections division that collects largely, but not exclusively, documents and manuscripts from English and American authors from 1800 onwards, as well as the Food and Cookery Collection, which traces the evolution of food practices in America throughout the 20<sup>th</sup> century. Most recently, senior archivist Lisa Darms has established

the Riot Grrrl Collection at Fales, which charts the development of the politics, music, art, and literature associated with the Riot Grrrl movement from 1989 to 1996.

Anne Schwartz Delibert, Blake's mother and the executor of his estate, donated Blake's collection to Fales in 2009. While much of the Downtown Collection is focused on the period between 1974 and 1994, or the approximate span of time when the loft laws that enabled artists-in-residence to occupy low-rent downtown lofts as live/work spaces existed, Blake's collection still fits the purview of the collection in a number of ways. Blake and Duncan lived and worked in New York City from 1995 to 2002, during which period Blake began to garner acclaim for his prints and videos, and moved back again from the West Coast in January 2007 before they both passed away. Blake's first solo show, "Sucking in the Seventies, Recent Works/Jacob Fabricius, Copenhagen, Denmark, Bungalow 8" took place at Feigen Contemporary in Chelsea, and his artworks were embraced by many in the contemporary art scene in New York City. Blake's collection also fits with Fales' policy of collecting the archives of artists who were active in the Downtown scene. Among the other visual artists whose archives are held at Fales are David Wojnarowicz, Frank Moore, Andrea Callard, Martin Wong and Robert Blanchon. Many of these archives hold not just personal correspondence, writings, and other biographical material pertaining to the artist, but they also might contain works of art such as sketches, drawings, films, videos, photographs, or even paintings and sculptures.

On February 16, 2010, the Fales Library hosted a panel discussion on the subject of artists and archives. Ann Butler, director of the archives at the Center for Curatorial Studies (CCS) at Bard College, argued that increasingly there is no distinction between the work of art and the archival document. Citing examples from the Marieluise Hessel

collection at CCS, such as personal correspondence between the collector Hessel and the artist Felix Gonzalez-Torres that he later used in one of his own pieces, Butler made the case that contemporary art often blurs the distinction between the public (the artwork) and the personal (the archive). In many cases, she pointed out, archives can provide the only physical evidence that a particular work of art ever existed in the first place. This is particularly important to note in the case of artists whose work deals in the ephemeral (e.g. performance artists) or whose work is prey to rapid obsolescence (e.g. artists working in audiovisual media).

The panel also addressed the relationship between galleries and archives with the inclusion of P.P.O.W. Gallery co-director Penny Pilkington. Pilkington and her partner, Wendy Olsoff, represent the estates of David Wojnarowicz and Martin Wong, both of whose archives are held at Fales. Fales entertains a close relationship with P.P.O.W. and with both of those artists' estates, which are overseen by Tom Rauffenbart and Florence Wong Fie, respectively. Pilkington noted in her talk that P.P.O.W. lacks both the time and space to save materials pertaining to their artists, and so it makes perfect sense that a collecting body such as Fales should want to take in those materials if it fits their collecting policy. She also prompted the question: "What *should* archives have?"<sup>15</sup> The context in which items are viewed in an archive is often an important one. Robert Blanchon's collection at Fales, for example, consists of numerous articles that are also works of art, such as business cards that Blanchon created multiples of that he made available at exhibitions of his work. While the relationship between archival institutions and artists' estates can be a fruitful one, there are issues that need to be addressed

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<sup>15</sup> Pilkington, Penny. "Art or Archive? What Matters to Artists Estates." Panel discussion at Fales Library and Special Collections, New York University, New York, NY. 16 February 2010.



between the two organizations regarding their respective roles in preserving the artist's legacy.

### **E. Digital Library**

Bobst Library is home to the Digital Library Technology Services (DLTS) department of New York University. According to their homepage, the DLTS processes, enables access to and preserves digital materials that come from both the NYU community and from collaborating partner organizations. Our methods include digitization, software development, research, project coordination and the articulation of best practices. DLTS creates infrastructure and systems to advance networked scholarly communication and explores the questions raised by the use of these services as they continue to evolve.<sup>16</sup>

Part of this continual evolution entails, at present, establishing protocols for technical support for digital preservation projects throughout the library. The DLTS plays a significant role in several archival projects hosted by NYU, such as the Afghanistan Digital Library, the Hemispheric Institute Digital Video Library, and the Mondays with Merce webcasts that take place at the Merce Cunningham Dance Studio. As DLTS has never attempted something like the Blake project before, "best practices" for the preservation of the collection are still being figured out.

When asked about DLTS' role in the preservation and access of born-digital objects in NYU's special collections, Brian Hoffman, the digital library publication and

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<sup>16</sup> NYU Digital Library Technology Services website. Accessed 2 April 2010. <http://dlib.nyu.edu/dlts/>.

access manager at DLTS, remarked that they provide *kinds* of preservation and access. Specifically, he outlined three services that DLTS hopes to provide for this collection:

1. bit-level preservation – this entails the copying of information from hard drives, attaching a digital signature to each file, and assigning global unique identifiers to each file;
2. supporting intellectual arrangement – disk imaging and other activities that will enhance the special collections’ abilities to visualize and thus arrange files according to their own protocols; and
3. interface creation for user access – this encompasses browsing functions for finding aids, the application of preservation and technical metadata to digital files, and enabling authorization and authentication for access to the collection by library patrons.<sup>17</sup>

The DLTS falls under the umbrella of NYU’s Information Technology Services department, which functions as the central nervous system of NYU’s technology-based services (e.g. computers, telephones, and Internet service). ITS’ data centers, which are located in several locations (including downtown New York and Syracuse), use an array of Isilon storage area network (SAN) servers. At present DLTS has about one petabyte’s worth of storage at its disposal, and Hoffman assured me this will certainly expand over the next few years. In addition, the files on the DLTS server are backed up weekly onto LTO tape.<sup>18</sup>

The collecting institution that wishes to “go digital” has to clearly communicate their needs to the digital library, and likewise, digital library services should clearly

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<sup>17</sup> Interview with Brian Hoffman, 31 March 2010.

<sup>18</sup> Interview with Brian Hoffman and Lisa Darms, 10 March 2011.

demonstrate what they are capable of offering to the archivist. However, the architects of information technology services often – perhaps increasingly less so in coming years, but presently more often than not – do not speak the same language as archivists; each is concerned with the handling of data in different ways, and the job abilities taken for granted by one may likely be a foreign language to the other. As the long-term survival of born-digital data in archival collections depends to a great extent on the capabilities of digital library services, there should be clear and constant communication between the two camps throughout any born-digital archiving project on what each body's responsibilities to the other are.

### **III. Related projects**

In discussions with the various parties involved with the processing of the Blake collection, it becomes apparent that the major players are very much feeling their way around. There are no best practices currently in place for the preservation of born-digital audiovisual material in such a unique context as this case. While an overarching survey of the current state of digital preservation projects in libraries is beyond the scope of this particular paper, it is useful to identify and describe in some detail some specific projects that have recently been undertaken, both by established large-scale digital repositories and by graduate student research in moving image archival studies. The following three instances are not exactly like the Blake project in terms of their objectives or designs; however, certain aspects of each case can shed some light into the problems and concerns that beset the preservation of born-digital files in an artistic context.

## A. NDIIPP – Preserving Digital Public Television

The National Digital Information and Infrastructure Preservation Program (NDIIPP) was established in 2000 by the Library of Congress with the goal of developing a sustainable digital preservation program for national archival collections. Working together with the Educational Broadcasting Corporation (13/WNET-TV), New York University's Moving Image Archiving and Preservation Program (MIAP), the Public Broadcasting Corporation (PBS) and WGBH, Boston, NDIIPP established the Preserving Digital Public Television (PDPTV) project in 2005. The goals of the Preserving Digital Public Television program are threefold: 1) to build a repository for born-digital public television programs, 2) examine issues related to content selection, cost and access, and 3) promote system-wide support for digital preservation efforts<sup>19</sup>. The project is noteworthy for the purposes of this paper because it is both specific to New York University's digital preservation system and because it is also working to create a blueprint for areas of born-digital preservation where there is none currently.

In March 2010, Joe Pawletko, the software systems architect for NYU DLTS, released a detailed repository design report for the PDPTV project. The prototype for the PDPTV preservation repository is compliant with the Open Archival Information System (OAIS), an archival model based on an organization of people and systems that serves a designated community for which material is to be preserved over the long term. Information in the OAIS model is ingested in the form of submission information packages (SIPs), which include the content to be preserved, as well as significant

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<sup>19</sup> Pawletko, Joseph. "Repository Design Report with Attached Metadata Plan." National Digital Information Infrastructure and Preservation Program. 19 March 2010. Accessed 7 April 2010, [http://www.thirteen.org/ptvdigitalarchive/files/2010/03/PDPTV\\_ReposDesign\\_2010-03-19.pdf](http://www.thirteen.org/ptvdigitalarchive/files/2010/03/PDPTV_ReposDesign_2010-03-19.pdf), 2.

metadata, digital signatures, and other relevant information as detailed by the content producer's submission agreement. Once in the preservation repository, the SIP becomes an archival information package (AIP) that contains both the SIP as well as preservation information added by the content producer. When a user puts in a query or order for information in the OAIS system, the repository outputs content in the form of dissemination information packages (DIPs), which are created for access purposes and which contain descriptive information necessary for the designated community.

For PDPTV's repository, the DLTS used a modified version of Dspace, an open source digital asset management system that has been widely adopted as a repository by many institutions. Dspace is built on the concept of open-knowledge sharing and long-term preservation and can be used for a variety of different content types. Systems administrators can configure Dspace to suit their particular archive's needs; for instance, it recognizes several standards of metadata, such as METS, MODS and DublinCore. As of this writing, PDPTV has established a Dspace-based media asset management (MAM) system that is managing a pilot case of eighty hours of footage collected submitted by WGBH, WNET and PBS. As noted in NDIIPP's summary of the MAM's implementation, the major faults of the MAM repository have been due to a lack of metadata standardization from the various content producers involved in the project. This results in the inability to sustain metadata across content's life cycle, and spurs the need to have a consistent application of metadata to all materials ingested into the repository<sup>20</sup>.

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<sup>20</sup> Marmor, Jonathan, Kara van Malssen and Daniel Goldman. "A Preservation-Compliant Media Asset Management System for Television Production." National Digital Information Infrastructure and Preservation Program. 27 April 2011. Accessed 10 May 2011, <http://cn2.wnet.org/thirteen/ptvdigitalarchive/files/2011/04/PreservationCompliantMAM2.pdf>, 8.

The PDPTV project differs substantially from the Blake collection in that the material being archived in the PDPTV is a) sourced from a variety of content producers, and b) is primarily concerned with broadcast media. The specific form of the repository for PDPTV, by extension, is more conducive to the nature of broadcast media (e.g. it supports the PBCore metadata schema), and the project altogether requires coordination amongst many more institutions (NYU, WGBH, PBS) than Blake's will. However, one of the goals of PDPTV was to fashion a "content neutral" preservation repository that could be flexible enough to be tailored to specific projects<sup>21</sup>. The modified DSpace repository established by the PDPTV project team should be adaptable within the context of special collections within NYU as well, as a preservation-compliant general repository would enable Fales and DLTS to perform the necessary preservation-related functions (e.g. checksums and fixity checks, application of technical metadata, etc.) inherent to long-term digital preservation.

## **B. inSITE Archives at UCSD/Supercomputer Center**

Because many university libraries and special collections have only recently implemented digital library services, many such institutions have either not yet collected or have not publicly disclosed any born-digital holdings in their custody. It is rarer still that any academic institutions possess artists' born-digital archives, given the relatively recent boom in digital art production. One academic institution currently grappling with the question of the preservation of born-digital artwork is the University of California, San Diego (UCSD). The Mandeville Special Collections Library at UCSD recently

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<sup>21</sup> Rubin, Nan. *Preserving Digital Public Television: Final Report*. WNET.org: June 2010. Accessed 3 May 2011, <http://www.thirteen.org/ptvdigitalarchive/files/2010/07/FinalReport.pdf>, 16.

acquired the archives of inSITE/Art Practices in the Public Domain, a locally based public art and advocacy project. Founded in 1992, inSITE fosters critical discourse on trans-national urban spaces through the exhibition of work from both sides of the U.S.-Mexico border. Since inSITE's founding there have been five major installations; the most recent, 2005's "Farsites: Urban Crisis and Domestic Symptoms in Recent Contemporary Art" was hosted in both San Diego and Tijuana and included works by Felix Gonzalez-Torres, Damian Ortega, Doris Salcedo and Catherine Opie. It was also the first inSITE installation to feature work in a museum setting at the San Diego Museum of Art<sup>22</sup>.

UCSD acquired the inSITE archives in the fall of 2009. According to Robin Chandler, former director of the Digital Library Program at UCSD, the inSITE collection consists of 200 cartons of material and comprises both paper and digital holdings. There are approximately two and a half terabytes (TBs) of digital content in various formats, the bulk of which were created in the 2000's. Among these digital items are Microsoft Excel spreadsheets, Microsoft Word documents, Apple iMovie files, and digital images (.gifs, .jpgs, .pdfs). With the audiovisual elements in the collection, UCSD must determine which files are the raw files and which are the final, edited copies for each artwork.

Another task that Chandler and Ardys Kozbial, the technology outreach librarian at UCSD, must undertake for this project is tracking down the artists whose works are represented in the collection. (While the project attracted many artists from across the United States and Mexico, UCSD is lucky in that many of the artists whose work was shown at inSITE installations are also UCSD faculty members.) Access presents another

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<sup>22</sup> "inSite: Art Practices in the Public Domain, San Diego-Tijuana." *e-flux*. 29 July 2005. Accessed 26 March 2010. <<http://www.e-flux.com/shows/view/2154>>.

issue for UCSD. At this point, the Supercomputer Center is unsure of whether to provide access solely to UCSD students and faculty or to create universal access to born-digital objects through their servers. Section 108 of the Copyright Code stipulates that digital copies cannot be made available to the public outside the library. At the time of the interview, there had been no plans in place for a migration or emulation strategy of the materials, or whether or not users will be permitted to access the master digital files or if the library will make copies; much of their concerns centered on intellectual property issues, as the collection contains the work of many artists.

One thing that both Ardys and Robin both stressed repeatedly, in their interview with the author, was that the very nature of the inSITE project is multi-institutional – no single component of their process would be able to navigate through the terrain of digital art preservation by themselves<sup>23</sup>.

### **C. Arcangel assessment**

In the spring of 2009, Walter Forsberg, a graduate student in New York University's Moving Image Archiving and Preservation program, created a file-level inventory of the artist Cory Arcangel's compact discs and hard drives. For this project, Forsberg was tasked with cataloging over 13,000 files off of Arcangel's hard drives and data CDs, which contained final files of his artworks, working image, sound, movie and session files, software programs and miscellaneous other files. To accomplish this he created a Microsoft Excel spreadsheet using the CDFinder disc cataloging tool, which generates Excel fields for folders and individual files while purging superfluous lines of

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<sup>23</sup> Chandler, Robyn and Kozbial, Ardys. Interview with the author. 17 March 2010.



folder data (i.e. .zip files). In doing so, Forsberg creates a disk image, or a representation of the directory structure and contents of Arcangel's hard drives. This is a crucial early step in transferring files from removable media formats such as CDs onto hard drives for long-term preservation. It should be stressed, however, that preservation was not a salient aspect of this project; rather, the assessment merely provided an overview of items in Arcangel's collection that would be the most likely to present the archivist with problems in the near future.

Forsberg admitted that the CDFinder software was not altogether to his liking; the software was unable to recognize certain file types and proved difficult to operate at first. (Several disk catalogers exist for this purpose, such as Disclib, CDLib, and Virtual CD, although functionality and metadata capture vary between each; others are more suited to the task of disk imaging than others.) Among the other issues Forsberg faced was the enormous quantity of file type extensions. A number of websites exist on the Internet that can be used to verify file format extensions, such as FILEExt ([www.filext.com](http://www.filext.com)), OpenWith ([www.openwith.org](http://www.openwith.org)) and the Global Digital Format Registry (GDFR), a joint project between Harvard University, OCLC, The Mellon Foundation and the National Archives ([www.gdfr.info](http://www.gdfr.info)). As the GDFR website notes, in order to be able to interpret the content of any file, it is first necessary to know what a digital object's format is. Among the most common file types that Forsberg discovered on Arcangel's hard drives were .sd2f, .txt, .wav, .pt4s, and .maxb files. .sd2f is an audio file format proprietary to Sound Designer II. .txt and .wav files are, respectively, plain ASCII text files and raw audio files that are widely supported across a variety of platforms. .pt4s and .maxb files, meanwhile, were

not recognized by FILEExt or other online file extension dictionaries<sup>24</sup>. The five files listed here represent a small portion of the two hundred file types that Forsberg discovered on Arcangel's inventoried CD-ROMs. As useful as online file dictionaries are as reference tools for beleaguered archivists who must confront the vast sea of digital file formats lurking in hard drives, it is an arduous task to research the origins of each individual file format. Furthermore, file types such as .sd2f that are not openly sourced present another problem altogether for archivists in that the associated proprietary software used to access these files may not exist at all at some point in the near future<sup>25</sup>.

#### **IV. Fales Project**

##### **A. Contents**

The Jeremy Blake Collection consists of six boxes of discs, tapes and devices that belonged to Jeremy; two hard drives of material found on Blake's computer at the time of his death, including projects in progress and personal e-mails and photographs; one hard drive containing documents pertaining to Blake's death (e.g. correspondence with the funeral home), collected and organized by Anne Schwartz Delibert; and three boxes of paper and printed materials, mostly magazines, consisting of reviews of shows Blake was in and reports on his and Duncan's deaths. This paper is mostly concerned with the six boxes of hard drives, storage discs, CDs, DVDs and other audiovisual media and the additional hard drives copied from Jeremy's home computer. Anne Schwartz Delibert

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<sup>24</sup> Forsberg, Walter. "Cory Arcangel & BEIGE." E-mailed to the author.

<sup>25</sup> Another aspect of Forsberg's Arcangel assessment that is not altogether relevant to the Blake project was deciding how to reckon with application files that Arcangel himself altered through creatively hacking or modifying software. Given the widespread adoption of hacking as an artistic strategy by web-based or new media artists, however, these modified files are something that an archivist will have to consider when making decisions on software preservation.

hired an outside project cataloger to inventory the six boxes of tapes, videos and discs in her possession before her donation to Fales. The resulting inventory is dated March 18, 2009.

The Fales staff is using this inventory as a guideline for the processing of this collection; however, the inventory as it stands right now only lists the items and a brief description of the label of each item, and there is no listing of the files on the computers or hard drives. Moreover, the labels on each CD or drive mean precious little to anyone not acquainted with the various projects that Blake undertook throughout his career. At his meeting with the author, Kinz was able to decipher certain descriptors of which the Fales staff was unsure – one disc labeled “PURPLE” he interpreted as relating to work that the art magazine *Purple* commissioned from Blake – but without actually playing the discs to see what is on them it would be impossible to catalog and arrange these discs in any meaningful way.

**i. Boxes holding media:**

The boxes of media in the Blake collection are currently numbered 1 to 6, with boxes 1 and 5 containing additional boxes within them (i.e., box 1 refers to loosely arranged items within the larger box, whereas boxes 1a and 1b are smaller boxes contained within box 1). The boxes consist of the following contents:

- Box 1: “Data Cartridges” according to the cataloger’s schematic; what this means precisely is unclear as the box contains DLT tapes, Sony Betacam tapes, Super 8 film and photographic slides.

- Box 2 contains two ZIP drive units with cabling, one IEEE-1394 FireWire hard drive, six blank EPSON zip cartridges and nine miscellaneous ZIP drives, three of which may be blank.
- Boxes 3 and 4 consist, respectively, of commercial software discs and assorted Blake memorabilia. The cataloger did not inventory the contents of these boxes.
- Box 5 consists of two separate boxes, 5A and 5B.
  - Box 5A: compact discs containing working files, final files and audio related to Blake's "solo" works, or completed artworks for which he was the principal creative director, such as *Guccinam*, *Liquid Villa*, and *Reading Ossie Clark*.
  - Box 5B: compact discs containing works on which Blake was a collaborator or performed as work-for-hire, e.g. works that he created for Rockstar Games, working files for the animations he created for *Punch Drunk Love*, pieces that he worked on with Theresa Duncan such as *A History of Glamour*, etc.
- Box 6: labeled "Back Up Discs", this box presumably contains CD-Rs that hold files that Blake either backed up for protection or transferred to discs from off of his computer's hard drives in the interests of freeing up space. Giffin's self-compiled list of the works that all of these files relate to, which effectively constitutes the near-entirety of his oeuvre, is attached as Appendix A.

While the author did not have time to inspect every CD and hard drive in the Blake collection for the aim of completing an inventory, a sampling of the contents of several of Blake's CDs reveals a wealth of different series and file formats. As the only Zip drive available was the one that came with Blake's collection, the author did not investigate those files, sticking mostly to removable media such as compact discs that were easily played on the computer in Fales' processing area. Most of these CDs were grouped roughly together by year and subsequently by project. Two discs labeled "guccinam gn a" and "guccinam gn b" contained QuickTime files of elements used in the production of *Guccinam*. "liquid villa after efx" contained three folders, labeled "after efx", "art" and "flik fodder" respectively. "after efx" contained a Unix executable file and a render log file (.txt) created in SimpleText. "art" contains two Adobe PhotoShop files, one called "Guccinam Anim FINAL.psd" and one labeled "Liquid Villa FINAL.psd". "flik fodder" contains three QuickTime files (animations presumably used as layers in *Guccinam*) and a Unix executable "fire file".

In the set of CDs comprising *Guccinam* and *Liquid Villa*, at least, there appeared to be both a final, complete version of the video (the one that would likely be distributed by his gallery to art collectors and museums) as well as the working files used to create those pieces, such as animation files, QuickTime movie files, audio tracks and Adobe PhotoShop images. The image files that correspond to each video piece are either elements used in the finished work itself, stills from the finished piece, or gallery or museum installation views. The processing archivist will have to determine the difference as they examine each disc.

## ii. Hard disk drives

Figure 1 below contains a disk image of one of the two hard drives donated to Fales by Anne Schwartz Delibert, taken from Blake's computer at the time of his death. The image provides the archivist with a visual snapshot of a hard drive's contents in the form of a tab-delimited Excel document. This disk image, labeled by Hoffman as "Blake\_713-manifest.xls" contains 15512 entries, each representing either a file or a folder. The full directory structure for a file is given in each row, e.g.

“./data/Blake/Devices/MacBookPro/data/jeremy-s-computer:/Volumes/Jerry B Space Station/Users/Jeremy/Documents/old 2Eudora Folder/Parts Folder/00000001 769.jpg.”

This particular hard drive contains both files taken from Blake's computer during his life, located in a top-level folder called “Jerry B Space Station”, as well as items added posthumously by Delibert in a folder entitled “Red Thumbdrive”. “Jerry B Space Station” appears to largely contain images - some personal, some perhaps used in works or as documentation of works – with several folders devoted to specific projects such as *Nick's Trip* and *Glitterbest*, the latter being a collaboration he was working on with Malcolm McLaren at the time of his death. There are also audio files, PhotoShop files, e-mail files, and fonts, among many other format types.

“Blake\_865-manifest.xls”, the other hard drive, contains an even more daunting number of files; 65535 of them, to be precise. These appear to largely consist of image files such as .jpg or .gif, and many of them are arranged in folders by year. (From the disk image and the scant description, it's difficult to tell if these are personal photos or whether they bear some relation to his artwork.) A folder entitled “SODIUM FOX FINALS” contains many PhotoShop images, and elsewhere there is a folder of files

associated with Adobe PhotoShop software (e.g. defaults, icons, plugins, and so on).

There are also audio files, QuickTime files and others that appear to be working files for some of his pieces. It will be the (admittedly daunting) task of the processing archivist to determine whether these files are copies or master files, and what relation they have to the chain of production.

### iii. **Sample hierarchical structure for media works**

Based on this small sampling of discs and files from Blake's collection, the following could be a sample template for, e.g., the files pertaining to the structure of *Guccinam*:

#### I. *Guccinam*

1. Master copy (as determined by archivist)
2. Working copies and work files (including images, audio tracks, Quicktime files, Unix executable files, AfterEffects files, and any other file that may have been used in the creation of the piece)
3. Documentation of the work (press releases, installation shots)

#### II. *Liquid Villa*, etc.

## **B. Methodology/processing**

One of the initial crucial steps of the Blake project was extracting data from Blake's hard drives. Delibert wanted to give Fales a copy of the data on her hard drives –

the files on Blake's computer at the time of his death and the files Delibert created on the hard drive with miscellaneous documents and correspondence about her son's death – and to hold onto the original hard drives herself. To accomplish this task, Hoffman used BagIt, a hierarchical file packaging format developed jointly by the Library of Congress, California Digital Library and Stanford University to transfer content across platforms for digital preservation. A BagIt file, called a “bag”, consists of a set of top-level tag files and a “payload”, or the data contained within the package (in this case, the information on Jeremy's hard drives). The top-level tag files are bagit.txt, which identifies the version of BagIt and the character set encoding of the tag files, and payload and tag file manifests that specify the checksum algorithms generated by the client. The subdirectory in which the payload is held is a folder called “data”. The files on the three hard drives that were transferred from Delibert's computer are now located on one hard drive at Fales; the original file structure of Jeremy's hard drives is preserved intact under the ‘data’ folder directory.



A	B
be3b7cb28b85d0f31b2ee9ddc8a2eddf	/data/Blake/ DS_Store
bda000738ab7039d1bdfb7dd9090787	/data/Blake/Devices/ DS_Store
66299aa7a930afc7199fcfb914d360a7	/data/Blake/Devices/Easy Drive/ DS_Store
693785333d82c5eb120bc770ab84b2ce	/data/Blake/Devices/Easy Drive/Easy Drive_md5deep.txt
2caa99c68c8c7d4a7781ebdb574818	/data/Blake/Devices/MacBookPro/ DS_Store
0a12a30e611239454a877d693964902	/data/Blake/Devices/MacBookPro/data/ DS_Store
ea62a90c5c134bc26c31754d33bd861	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ DS_Store
c32a387874e4ed24037c675aaf837	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/ DS_Store
c206c28c7b7f04b90b305258acd28e194	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/ DS_Store
68eb494bd56d4007386aa645bb972e10	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/ DS_Store
2329abb0b64eadae5120f6455e6c394	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/ DS_Store
f28e010932b2d373690ab3c5659a824	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/ DS_Store
b664f0bce1e070da4c24a5913be84f4	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/ DS_Store
77133f274ad636e7acbbea782627dec	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/000078-2a.jpg
24f8a8b6a7ef75d51758700b7093d9e	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/000078-2b.jpg
dc30afec8a901604b992e757717d4cc	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/0220072bank1.jpg
654103f4183863d5d1612030699a749	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/0601077Hustler.jpg
b3ba81961d4d3331e9859599497bcbf8	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/13733723-13733734-large.jpg
2152781c594c372d9ff4d60034a8f	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/17238_rbaby_1.jpg
040a80396d5aee26fa8ec858a671e	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/1974_bryan_ferry_01.png
b1405359b9b081e774ade753bd35	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/ DS_Store
6d2c4cde17f1fbad670189e70e27ab	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0003.JPG
27872076d02ef04c10d0aa1a3cae318	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0004.JPG
22a4c046e1c25401e7b6d603545b87809	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0007.JPG
44dc0922ad26c149776c117fde5f2fe	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0008.JPG
b377761e35735f6a2008557ad40fb9	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0009.JPG
aa48f65bdf6ad4c7db7225e2699c0b	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0010.JPG
83608952328910dfb6d2befe19977	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0011.JPG
3a8ec791f2c25cc75061a000750875d8	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0012.JPG
5f65cd18f6e328a9ad125eb5525b850	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0013.JPG
13b77482bb0898d5538d76ba9db96c1	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0014.JPG
49d275d08b522c8dd3a2b4090e5499a	/data/Blake/Devices/MacBookPro/data/jeremy-s-computer/ Volumes/Jerry B Space Station/Users/Jeremy/Documents/1Pictures Copied/2006_09_19/IMG_0015.JPG

**Figure 1: A snapshot of one of Blake's hard drives, obtained via BagIt. Column A indicates the checksum for each file. Column B lists the directory structure for each item as captured on the disk. Image courtesy Brian Hoffman of NYU DLTS.**

As of this writing, the collection is still in the processing stages. Lawrence Giffin, a library student from Queens College who is interning at Fales, explained that since the library was not yet prepared to deal with the born-digital nature of Blake's original donation, the items would likely be organized by media type rather than by project<sup>26</sup>. This would result in the creation of a "Media" series, with subseries for each type of media (e.g., film, audio, video, digital files). All the same, Giffin has created a master list of all the project titles that he discovered while sorting through Blake's archives (see Appendix A). Many of these works, it may be noted, are projects that even Kinz did not know about. Some files pertain to aborted projects, such as the adaptation of George Pelecanos' novel *Nick's Trip* on which Blake and Duncan collaborated.

<sup>26</sup> Interview with Giffin, 1 April 2010.

Little work has been achieved so far with the extraction of data on the CDs and hard drives on the part of DLTS. The author attempted to play back one CD-R, which contains production files for his piece *Liquid Villa* from 2000, on Fales' Mac OS X computer. The CD loaded very slowly, produced a harsh noise, and stalled completely when playback of a Quicktime file was attempted, necessitating a forced ejection of the disc from the computer. Several other discs responded in a similar fashion. This paper will address the role of media migration in digital preservation projects more in depth in Section V, but the faulty performance of these CDs indicates that even though Blake's work was created relatively recently (compared to other collections at Fales), the twin dangers of format obsolescence and physical media corruption threaten to thwart user access to these files.

### **C. Access issues**

Because the processing of this collection itself has been such a complex process, deciding the terms of research access has been given a somewhat lower priority, at least for now. To create descriptive finding aids, Fales uses Archivists' Toolkit, which ingests user-created data and exports an electronic archival description (EAD) file which may be used as a finding aid. This approach works well with traditional paper-based archives, but digital objects present issues that the present incarnation of Archivists Toolkit is unprepared to handle. Currently, the application supports accessioning and describing archival materials; establishing names and subjects associated with archival materials, including the names of donors; managing locations for the materials; and exporting EAD

finding aids, collection-level MARC XML records, and METS, MODS and Dublin Core records. There are a number of add-ons available on the Archivists Toolkit website, [www.archiviststoolkit.org](http://www.archiviststoolkit.org), including a Digital Object Batch Import plug-in that batch loads uniform resource identifiers (URIs) for digital objects represented in the finding aid<sup>27</sup>. Archivists Toolkit cannot yet, however, access data on a remote database; this requires a separate publishing function. Hoffman is optimistic that software developers will create a version of Archivists Toolkit that will enable access to data stored on a separate server through published EAD files in the near future, but at the moment he believes that technology is about three years off.

The patron's relationship to the items in the collection is something that also must be considered. Will patrons be able to access these files from a remote computer, or will they have to use a computer either in Fales or on NYU's server to access files? What specifically in the collection will they be allowed to access? What are the potential security risks? Would patrons be allowed to make "copies" of files in the sense that Fales provides photocopies of paper documents, and what means would they use to restrict dissemination if so? These issues must be seriously considered in any discussion of user access to born-digital files.

## **V. Recommendations**

Based on the preceding information about the current state of the Blake collection, the following is a list of recommendations meant to guide the Fales Library towards the processing of the files in the Jeremy Blake collection. These recommendations represent what might be considered the bare minimum for a digital

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<sup>27</sup> <http://archiviststoolkit.org/addons/nyu-do-batch-load-no-mets>.

preservation project of this nature, and as such consist of both concrete actions that Fales should undertake as well as more abstract principles that should act as a guideline towards future preservation actions.

### **Appraisal and Curation**

As the institution responsible for the physical processing of material, the collecting institution should first and foremost be responsible for curating which files should be made available in the collection and which should not. This process entails having discussions with the artist if he or she is alive, the artist's estate if he or she is deceased, and the artist's dealer if he or she is represented by one. Collectively, there must be a decision reached based on legal restrictions, research interest and uniqueness of the materials at hand. These conversations should inform the discussions that should take place between the processing archivist and the senior archivist at Fales with regards to what the library wants to keep and what it deems less important in the preservation triage process. For example, the innate replicable nature of files means that the same file might exist in several places on a person's hard drive; much as a research library might only choose to hold onto one or two copies of one document if multiple copies exist, multiple instances of the same file might also be afforded lesser importance. Additionally, the library might determine that the numerous default programs that come built-in with many computers, such as games, are of little importance to preserving the legacy of the creator.

Typically, a hard drive or computer consists of a daunting number of files, the product of a given user's many years of file creation. It is the archivist's task to sift

through this content and determine which material is of utmost concern for their institution. To assist with this first step, Fales should create disk images of all of the CDs and hard drives in the Blake collection. A disk image represents the complete structure and contents of a given data storage medium. It presents a picture of both what's on the storage medium itself as well as its relationship to the other files on the disk. This process also assists in verifying the authenticity of the files being appraised when checksums are run on each file. DLTS has done this already with the extraction of the files from Blake's home computer, but the same process should occur with all of the digital content in his collection.

### **Determining File States**

Once the archivist gains a clearer picture of what ought to be kept in Blake's collection, the next step is to determine which of these files should serve as the master copy for the collection. In the world of analog media preservation, determining the master copy of a film print or videotape in a given audiovisual collection is the necessary first step of any preservation project. For example, to create a new print of a 35mm from existing elements, an archivist will have to identify the elements available to them, such as the camera original, workprint, A&B rolls, soundtrack, and so on. In the realm of the digital, this process becomes somewhat trickier. Determining the state of a file – a working file, a finished product – should be subject to a similarly rigorous investigation. While the creative process varies from artist to artist – some are better about organizing their files than others – it cannot be taken for granted that any creative entity will label

their files so clearly. Artists do not necessarily create work with the idea that their materials will need to be archived sometime, or their self-archiving is based on a personal schema that does not square with the collecting institution's working methods. The labeling of discs, hard drives and files might make perfect sense to the creator but nobody else.

Given that the Blake collection contains both the working elements as well as the finished version of most of his works, it is imperative not only to have a complete listing of all of his works, but to know which element in the production process of the work that file represents, and how that work was created in the first place. It is up to the processing archivist to fulfill a curatorial role in this regard, to identify both the file state and its relationship to other files in the collection. Breaking this relationship could have potentially catastrophic consequences for the future access of that file and all of its associated files.

In order to identify the state of any particular file, a wide view must be taken with regard to the collection as a whole. The metadata associated with the original files must be kept intact, particularly any associated with the date of creation. The date of creation of a particular file should serve as a timestamp for sorting out a file's place in the production chain. For example, the finished product of a piece such as *Guccinam* or *Liquid Villa* is likely the version that was most recently created. It may be necessary for the archivist to attempt to play back the files to establish which one can be considered the master copy of a particular file. Fales should also consult with Kinz, Blake's dealer, on this step of the preservation process as he can help provide reference copies of Blake's finished works for the processing archivist to check against while assessing Blake's

working files. For file types that the archivist does not recognize or has difficulty playing back, it will be important to cross-check with a file registry such as FilExt to determine the program necessary to access those files.

When dealing with working files in Blake's collection, it is helpful for the processing archivist to keep in mind that many of the digital objects might be complex in nature. One example would be the images that Blake used in the creation of his video works, most of which were constructed in Adobe Photoshop. These works consisted of "painted" layers, applied one on top of another, that would later be animated, an ever-shifting series of layered abstractions. It is important for Fales to preserve these layers of digital information, as well as any affiliated files that go with them, so that the files retain their authenticity.

## **Preservation**

After the appraisal and curation processes have been completed, the next step should be to take the appropriate preservation actions. This will require the services of DLTS, who can provide storage, authentication, and representation for the data that they ingest. First, the processing archivist should deliver the CDs and HDDs to DLTS for the ingest process, along with the bundle of disk images that he or she has created at Fales. As part of the ingest process, the DLTS should run checksum verifications on all of the files on the CDs and hard disk drives in the Blake collection. The Dspace preservation repository that DLTS uses generates checksums at ingest, which can then be used to populate a tab-delimited text file that can be opened in Microsoft Excel and visually

compared to the checksum generated by the disk images that the archivist created for verification purposes. If there is a discrepancy between two checksums, then the DLTS and Fales need to assess the file for any possible corruption of data and then make a decision on its selection for preservation.

To date, there are two tactical approaches to the preservation of digital files: *migration* and *emulation*. *Migration* entails moving data from one platform, which might be outdated, to a more current platform<sup>28</sup>. The digital scanning and imaging of old, brittle books and photographic prints is one example of migration currently undertaken in many libraries. The conversion of Microsoft Word documents (.doc or .docx files, formats proprietary to Microsoft) into portable document files (.pdf, an open source file format) entails another kind of migration. Much like the transfer of analog video to a digital file format, the gist of migration is to protect assets from being unreadable on account of format obsolescence. Asset migration is an action that must be repeated every couple of years in order to keep files accessible.

While migration efforts are often undertaken at file-level, *emulation*, on the other hand, tends to work on the macro scale. Emulation, in the parlance of digital preservation, can refer to one of two strategies: creating a software program that replicates an entire obsolete system or user environment, or preserving the software used to run a particular program so that the file can always be played in its native environment. An example of this from the gaming world is NES emulators, software programs that enable a gamer to play Nintendo Entertainment System games on their home computers. The idea is not just to replicate the look of the old system but also the *feel*, the functionality. This approach is

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<sup>28</sup> Granger, Stewart. "Emulation as a Digital Preservation Strategy." *D-Lib* 6(10), October 2000. <http://www.dlib.org/dlib/october00/granger/10granger.html>.



useful when an archivist comes up against proprietary file formats, which depend on software that might not exist forever or whose creators plan a certain amount of obsolescence with their file formats (e.g. no backwards compatibility). Emulating the software needed to play back a proprietary file might be the only strategy that will work if the file's essence is to remain intact.

Each of these approaches has their benefits, but they also each have their own pitfalls. Migration addresses the need for digital objects to be constantly refreshed, but fails to account for the hardware, software or operating system that is used to open the object. For example, a QuickTime file is useless if there's no QuickTime software around to actually play back the file. The migration of old data into a new format engenders the loss of certain data, like any process of translation. This danger might perhaps be greatest in the case of proprietary software or hardware files, whose translation into open source formats might alter the file considerably, in terms of formatting or presentation. However, moreso than the loss of particular data, it is the loss of the original context of the file that is perhaps more important in a digital environment.<sup>29</sup> While refreshing data into new formats is a necessary and relatively inexpensive step to take for born-digital archives, there needs to be some kind of record of the older file format on hand as well, as a way to document Blake's original working conditions. In the same way that a film archivist would not throw away the camera original of a film which he or she has just preserved in a different format, the erasure of the original format would represent the erasure of the circumstances of that file's creation.

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<sup>29</sup> Lawrence, Gregory W. et al. "Risk Management of Digital Information: A File Format Investigation." *Council on Library Information Resources*, June 2000. Washington, D.C.: CLIR, 2. Accessed 25 April 2011, <<http://www.clir.org/pubs/reports/pub93/pub93.pdf>>.

As Suchodoletz, et al. (2010) point out, emulation consists of its own drawbacks, most significant of which for Fales is the need to have older versions of software on hand for files in Blake's collection that will likely be rendered obsolete in the near future (if they are not already obsolete). Not only will this require the construction and long-term maintenance of emulators for specific software, hardware and operating systems, a time- and labor-intensive process in and of itself (and which will require obtaining documentation of the systems being emulated as well as the securing of intellectual property rights thereof)<sup>30</sup>, but the archivist also needs to be knowledgeable of and comfortable with operating this software. For a creative entity such as Blake, the full-scale emulation of his working environment could provide a unique insight into his artistic process for researchers. However, the long-term cost of sustaining this environment is not insignificant and would require an investment of resources that DLTS and Fales may presently lack.

Because of this, a two-pronged approach might be the best way for Fales to proceed with the bit preservation of Blake's files. Simpler digital objects such as images and sound files have to be migrated or refreshed every so often to ensure playability. More complex ones such as AfterEffects files may require that Fales hold onto a copy of the software necessary to play the file back. The processing archivist should determine, when selecting files for preservation, whether or not Blake kept copies of this software on his hard drives. If so, Fales should hold onto this software so that the files can be played back; if not, the library may have to seek the services of someone who can create an

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<sup>30</sup> "Digital Preservation Strategies." *Digital Preservation Management: Implementing Short-Term Strategies for Long-Term Problems*. Inter-University Consortium for Political and Social Research at the University of Michigan, 2007. Accessed April 25, 2011, <http://www.icpsr.umich.edu/dpm/dpm-eng/terminology/strategies.html>.

emulator capable of playing back that file. However, all software, be it emulated or original, should be modified to only allow “read-only” playback of files; that is, users accessing files through the software typically associated with those files should not be able to modify or alter the file in any way.

As a general rule of thumb, collecting institutions need to clarify what their aims are for born-digital collections. For file migration, this entails conducting research into sustainable formats for future migration of material across generations. A sustainable format is defined by the Library of Congress as any format that exhibits all or most of the characteristics relating to seven different sustainability factors:

- *Disclosure* – the degree to which specifications for that format exist (e.g. SMPTE or IEEE standards), which allows for an information custodian to better visualize how a digital object is structured (and thus how it operates);
- *Adoption* – how widely used a particular format already is, and for what purpose (e.g. master or delivery formats);
- *Transparency* – how “human-readable” or open to direct analysis a format is;
- *Self-documentation* – the extent to which metadata can be embedded in a format, with the idea that the embedding of this metadata (e.g. basic technical, descriptive and administrative metadata) sustains a digital object’s life cycle with greater ease;
- *Lack of external dependencies*, or external hardware or software in order to run (e.g. joysticks, microphones), which has special impact on the

preservation of dynamic objects such as interactive art installations or video games;

- A negligible *impact of patents*, which might otherwise slow down the development of, e.g., codecs, which can in turn inhibit adoption; and
- A lack of *technical protection mechanisms*, such as encryption devices that are designed to inhibit transparency.<sup>31</sup>

While many of the above criteria do not apply to the Blake collection (e.g. external dependencies, which is more of a concern for complex media such as video installations), a transparent, widely adopted, and well-documented file format is ideal for any migration efforts that the library ought to undertake. There are certain exceptions, however:

Quicktime, a proprietary software program created by Apple, is a widely adopted and relatively transparent file format that is often an end-user delivery file (i.e. access copy)<sup>32</sup>.

Instead of converting to an open-source format, Fales may want to consider collecting older versions of QuickTime to enable playback of the earlier .mov files in the Blake collection. Either way, the decision of whether to migrate certain file formats to newer formats or not needs to be agreed upon by both Fales and DLTS, based on the risk the library takes on potentially losing important digital data.

## Access

The repeated mantra of archivists everywhere is “preservation without access is pointless.” None of the steps previously outlined would be worth it if there were no way

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<sup>31</sup> “Sustainability of Digital Formats: Planning for Library of Congress Collections.” *National Digital Information Infrastructure and Preservation Program*. Accessed 3 May 2011.

<http://www.digitalpreservation.gov/formats/sustain/sustain.shtml>.

<sup>32</sup> “QuickTime File Format.” *National Digital Information Infrastructure and Preservation Program*. Accessed 4 May 2011. <http://www.digitalpreservation.gov/formats/fdd/fdd000052.shtml>.

to provide access to Blake's files for patrons. At present, however, neither Fales nor DLTS seems sure how to actually create access to this collection. The typical collection at Fales is processed more or less according to this schema: a processing archivist takes a collection, goes through each box, performs necessary custodial actions (e.g. refiling paper into acid-free folders, replacing old media containers with ones that are archive-safe, and so on), imposing an arrangement on the material after consulting with the senior archivist, and then creating a finding aid in EAD for the collection so that Fales may publicize its availability for researcher use. The processing of Blake's collection, as we have seen, will entail many more additional steps that are largely not part of the extant access policy.

Access to the collection can only come after the curatorial process is complete; the archivist needs to know which files are which in order to arrange and present the materials in a way that makes sense to the user (i.e., intellectual arrangement). Prior to the actual bit preservation process, the processing archivist should start creating the EAD in Archivists' Toolkit for the files that they've determined to be selected for preservation. The archivist, who knows first-hand what each file represents and its significance in the overall archive, can populate the finding aid according to the general Fales template, which entails a historical note about the overall collection, a scope and content, a note about the provenance and series structure, etc. The archivist can also assign the appropriate descriptive metadata to each file folder, including name, unique ID number (in Fales' case, the three-digit accession number of the collection followed by a four-digit unique number, starting with 0001), file types associated with that folder, and dates of creation.

Once the EAD is created, the archivist should export that file to DLTS, where they will commence the preservation process as described in the prior section. DLTS should assign to each file a unique resource identifier (URI) that specifies each location's name and address as it exists on the DLTS server. This URI should be linked to in the EAD to enable patrons to access the file from the DLTS server. The DLTS should, after ingesting, assign the appropriate technical and preservation metadata to each file, which can be exported as an XML file to the library for their records.

The question also arises as to how, once the finding aid has been made available, Fales will be able to ensure data security of the items in the Blake collection. In terms of protecting sensitive material, the archivist can select to not publish materials in the collection in Archivists' Toolkit until such time as the provenance determines that the public should have access to those files. In another sense, there is also the issue of data security. An authentication system needs to be set up so that only certain parties are allowed to have access to the collection. DLTS and Fales should be the only parties entrusted with a password for accessing the collection in the Fales reading room. In order to best preserve the integrity of the Blake collection, the files should stay exclusively in the reading room.

There is currently one computer available for patron use in the Fales reading room. This computer is generally reserved for patrons who wish to browse Fales' online finding aids or BobCat, NYU's online library catalog. There is no dedicated computer for users who wish to access born-digital material at Fales, but this will be a necessary investment for Fales at some point in the near future.

A different kind of access that falls in line with Fales' *modus operandi* is the exhibition of materials from Blake's collection in a gallery context. Fales is cognizant of the increasingly blurred line between art and archive and has devoted many panels and exhibitions to the subject in the past. The exhibition of material from the Blake collection can at the moment only be spoken of in the hypothetical. The author brought up to Kinz the idea that one could have a show of materials from this collection at some point in the future. Kinz agreed, proposing that perhaps he and Fales could organize a show at the Grey Gallery, an exhibition space owned by New York University that has previously housed two large-scale exhibitions based on materials from Fales' special collections. Whether or not this show actually happens, the case of how – and whether – to display born-digital working files as art objects in and of themselves presents a number of interesting issues. The author suggested to Kinz that the working files that comprise a vast swath of Blake's hard drives are analogous to artists' sketchbooks or author's manuscripts in which they jot down ideas and rough drafts that form the basis of complete, finished works.

As a final, but no less important note, there is currently one computer available for patron use in the Fales reading room. This computer is generally reserved for patrons who wish to browse Fales' online finding aids or BobCat, NYU's online library catalog. There is no dedicated computer for users who wish to access born-digital material at Fales, but this will be a necessary investment for Fales at some point in the near future.

### **Other recommendations**

Another potentially useful tool that might assist in future endeavors would be the creation of a preservation survey for art dealers. As argued above, any gallery or dealer with a stake in the longevity of their artists' works should be concerned with the long-term preservation of their materials. Such a survey should make clear that dealers who represent artists who work in audiovisual media need to not only maintain a master copy of each of their artists' works, but to also pay attention to new shifts in audiovisual technologies that would require forward migration of material. Galleries keep records of museums and private collectors who own their artists' works. It is necessary for the dealer to offer not just replacement copies of broken DVDs but also to educate the potential collector of the challenges that reside in audiovisual artworks. With certain artworks there are additional variables to consider such as the nature of their exhibition. Blake preferred to have his works shown on flat-screen plasma television monitors. It is entirely possible, however, that somewhere down the line this technology will not exist anymore, at which point crucial exhibition decisions will have to be made. Will the aesthetic qualities of the work suffer if the original exhibition medium is no longer available? For Blake, this is a pertinent question, as his video works emphasize the flatness of the TV screen as analogous to the flatness of the painter's canvas.

A more general recommendation for both Fales and DLTS is to continue to be involved in discussions in the broader digital preservation community about new trends and tools that are being planned and implemented in other institutions. One particular ongoing development worth paying attention to is the planned merger of two widely adopted open-source archival management software platforms: Archivists Toolkit (currently used by Fales) and Archon. The combined merger, known as ArchivesSpace, is



still in the planning stages as of this writing, but it will incorporate features of both programs, as well as integrate new functionality (such as digital object storage) that may benefit Fales for processing future digital collections<sup>33</sup>.

## VI. Conclusion

There are a number of important lessons to be drawn from the example of Jeremy Blake's collection for libraries and archives. Perhaps the most important is that born digital preservation of artists' archives necessitates collaboration. Creating a preservation plan for the Blake collection will require not just the resources and skills of the collecting institution, but also those of the digital repository architects and the ancillary bodies who have a financial and personal stake in Blake's collection (in this case, his dealer and his estate).

There is another, perhaps more distressing lesson to be drawn from the particular case study of Jeremy Blake. Revisiting the collection in the spring of 2011, I interviewed Darms and Hoffman about the state of Blake's collection. They informed me that little, if anything, had changed since when I last talked to them in 2010. Blake's collection is the first of its kind for Fales: a collection that largely comprises born-digital materials (traditionally, Fales has accepted "analog" materials such as manuscripts, written correspondence and carrier-bound media such as film and analog video). The discourse of born-digital collections emphasizes how important it is to safeguard this material, invoking digital decay and format obsolescence as the primary threats to our digital

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<sup>33</sup> For more information on the proposed features of this merger (as decided on by a roundtable of archivists involving members of both Archivists Toolkit's and Archon's development teams), cf. "AT/Archon Integrated Application: Hi-Level Functional Requirements", 2010, accessed 3 May 2011, <http://archivesspace.org/documents/AT%20Archon%20HiLevel%20Reqs--FINAL-2010127.pdf>.

culture. While this is true, the acquisition of born-digital materials by a research library or archive does not in and of itself guarantee that collection's longevity if there is no preservation plan in place for digital files. As Matthew Kirschenbaum has noted, "Developing a robust infrastructure and long-term preservation plan are necessary steps toward demonstrating that an archival repository and its staff are trustworthy stewards of the born-digital materials in their care."<sup>34</sup> The active acquisition of born-digital archives can act as a catalyst for digital libraries to create the necessary infrastructure and establish protocol for digital preservation actions, but if an organization lacks the resources to do either of these things, the institution should ask itself whether the investment of time and money into acquiring these collections will be worth it, for both themselves and for the donor.

Pursuant to the above notion, a collecting institution such as Fales should also address what they plan to do with born-digital materials in every document pertinent to the archival acquisition process, such as their collection policies and donor agreements. Doing so will demonstrate to potential donors the library's preparedness to deal with born-digital materials and the security precautions that must be undertaken when dealing with sensitive archival materials.

## **Appendix A: List of Blake's Complete Works**

The list below was sent to the author by Lawrence Giffin, Fales' project archivist for the Blake Collection, via e-mail on April 1<sup>st</sup>, 2010. The list was compiled

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<sup>34</sup> Kirschenbaum, Matthew G., Richard Ovenden, and Gabriela Redwine. "Digital Forensics and Born-Digital Content in Cultural Heritage Collections." *Council on Library and Information Resources*. Washington, D.C.: CLIR, December 2010, 29. Accessed 24 April 2011  
<<http://www.clir.org/pubs/reports/pub149/pub149.pdf>>.

chronologically and includes his work in all fields, including digital c-prints (marked as 'dcp' by Giffin), drawings, digital video projections, music videos, video games and collaborations with Duncan and other artists. All parenthetical notes are Giffin's.

#### pre-1996

Work from School of the Art Institute of Chicago (where Blake got BFA in 1993)

Work from Cal-Arts (where Blake got MFA in 1995)

#### 1996

*Smarty* (w/ Duncan) (CD-ROM)

#### 1997

*The History of Glamour* (w/ Duncan) (video)

*Zero Zero* (w. Duncan) (CD-ROM)

*Retreat* (dcp)

*Camonad* (dcp)

*Best Western* (dcp)

*Airport* (dcp)

#### 1998

*Fireside Plush* (digital c-print)

*The Cold Room* (dig. c-print)

*Samurai Sleeper* (dig. c-print)

Silver Hill (exhib?)

One Hit Wonder (exhib? drawings)

Inglenook (exhib?)

*Lamp Tree* (dcp)

*Facade* (dcp)

*Black Swan* (dcp)

*Hotel Safe* (dcp)

#### 1999

*Bungalow 8:*

- Facade

- Black Swan

- Hotel Safe

*Hollywood Realism* (show w/ Michel Auder)

- *Sunset*

"Sucking in the Seventies" (drawings? exhib?)

*The Red Eye* (dcp)

"Grand Theft Auto 2" (Art Director, Front End Designer)

*Apres Ski* (dcp)

*Guccinam* (dcp)

*Director's Compound 1* (dcp)

*Director's Compound 2* (dcp)

*Incense Burner* (dcp)

*Thrasher: Skate and Destroy* (video game, production team)

## 2000

*The Forty Million Dollar Beatnik* (CD?)

*International Headquarters* (dig. c-print)

*Visitors Entrance* (dig. c-print)

## 2001

Station to Station:

- Robert Moses Terminal
- Carbon Sink Park
- Fordham Gneiss
- Slumber Line
- Indiglo heights

Mod Lang:

- Mod Lang
- Berkshire Fangs
- Chemical Sundown

The Slick Rhoades Story (drawings)

The disappearing Floor (dig. c-print)

New Haven (dig. c-print)

All Mod Cons (dig. c-print)

Liquid Villa

Angel Dust

No Mirrors (dcp)

Liquid Villa (dcp)

## 2002

Winchester (Part of Win. Tril.)

Fireside Plush (medium? date?)

No mirrors (medium? date?)

Beck's "Sea Change" (album art, video?)

Spiritualized (wears velvet gloves and sneaks gin...wipes its ass on sunbeams...must be buried again...tears through the floorboards looking for something...flies through the Door To Nowhere...expands nightly...keeps watch in the séance room) [7 panels, oil on canvas]

"Punch Drunk Love" (artwork)

Beck "Sea Change" (album art)

## 2003

Reading Ossie Clark

Cowboy Waltz (59th minute; part of Win. Tril?)

1906 (Part of Win. Tril.)

Lord Jimson's Flat (dig. c-print)

Slipping into Sleep (dig. c-print)  
 Find a Hidden Door (dig. c-print)  
 Look What the Wind Blew In (dig. c-print)  
 Planet Waves (dig. c-print)

#### 2004

"Autumn Almanac" (exhib? includes 30 small oils) (Hidden Treasures 1 [2001-2003], Yes It's My Real Name [2001-2003], Little Ms. Understood [2002-3], Stolen Glass Ashtray (For Dike Blair) [2002-3], Pink Palace [2002-3], Tarzana After Dark [2002-3], Medicine Chest [2002-3], Nyquil into Dayquil [2002-3], Am I really flying high over America? [2002-3], Gully Jimson [2002-3], Suns of San Joaquin [2002-3], Open Society (Michel Auder, Barnett Newman & Viva) [2002-3], Saffron Park [2002-3], The Grand Tour [2002-3], Zoom Out [2002-3], Future Skull [2002-3], We're for the Dark [2002-3], Blues Before Sunrise [2002-3], California Splint [2002-3], Moving Target [2002-3], The Young Detective [2002-3], Where to Begin? [2002-3], Beaumarchais [2002-3], Are you ready for the ocean? xv, Tall Poppy Preserve [2002-3], The Topanga Incident [2002-3], Hidden Treasures 2 [2002-3])  
 Century 21 (part of Win. Tril.)  
 Winchester Redux  
 Trick Pony (dig c-print)  
 The Witch's Cap (dcp)  
 Phantachrome (dcp)  
 Gower Gulch (dcp)

#### 2005

Sodium Fox  
 Every Hallucination on the Sunset Strip Vols. I,II (dig c-print)  
 Sodium Family Values (dig c-print)  
 Sight Gag (dig. c-print)  
 Sodium Fox (series of paintings) (Painted Wagon [2004], Sodium God, Sodium Father, Sodium Fox, Sodium Ancestor [2004], Sodium Flag, Sodium Familiar [2004], Sodium Agenda [2004-2005], All the Dirt (Blake Studio 2003-2005) [mixed media on canvas], Nobody's Child [2004], 461 Ocean Blvd., Fortune Teller [2004], Freedom (a phone call away))

#### 2006

Gospel of Lead (w/ Dario Robleto)  
 Tanner n' Tanner (series of drawings)  
 Hobhouse (dig c-print)  
 Olympischer Sommer (dig. c-print)  
 Nouvelle Huille (dig c-print)

#### 2007

Poster for "Chicago 10"

#### Unfinished:

Glitterbest (time-based portrait of Malcolm McLaren)  
 "Nick's Trip" (film w/ Duncan)

Miscellaneous:

Wyclef Jean "Everyday is a Holiday" music video  
 Across the Universe (his work does not make it into final cut of movie)  
 Brian Ferry "Dylanesque" (album art) (2007) [still unconfirmed, though he did try]  
 Beck "Round the Bend" music video (2002)

## **Appendix B: Preservation Bibliography**

The following section represents a list of pertinent literature for libraries and other institutions faced with the problems of preserving digital material. The papers, journals and articles listed presented here offer a cross-section of digital preservation strategies, economic analyses and case studies.

Anderson, David, Janet Delve, and Dan Pinchbeck. "Toward a Workable Emulation-Based Preservation Strategy: Rationale and Technical Metadata." *New Review of Information Networking* 15, no. 2 (2010): 110-131.

The authors of this article, who are affiliated with the Humanities Computing Group at the University of Portsmouth, UK, offers a practical discussion of emulation by proposing an emulation metadata data model that will form the basis of a virtual machine that will automate the preservation process. Additionally, this paper offers a cogent analysis of the primary voices in the migration vs. emulation debate, ultimately offering their model as a counter to both arguments, as well as exploring the technical environment necessary to create a sustainable emulation-based preservation strategy.

Berman, Francine. "Got Data? A Guide to Data Preservation in the Information Age."

*Communications of the ACM*, Vol. 51, no. 12 (December 2008), 50-56.

This article offers a general primer regarding the issues that digital libraries with which digital libraries ought to be concerned, with examples drawn from practicing archives (such as UCSD's Supercomputing Center). Berman offers ten guidelines for data stewardship, including planning for the transition of digital data to new storage media ahead of time and paying attention to security concerns.

Blue Ribbon Task Force on Sustainable Digital Preservation and Access. *Sustainable Economics for a Digital Planet: Ensuring Long-Term Access to Digital Preservation*.

February 2010. [http://brtf.sdsc.edu/biblio/BRTF\\_Final\\_Report.pdf](http://brtf.sdsc.edu/biblio/BRTF_Final_Report.pdf).

The Blue Ribbon Task Force, a consortium of librarians, archivists and information architects, was created in late 2007 to address the economic sustainability of digital archives. This publication is the group's final report, which details the concept of sustainability in a variety of institutional contexts, e.g. research libraries, corporate archives, etc. The report also recommends further actions for institutions to take towards sustainable preservation, such as how to decide which materials are worth preserving, who should be responsible for preservation, and how to maximize an institution's economic investment in digital preservation activities.

Higgins, Sarah. "The DCC Curation Lifecycle Model." *International Journal of Digital Curation* 3, no. 1 (2008).

<<http://www.ijdc.net/index.php/ijdc/article/view/69>>.

Higgins' paper addresses the curation lifecycle model established by the UK-based Digital Curation Centre. The lifecycle suggests steps that a library or other collecting institution should take towards the custody and long-term preservation of born-digital materials, including short-term strategies (i.e. appraisal and integrity checks) and long-term strategies (i.e. data refreshment and backup). (Moreover, the *International Journal of Digital Curation* is a highly recommended source for developments in digital curation processes, providing both practical examples and offering more theoretical approaches to the subject.)

Kirschenbaum, Matthew G., Richard Ovenden, and Gabriela Redwine. "Digital Forensics and Born-Digital Content in Cultural Heritage Collections." *CLIR Reports*, 149 (December 2010). Washington, D.C.: Council on Library and Information Resources, 2010.

Kirschenbaum et al. discuss the concept of forensics as it applies to born-digital archival collections. Forensics involves verifying the integrity of digital material using tested scientific methods. As the paper argues, digital forensics is an essential step for archives who need to ascertain that the material they are working with can be authenticated and therefore of scholastic importance.



Naumann, Kai, Christian Keitel, and Rolf Lang. "One for Many: A Metadata Concept for Mixed Digital Content at a State Archive." *International Journal of Digital Curation* 4, no. 2 (2009).

<http://www.ijdc.net/index.php/ijdc/article/view/120>.

This article, published by members of the Landesarchiv Baden-Württemberg, details a metadata implementation strategy involving both born-digital and digitized materials. The findings of the paper suggest that the assignment of persistent identifiers is key to interoperability between generations of archival practices (i.e. from analog to digital), as well as that digital repositories should provide relational integrity between a digital object's content and its associated metadata.

Suchodoletz, Dirk von. "A Future Automation and Emulation Research Agenda."

*Automation in Digital Preservation* 10291. 3 January 2011.

<<http://eprints.rclis.org/bitstream/10760/15239/1/future-emu-dp.pdf>>.

Suchodoletz contends that with the vast amount of digital data that exists, automated services will be helpful for processing archivists and data curators. Here he outlines an emulation-based strategy for complex digital objects that includes building a "preservation aware" emulator as well developing a standard information protocol called Virtual Network Computing.

Wilson, Andrew. "How Much Is Enough: Metadata for Preserving Digital Data."

*Journal of Library Metadata* 10, no. 2/3 (2010): 205-217.

Wilson's largely theoretical paper focuses on the methodologies of preservation metadata implementation, and emphasizes the need for such an implementation that addresses and supports the reliability, usability, integrity and authenticity of digital objects over time. The paper concludes with a statement that should be kept in mind when undertaking any digital preservation project: "Digital preservation specialists, many of them with information technology rather than information management backgrounds, need to work closely with domain specialists to ensure that the aims and promise of digital preservation are realized for all concerned communities."

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Kirschenbaum, Matthew G., Richard Ovenden, and Gabriela Redwine. "Digital

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