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The Philosophy of What We Are Doing

Introduction

The field of conservation is poised to add another specialty into its midst, Time Based Media. Time Based Media pieces are defined as, "Contemporary artworks that include video, film, slide, audio, or computer technologies are referred to as time-based media works because they have duration as a dimension and unfold to the viewer over time." (Guggenheim, 2017). Though the field of conservation has a long history, Time Based Media as a formal and recognized specialization within the field is just beginning to emerge. Traditionally Time Based Media pieces have been treated as oddities rather than a cohesive specialization. However in the last few years institutional funding for and awareness of the unique needs of Time Based Media pieces has increased greatly. As NYU's IFA prepares to launch a graduate program specializing in Time Based Media the field seems to be on the precipice of being considered a specialization defined by its properties alongside paper or objects conservation. In order to properly understand the direction in which the field is headed I've studied the history of conservation and available Time Based Media case studies. In addition I've conducted interviews with

people in all stratas of conservation while working in the Guggenheim's Time Based Media Research Lab as an independent contractor.

In this paper I lay out my reasons for believing that the future of the field hinges largely on the direction of the as of yet unimplemented curriculum of the IFA and how I believe that curriculum will develop; as well as how the current lack of an official degree for this type of conservation in the U.S has shaped the burgeoning field. Caring for Time Based Media pieces necessitates a deep understanding of art and technology. In evaluating pieces of contemporary art the viewer is informed in part by the medium used and the process of creation. The technological composition of a piece, which hardware is used or how the software is coded, shapes the viewer's understanding if they have a sufficient technical background. The IFA is at a critical juncture, if they produce students who lack in depth technical knowledge they will create conservators who cannot understand a critical dimension of the works in their care.

Literature Review

Andrew Abbott's hugely influential book the "Systems of Professions" loosely defined professions as "somewhat exclusive groups of individuals applying somewhat abstract knowledge to particular cases" (Abbott, 1988). Although vague this does manage to immediately get across the idea of exclusivity which is so crucial to professions. In order to be considered a profession there must be some sort of codified knowledge base or skills practice unavailable to the average layperson with formal mechanisms for dissemination. In this respect the conservation of Time Based Media

certainly qualifies. Though in its infancy, there is currently no school offering a specific program in time based media, I consider the on the job training that people doing Time Based Media conservators are receiving to be a form of apprenticeship reflective of the field's infancy and specialized practices.

Abbot's book is generally considered to put forth five theses on professions, and I'd like to take time initially to outline how they relate to the ongoing development of the Conservation of Time Based media as a profession.

Professions are "ecological" in their development

Observing professions from an "ecological" perspective means taking into account the environment in which they are developing. This holistic analysis is especially necessary when developing an understanding of how Time Based Media came to be a distinct specialization with conservation. Conservation has always been tied closely to museums and the whims of a few rich families. The development of the field and the research it conducts is inherently dependant on what works of art conservators have access to, both in graduate school and in their professional lives. In the case of museums this is largely determined by curators, who choose what works the museum will acquire and then turn over responsibility for their care to conservators. Decisions by schools and independent owners of art to conserve holdings are determined by the openings of whoever happens to have sufficient funds to lure a conservator. "Curators and benefactors clearly shape how museums work with and possess art. Therefore an understanding of trends in the field must include an

understanding of curators and benefactors as independent actors with their own history and agendas.

To understand professions, one must study jurisdictions

Abbot defined jurisdiction as the realm of knowledge that a particular profession has control over. When applying this concept to Time Based Media the professions "jurisdiction" would be considered the conservation of works of art with variations inherent in their installations. Previously such works might have been classified based on their components, for example, as multimedia pieces, but in recent years a shift has occurred. It is evident that Time Based Media pieces should be considered as unique conservation challenges. Otherwise pieces can become temporarily or permanently unshowable due to the neglect of a museum's conservation department. With other forms of artwork such as paintings or papers the "shelf life" of a piece can be determined based on a series of fairly reliable calculations. If a painting is stored in the proper climate and it remains unmolested it will not have greatly changed over the course of a decade . To apply the same techniques to the conservation of software based art is to, in the words of a head conservator at the Guggenheim, "Store a Van Gogh in a wet garage with the door open"

Professions constitute a system

While a useful metaphor for understanding professions Abbot's thesis has been challenged by a number of other sociologists including Macdonald's rebuttal in "The Sociology of the Professions"

"I take issue with the basic premise of Abbott's thesis that professions constitute a system for a number of reasons...Professions, by contrast are competing in a marketplace where they may or may not impinge on each other and where they also compete, conflict and collaborate, in a quite non-systematic way with non-professionals"

In my own study I have found that conservation fits MacDonald's definition better than Abbott's. Conservation has a strongly defined internal standards of operation and yet it is not a closed system. Conservators often consult with non conservators when working on a piece. This makes the addition of Time Based Media a bit more complicated, since it doesn't so much constitute a unique system as it is an addition to the existing system of conservation. There is already a complete system of professional support and funding in place in the United States for conservation. The challenge comes when attempting to add a new subcategory to this healthy system. From whom will it take money? And how will this affect inter-profession conflicts? Conservation as a whole is a collaborative profession. It cannot be ascertained at this time if the gradual elevation of time based media upsets this balance.

Professional struggle occurs at three levels, the workplace, culture/public opinion and legal/judicial rulings.

This thesis hypothesizes that there are three conflicts that all professions encounter, intra workplace conflict, external public/culture conflict and external legal conflict. I found evidence of all three types of conflict during my research but they were internal conflicts rather than external. The current unstable nature of the field has created internal and workplace conflict. The purview of Time Based Media is currently up for debate. Part of the reason the IFA has been holding public lectures is in an attempt to reach some modicum of consensus on what a program for Time Based Media conservation should entail. Legally there is conflict around the type of agreements museums should make when acquiring Time Based Media pieces. Though there is the acknowledgement that these pieces will require a new type of relationship with the artist there is no clear sense of what that is. This lack of consensus has created workplace conflict in regards to hiring criteria and best practices of Time Based Media conservators. There is a lack of agreed upon standards and scope of practice so any action taken by a museum is done in the spirit of pioneering. Culturally, there has been a struggle on the part of Time Based Media focused conservators to convince museums that there are pieces in their museums that need specialized care and attention. One of the complications is that Time Based Media pieces usually make up a small percentage of a museum's overall holdings. Institutions have been slow to change the ways that they allocate funding to the conservation of such pieces.

When a museum acquires a piece they enter into a contract with the artist. These contracts are usually accompanied by an artist interview to get a sense of their interpretation of the work and are traditionally fairly boilerplate and more about an

official transfer of ownership. However the changes which are inherent to Time Based Media mean that the contract the museum enters into with an artist and the interview they conduct during this process differ greatly from the traditional process. Since there are no formal codified best practices the exact nature of these relationships will differ across museums. However there seems to be a growing consensus among professionals dealing with Time Based Media that an ongoing relationship with the artist is crucial.

Successful professions have a monopoly on a core knowledge base

This is the thesis to which Time Based Media adheres the strongest. There is virtually no debate within the field that Time Based Media artworks are a class onto themselves deserving special consideration. The conflicts arise when attempting to convince institutions to fund the necessary research and staff. Notably while the need for special training for conservators has been recognized for some time a formal training program is only now beginning to emerge as are inter institutional working groups. It may be too early to determine which viewpoints will eventually come to bear the most weight but it seems fair to say that this early intra professional conflict is an attempt to solidify the knowledge monopoly of Time Based Media. One thing emphasized in interviews and elaborated on further below was the overlap of various conservation practices. Conservators see conservation as a changing and rapidly adapting field that necessitates collaboration so that an objects conservator and a paintings conservator

may have their opinions asked about the same piece, allowing ideas to cross institutions readily.

Other Voices Other Rooms (With books besides Abbot's)

One theme that consistently emerged in the literature studying professions was that professions were a form of monopoly. Closely following this presumption was one which suggests that the ways this monopoly was maintained was through formal (and limited) education. Friedson neatly summarizes the contradictory relationship professions have to education "The two most general ideas underlying professionalism are the belief that certain work is so specialized as to be inaccessible to those lacking the required training and experience and the belief that it cannot be standardized, rationalized or, commodified." (Friedson, 2001.) Though seemingly contradictory this statement makes a great deal of sense if we think of professions as monopolies. As Larson states,

> "Professionalization is thus an attempt to translate one order of scarce resources - special knowledge and skills - into another - social and economic rewards. To maintain scarcity implies a tendency to monopoly: monopoly of expertise in the market, monopoly of status in a system of stratification "(Larson, 2016).

This begs the question what is the jurisdiction of Time Based Media's monopoly? As stated earlier Time Based Media doesn't currently have a clear jurisdiction, which is one of the barriers it faces in achieving full professional status. In addition it lacks a formal

education mechanism until the IFA's program begins. However once the IFA's program does begin a true monopoly will be born. As the only program in the United States offering a degree in conservation specializing in Time Based Media the IFA will be the standard for Time Based Media curators, and indeed the only criteria for offering a job.

While the creation of the IFA's program will go a long way to formalizing Time Based Media conservators status as professionals it will not ameliorate the intra and inter professional conflict that the field will likely still be undergoing. Macdonald has observed: "Although a profession may be granted or may secure for itself a monopoly, it still must strive in the arena or compete in the marketplace against others who can provide similar or substitute or complementary services. It must, therefore, at the least defend and probably enlarge the scope of its activities".(Macdonald, 1995). This gets at a point that I explored further in my interviews. Several definitions exist as to where exactly Time Based Media sits within the conservation field. Joanna Phillips considers Time Based Media to be a subset of Contemporary Art and when I interviewed IFA representatives they seemed to be of a similar mind. So where exactly would Time Based Media conservators sit in the market place? Their competitors are obviously other conservators but how will the scope of their work continue to grow and expand past the initial definition phase of the field? Will they begin conserving works that were perhaps previously catalogued under other definitions? Perhaps it will include more hands on technical knowledge, with conservators of Time Based Media occupying a role somewhere between traditional conservator, fabricator and technician. In my

interviews with IFA representative I attempted to get an answer to these questions and my thoughts on the subject are expanded further in the interview section.

Out of the Fogg: A brief history of conservation

The conservation field has gradually evolved from a series of apprenticeships to a recognized profession with international organizations and institutionalized learning. Similar to other professions it began with a series of small working groups and slowly gained legitimacy. "In England and the United States the tendency was for each occupation to have to mount its own movement for recognition and protection" (Friedman, 1977). In Europe investigation into the scientific aspects of art were done by Louis Pasteur as early as the 1870's. In 1888 The Staatlich Museen in Berlin established a department dedicated to scientific investigation into conservation, and in 1921 the British museum followed suit. In the United States similar developments occurred, "A special climate of cooperation among scientists, art historians, and restorers developed at the Fogg Art Museum in the late 1920s." (Stoner, 2017). The Fogg Museum quickly became the defacto center of the profession in the United States, formally launching its technical laboratory in 1928. Previous to this, there had been individual actors scattered across various U.S museums without much cohesion. This was the first major step in legitimizing the profession and separating it as a formal and distinct practice in the museum world. The Fogg Museum began accepting interested applicants as apprentices and training the next generation of conservators almost immediately, ensuring that the fledgling practice remained tight knit and of one mind.

In the early 50's the Fogg team was dispersed due to funding, and the field was forced to adapt. This was significant both to the development of professional organizations for conservators and the practice of formalizing the study of conservation. One of the original members was part of the creation of the Intermuseum Conservation Association at the Allen Art Museum in Oberlin, Ohio in 1953. This association currently still exists with 12 centers. The creation of associations for practitioners can be considered a milestone towards the formulation of a "profession". Currently there are five professional organizations that offer memberships to conservators, "The Midwest Regional conservation Guild, "Wester Association for Art Conservators", "Washington Conservation Guild", "Bay Area Art Conservation" and the "American Institute for the Conservation of Historic and Artistic Works". Of those institutions only one, "the American Institute for the Conservation of Historic and Artistic Work" is national, with the others being guilds based around regional membership. The AIC is an offshoot of an international group of conservators that was established in 1972 and offers American conservators a connection to the global community. This inclusion was a critical point in establishing the legitimacy of the field in America. After connecting conservators in the United States to an organized body they became subject to uniform professional and educational opportunities. The AIC is also the only organization to address "electronic arts", a specialty group called the Electronic Media Group within the organization was created in 1998 and now boasts 250 members.

Importantly in the about section of the Electronic Media Group "time-based media" is listed as a subtopic alongside digital imaging in conservation documentation

and other topics simply involving digital technology. Its main educational outreach, techFocus, recently held its third annual conference which focused primarily on Time Based Media but it is by no means the groups only purview.

After Fogg's closing there was no formal academic training available to potential conservators in North America until in 1960, when the Institute of Fine Arts in New York City opened its laboratory. In the United States there are currently three schools that have programs offering a M.S or M.A in Art Conservation specifically, rather than "archeological" or "ethnographic/historical" conservation or a related degree program. The NYU/IFA program emerged first followed by the Buffalo State University and the University of Delaware in Newark.

With such a small number of schools, changes to individual curriculums can influence whole generation of practitioners. It is crucial then to balance the tradition of the practice with new emerging technologies. At the moment, the educational future of conservation is faced with an interesting problem. Museum's are hiring for specialists in "Time Based Media" and the IFA, eager to be on the forefront of this development, is creating a new specialization within its graduate program. NYU's website acknowledges this in their "about" section, where they discuss a major overhaul of the curriculum that took place in 2003-2005. Many of the people involved in that shift are also taking part in the creation of the IFA's new curriculum. Before discussing the development process of the curriculum, the emergence of Time Based Media both as an art form and a specialization within conservation must be explored.

Art that might be considered Time Based Media was being produced as early as the late 50's and involved the technology of the time. Understandably all of the Time Based Media pieces produced at this time were stored terribly, and indeed very few written records exist about them as the field of conservation was still being formed and moving out of its apprenticeship stage. In the late 90's organizations began to emerge within the conservation community to address this specific form of art, which coincided with the first major netart piece being acquired by a museum. Shu Lea Cheang's BRANDON was acquired the by Guggenheim in 1998 as part of a new initiative to create a "virtual museum" branch of the Guggenheim. One of three "software based art" pieces eventually acquired by the Guggenheim, it represented a particular period of 90's net art work. Unfortunately at the time of acquisition there hadn't yet been many case studies on how to conserve such a piece of work, and the documentation upon its acquisition was sparse. When it fell into disrepair there was an "investigation" process to establish documentation that should have been done decades ago. While conducting my thesis research I began working at the Guggenheim as a contractor restoring this work, which heavily influenced my view for the future of Time Based Media conservators.

The first professional working group addressing the conservation of time based media was created in 1999 and based at the Guggenheim until 2004. The Variable Media Initiative was a research project that later spawned an independent entity devoted to creating a precedent for conserving Time Based Media. "The Variable Media Approach" the result of the research project is one of the more well-known texts on the

topic. The second organization Matters in Media Art was created in 2005 and involves the New Art Trust, MoMA, SFMOMA and Tate. The consortium launched its first phase, on loaning time-based media works, in 2004, and its second phase, on acquiring time-based media works, in 2007. The third group is the "Smithsonian's Time Based Media and Digital Art Working Group" which began in 2010 and staffs exclusively from within the Smithsonian making it a more insular group than the others.

The standards set forth by these groups both in the form of conferences and papers are actively being incorporated into the development of the IFA's curriculum. Though it hosted the group, until the appointment of Joanna Phillips as the Associate Conservator of Contemporary Art in 2008 the Guggenheim did not have a specialized department. Now it has a Time Based Media Lab devoted to the topic and recently hosted TechFocus III, a conference about developments in the field.

Methods

In the Fall of 2016 the IFA at NYU began hosting a series of lectures focused on Time Based Media in the hopes of publicizing and getting feedback on their developing curriculum. With ten lectures the series explored both the history of the artform and the unique questions that conservators working with Time Based Media must face. Talks were given by university professors, artists, conservators and one researcher who had performed an in depth historical analysis of the conservation of Time Based Media. With time to mingle afterwards and short talks with a recurring cast of attendees these talks served as both education and social functions, giving those interested a chance to meet

semi regularly with those developing the curriculum. Staff from several prominent museums including the Guggenheim attended and in such a small community of professionals all are interacting with each other and influencing their ideas about best practices.

In hopes of gaining a better picture of the field I attended all of the lectures the IFA hosted in the Fall and began working as a contractor with the Guggenheim restoring a piece of art I'd previously worked on as an intern. During the course of writing this thesis I was paid for the contracting work at the Time Based Media Conservation Lab where I worked on restoring BRANDON. I have supplemented my own personal experiences with those of five interviews I conducted with researchers at NYU, staff at the IFA involved in developing the programs curriculum, and conservators at various institutions.

Results

The field of conservation as a whole is extremely small.The Bureau of Labor Statistics lumps Museums Technicians and Conservators together and estimates employment in 2015 as 10,750 with mean annual wage $44,880. Of technicians and conservators working at museums rather than the federal government or a university is estimated to be 4,920 with annual mean wage at 41,520. It's important to remember these figures are most certainly too high given that they are not focused on Time Based Media specifically, though evidence exists that there is hiring interest in the field. The Guggenheim recently filled a two year fellowship position in the "Conservation of

Computer Based Art" and several museums internationally are hiring conservators with experience in Time Based Media. This has created an uncertain moment within the conservation field. Though professional groups have existed for a few years there is no program dedicated to training professionals specifically in the subset of Time Based Media. Consequently advertisements for jobs cannot yet require a candidate to have studied or specialized in Time Based Media. The current standard seems to be someone with an advanced degree or certificate in conservation and any sort of experience with Time Based Media, as seen in the Guggenheim's CCBA ad, "The successful candidate will have a completed MA degree or Advanced Certificate from a U.S. or international fine arts conservation program, with a focus on and/or practical experience in time-based media conservation."(Guggenheim, 2017) and the Tates conservator of Time Based Media ad, "You will either hold a recognised qualification in conservation or have equivalent relevant experience for working with time based media artworks." (Tate, 2017).

Such qualifications will inevitably be revised after the establishment of IFA's program specializing in the conservation of Time Based Media. Accepting the following definition, "A profession is a learned activity, and thus involved formal training, but with a broad intellectual context" (Bell, 1973), then the IFA's attempts to create a new specialization within their program can be viewed as one of the steps towards legitimizing the Conservation of Time Based Media as its own subfield of conservation. This speaks to the distinction between ameatur and professional that Friedson articulated in "Professional Powers". Unfortunately the jobs right now are essentially

being filled with professional conservators who are amateurs in Time Based Media. With the development of a formalized education program the new standard will be professional conservators of Time Based Media. Everyone interviewed agreed on this point, once a degree is introduced candidates from that program will become the ideal candidates for Time Based Media conservation positions. Subsequently the institutions hosting such programs will bear a great responsibility to the development of the field, as they will be producing future best practices.

At the moment no other university has announced plans to create a program specifically for the conservation of Time Based Media, which has created a de facto educational monopoly. As pointed out earlier, this puts an enormous amount of responsibility in the hands of the IFA as they develop their curriculum. As of yet no formal decisions have been announced as to what the curriculum will entail, though it appears that Time Based Media will be a major alongside the conservation of Paper, Objects, and Paintings.

Two of my interviews were conducted with IFA staff, and focused on answering some of the questions that arose in my initial research. In talking to them I focused on what exactly their understanding of Time Based Media was, how it fit into the existing landscape of conservation, and what sort of student they anticipated producing. The answers I received shed more light on the two divergent paths that the program might take, and what those within the program predict for the development of the field and their future students.

The IFA program is unique in its curriculum since students graduate with both a masters of science in conservation and a masters of arts in art history. From this perspective it is a school that focuses more than most on theory and history in conjunction with the technical training that conservators receive. This poses a unique challenge for a Time Based Media focused curriculum, since there are essentially no canon theories or best practices associated with the conservation of such piece.

When asked about the direction of the program, both interview subjects said that the IFA would likely only be able to take 2 or 3 students in the first year and that they would be recruiting from technical schools to do so. Both admitted the large amount of uncertainty inherent in designing a program for a pool of students they haven't yet met, and expressed optimism about the integration of technical knowledge with traditional conservative training.

The IFA representatives current thought is that a Time Based Media student's education will overlap with the IFA's existing objects training. As of now prerequisites still reflect expectations for paintings or objects conservators and no particular Time Based Media prerequisites have been announced. The education that Time Based Media focused students receive will also closely resemble the education of a traditional objects conservator. Because the IFA program offers dual degrees, a year and a half or so is dedicated solely to art history education; then comes the actual training to work on objects and the theoretical aspects of conservation and an internship. The IFA seems to be having difficulty deciding where to put in Time Based Media education into this already packed schedule. Part of the problem they face is that there isn't an established

equivalent course load that they can easily direct students towards to ensure that conservation principles are being properly conveyed while working on Time Based Media pieces. They are being forced to create an entirely new type of coursework from scratch. Another complication is that the Time Based Media field is still extremely small. The Guggenheim is one of the only institutions that has staff dedicated to the care of Time Based Media pieces. A Time Based Media conservator would likely not be able to find a position where they only cared for Time Based Media pieces. Instead they would occupy a role more similar to that of a traditional objects conservator.

The IFA seems hesitant to break with previous traditions. Both people I spoke with about the curriculum mentioned that they anticipated Time Based Media conservators would work at institutions where they would also be in charge of traditional works. When probed about exactly how technical they anticipated the program becoming they were vague. In terms of software based art, they discussed having perhaps one or two intro courses to introduce students with no previous coding experience to the idea of source code analysis.

One IFA interviewee, when asked if they were aiming to train generalists or specialists said, "It depends on the student however the jobs will lean towards generalists". This indicates that though the IFA will be focused on producing generalists they would support a student seeking to specialize in something more specific during their studies. Since so much of the curriculum is still in flux it remains to be seen how the IFA will balance these ideals in practice.

Part of the program's development was a series of lectures open to the public. With ten lectures, the series has explored both the history of the artform and the unique questions that conservators working with Time Based Media must face. Talks were given by University Professors, artists, conservators and one researcher who had performed an in depth historical analysis of the conservation of Time Based Media. With time to mingle afterwards and short talks with a recurring cast of attendees these talks served as both education and networking. Giving those interested a chance to meet semi regularly with those developing the curriculum. Staff from several prominent museums including the Guggenheim have attended and in such a small community of professionals all are interacting with each other and influencing their ideas about best practices.

Attending these talks gave me a better understanding of the history of time based media and how conservation looked from an artist's perspective. One of the most interesting takeaways was the unique relationship that conservators dealing with Time Based media have to artists. In the first talk in the series Pip Laurenson characterized Time Based Media as art that changes with each installation. Since many Time Based Media pieces deal with electronics or other technology that must eventually be replaced, conservators are oftentimes forced to reinterpret a piece in order to display it, with the artist's permission of course. What the artist agrees to in regards to conservation will vary. It is up to the Time Based Media Conservators to conduct thorough interviews with artists upon acquiring their piece and maintain good relationships with them moving forward. Because Time Based Media pieces break down and change over time the

artist may have to be consulted at multiple stages in a restoration, a practice which does not occur in other conservation specialties.

Rafael Lozana-Hemmer's talk was in many ways a mirror image of this sentiment. In it he discussed how he personally felt about the challenges in storing and displaying Time Based Media. In summary, his view had drastically evolved over his career, particularly through discussions with a curator he respected. As he began to consider how his pieces would be cared for and presented, he included more specific details regarding their care when he sold them as well as more metadata, source code, ect when appropriate. In addition he had a very liberal view regarding substituting materials, taking the position that though certain elements of each art piece are integral to their impact these are rarely mechanical or material based and instead center more around the impression that they create. In his own work he frequently updated materials to allow for better resolution, other technological gains or even simply for convenience.

The other takeaway I had from observing these lectures was the unique relationship between the Guggenheim and NYU. Two speakers in particular, Professor Deena Engel and Guggenheim Conservator of Time Based Media Joanna Phillips will likely have a huge role in the curriculum's development. For years Professor Engel has provided the Guggenheim with NYU computer science undergraduate students who perform case studies on various pieces of Time Based Media within the Guggenheim's collection. This relationship is reflected in both of them being speakers in the lecture series. This means simply that the Guggenheim is involved indirectly in the creation of the curriculum at the IFA, unsurprising given its the only museum in New York to have a

department specifically devoted to Time Based Media. However it should be noted that the Guggenheim is not part of some current working groups such as the Media Matters Initiative.

I asked the conservator of Time Based Media at the Guggenheim about this during our interview. It seems that they were offered a position in the group but for some combination or political or monetary reasons they were unable to join. When asked if she felt that the work the group was doing was accessible, she agreed but added that no one had yet codified theory on how to deal with all manner of Time Based Media pieces. Institutions are still very much figuring things out on a case by case basis. And while papers and case studies on such endeavors are regularly published and shared there has not yet been enough time to firmly establish best practices.

During my time at the Guggenheim as an independent contractor I have noticed several things, the most important is that the Guggenheim is investing an unprecedented amount of time and money generating public and private interest in the conservation of Time Based Media. Funding for the CCBA fellowship was in the works for two years. In addition they've recently hired a fellow specifically to work on their intake process and cataloguing of Time Based Media works and have another contractor who works part time on a more permanent basis than I do. They've also hired a recently graduated student of Deena Engel who had previously worked with me on BRANDON to assist in the documentation surrounding a piece with robotics.

Their selection of a CCBA fellow coincides with their effort to restore BRANDON and generate interest in their other 22 holdings of software based art and the Time

Based Media Lab in general. After the successful completion of BRANDON's restoration the Guggenheim allowed Rhizome, a private organization, to include BRANDON in a public showcase of significant pieces of net art. A blog post and press release about the successful restoration were also put out at that time. In addition, as part of this attempt to publicize the Guggenheim's Time Based Media Research Lab in the past two months, Joanna Phillips has conducted three published interviews. One through a Vice affiliated art blog and a two-part joint interview with Deena Engel published on the Guggenheim's site where they discussed the current state of Time Based Media and the future direction of the field. I've had extensive conversations with both of them and their insights into the field have been invaluable in developing my own understanding. Both approach Time Based Media from very different backgrounds. Yet there is an enormous amount of overlap in how they see the future of the field developing. The partnership between the computer science department and the Guggenheim is evidence of that shared vision in which those with technical knowledge exist in a sort of symbiosis with traditionally trained conservators, each learning from the others expertise. It's not a far leap to suggest that eventually this will lead to a class of professionals fluent in both languages. I suspect that the future conservators of Time Based Media will have much more practical technical knowledge than their predecessors or colleagues have had; since many Time Based Media pieces involve custom software or hardware.

Another entity that the Guggenheim may find themselves in frequent contact with is Rhizome. Rhizome faces different challenges than the Guggenheim and they

approach things from a very different theoretical angle. They are first and foremost archivists, and though they are helping with the promotion of BRANDON'S relaunch they seem to be hesitant about some of the approaches used. Leadership has changed recently and if they are to work with the Guggenheim in the future they must find a way to communicate with each other.

There are simply no real in depth case studies that outline a compelling theoretical backing for the proper conservation of software based art. In some conversations with Rhizome, the organization which would be hosting BRANDON as an example of early netart, it became clear to me that our approach to the restoration of BRANDON was in some ways controversial. These conversations gave me a glimpse into some of the fundamental questions that the field may be forced to answer as it leaves its infancy.

The main point of contention was the idea of "migration" versus "emulation". Rhizome is an independant company in charge of conserving thousands of pieces of obscure net art. As such they have essentially no time for the pieces as individual entities, so their strategy has been to create a cloud based emulation service. Essentially to allow users to go to their site and interact with pieces as they would have appeared and acted when they were first made. They do this by creating a virtual version of an old computer and hosting that virtual computer in their web page. This approach is by no means perfect, sometimes functionality is not fully restored and the cloud based emulation requires that the user be at least somewhat near a server. So access to these pieces is still not universal.Migration and emulation are terms that have

distinct meanings in terms of conservation. Both were defined formally by the variable media network whose work is still available online today. The variable media network defines emulation as:

"To emulate a work is to devise a way of imitating the original look of the piece by completely different means. Emulating a Flavin fluorescent light installation would require custom-building fluorescent bulbs that produce the same light as and resemble the physical appearance of the original bulbs. Possible disadvantages of emulation include prohibitive expensive and inconsistency with the artist's intent. For example, Flavin deliberately chose to use ordinary off-the-shelf components rather than esoteric materials or techniques. " (Veritable Media Initiative, 1999)

and migration as:

"To migrate an work involves upgrading equipment and source material. The obsolete fluorescent bulbs of Flavin's light installation could be upgraded to fluorescent or halogen lights of comparable hue and brightness. The major disadvantage of migration is the original appearance of the work will probably change in its new medium. Even if state-of-the-art fixtures cast similar light to Flavin's originals, the actual fixtures are likely to look different." (Veritable Media Initiative, 1999)

Rhizomes argument for emulation is complex but the lynchpin seems to be a combination of nostalgia and tech appreciation. They have argued quite strongly in talks with the Guggenheim that the true appearance of a piece is "of its time" or when it was

originally made. In the case of BRANDON this would be 1998 or 1999. To view it on modern browsers, on modern computers whose operating systems are hundreds of times faster than they once were is to see an entirely different piece. They perceived conservation as inherently invasive and secretive making several references to making old paintings "shiny and new". Some of this is due to a lack of shared languages but there is also a fundamental and deep difference in how the two organizations approach old works. A friction that may come to shape future endeavors since the institutions are somewhat forced to interact with each other. The other reason for Rhizome's steady hold on the past is the idea that their pieces were made with to work solely in conjunction with hardware or software from a specific time frame. In reality this is somewhat unlikely, but it is one of their primary justifications for an archival approach.

Another recurring roadblocks in my work there as a contractor was the profound lack of documentation surround net art pieces acquired in the 90s. There is quite literally almost no history for a piece that the museum has had in its possession for over a decade. Most of the knowledge about its installations and appearance was painstakingly gathered by myself and Jillian Zhong over the course of a year and a half of source code analysis. Time Based Media pieces require documentation that differs from what conservators would fill out for a painting or more traditional piece. What exactly that documentation looks like is still being debated and worked out in labs across the world. For the time being decisions are made with a sort of group consensus between myself the CCBA fellow, Joanna and, occasionally, Deena.

The Future

This leads us, and the future of Time Based Media conservators, to a fork in the road. There can be no doubt that the curriculum the IFA designs will be a primary force in shaping the development of best practices for Time Based Media conservation. The most pressing decisions they face in the development of this new curriculum is how technical the students education should be.

If the IFA program admits students who have received engineering or computer science undergraduate degrees they will be working with a population already familiar with the "technical culture". This population will know how to think through problems in a systematic technical way and how to rapidly learn new methodologies or technical practices if need be. This may be the best way to ensure that Time Based Media conservators are able to understand the technical decisions made in works. Many Time Based Media pieces require a group effort to properly care for them. Experts outside of conservation may have to be brought in to offer advice on a particularly complicated technical aspect of the work. Communication between conservators dealing with Time Based Media and technical liaisons is a crucial part of the restoration process for Time Based Media pieces.

During my time at the Guggenheim as a contractor I was involved in and/or witnessed many such conversations between technical people and conservators. The two groups simply think in completely different ways. What conservators have been trained to notice and consider is not at all the same as what a computer scientist has

been trained to notice and consider. It's not that the two can't work together, just that there is often extra work put into making one understand the other.

In contemporary art part of the process of analyzing and understanding a piece is its "construction" . The methods and the process behind a piece influence not only the viewers interpretation but the methods of conservation as well. The technical composition of a piece will help conservators decide whether it's best to emulate or migrate a work. Such choices are not simple technical decisions. A conservator must consider the time period in which the piece was originally created, the original codebase and the style or manner in which it was done. Was the software coded by a single person or a team? What level of skill did the original coder possess. All of these factor in subtle ways into the strategies used in restoration. There is also the meaning that these choices imbue in a work. The technical composition of a Time Based Media piece is as unique and informative as the brushstroke style in a painting. If someone is working with Time Based Media pieces and fails to realize this then they are missing a critical dimension of the work.

As Time Based Media struggles to define its place in conservation there will inevitably be growing pains. The field is still very much in the process of deciding what pieces fall under a Time Based Media conservators purview and what the distribution of labor would be in a team of conservators. Are Time Based Media conservators going to take general objects conservation jobs at museums and oversee a team of technical people who will perform the more minute aspects of technical conservation? Or will the interest and funding in the conservation of Time Based Media pieces increase to the

degree that many museums will take on conservators whose fulltime job is the specialized conservation of Time Based Media pieces? These questions can't be definitively answered right now. Given the direction of the field currently it seems that the former is the more likely, however funding is increasing and museums across the nation have made significant strides in developing plans for the conservation of Time Based Media. A little often discussed part of this puzzle is the lack of focus on "recent history". Museums are slow to adapt to change, its simply in their nature and there are few museums actively collecting digital or Time Based Media pieces, even as they become more and more popular for artists. This is because recent history is often devalued or seen as more ephemeral than old masters paintings. If this mentality were to fade a bit the chances of Time Based Media conservators taking on a larger role are raised. It also remains to be seen how the IFA program will affect the job market for Time Based Media conservators. Having a program from a trusted institution may make people more willing to advertise for and hire Time Based Media conservators.

On my first day working as a contractor at the Guggenheim, Joanna created a document called "The Philosophy of What We Are Doing" and started typing in anything that seemed important. The field is in the process of transitioning from the work of amateurs to the work of professionals, and I'm grateful to have witnessed it. Best practices are slowly being put in place as those amateurs make what seem like minute decisions, building a philosophy as they go.

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