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Born-digital photographs, which are photographs captured originally on digital cameras, pose new considerations for archivists. Sharing qualities of both electronic records and analog photographs, these objects bring together the issues inherent in both. While there are best practice guidelines available for how to preserve these electronic documents, there is little information on what archivists are actually doing to ingest born-digital photographs. Using qualitative interviews with archivists located in the Triangle area of North Carolina, this study has investigated what archivists are doing to address born-digital photographs.

#### Headings:

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DIGITAL PHOTOGRAPHS AS ELECTRONIC RECORDS: HOW ARE ARCHIVES  
HANDLING BORN-DIGITAL PHOTOGRAPHS?

by  
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## **Introduction**

Photographs have always posed as a quandary to archivists. Joan Schwartz notes the quality of “other” that photographs have to archivists and historians alike, “whereas photographs, prints, and watercolours are generally acknowledged to be historical, they are not normally understood as archival; while their value is readily acknowledged to be informational, it is seldom viewed as evidential,” (p. 146, 2002). Tim Schlak (2008) succinctly stated the archivist’s dilemma with photographs as, “simply put, photographs are very difficult objects to talk about, let alone classify, describe, and essentially ‘own’ as archival evidence,” (p. 85). Archives have typically pulled photographs out of collections to house them separately, as entirely different entities from the text-based collections. When describing and arranging photographs, archives typically describe them at the item level, rather than in groupings at the series level, as textual documents are described.

The current archival literature does not discuss in any detail how archives are processing photographs. Processing is the set of activities that incorporate new materials into the systems for intellectual and physical control of an archive. Processing in archival terms refers to how an archival institution takes possession of a collection of objects, whether it is papers or photographs or other objects and arranges them physically in boxes and intellectually with a finding aid. When referring to processing electronic records or electronic photographs, the term used in archives is “ingest.” This term, which comes from the OAIS Reference Model, refers to the process of moving electronic

records from the creator of the records into the archive.<sup>1</sup> A recordkeeping system would be defined as the system where the producer of the records kept the records and the preservation system being the archives (Wilzcek and Glick, 2006). The focus in archival literature is more on how to process electronic records generally, with no specific focus on photographs. Some institutions, particularly the U.S. National Archives and Records Administration and Library of Congress, have documents on their websites that present guidelines they use for file naming and preserving their electronic records but not photographs specifically.

As more repositories move collections online or provide access online, many of the first collections going live are photographic collections. While the majority of online photograph collections are created by the archive from their analog photographic holdings, some born-digital photograph collections are starting to show up on the Internet as well. In addition, as digital cameras become the norm in the population, this is likely to result in more photograph collections being donated that include born-digital photographs. Having an idea of what some in the profession are doing with digital photographs will perhaps be useful for those who still have questions about how they should proceed.

Born-digital photographs are a new medium that archivists are still determining how to process. Born-digital photographs are photographs that are originally created digitally, as opposed to analog photographs that are originally captured on physical film

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<sup>1</sup> The OAIS (Open Archival Information System) Model was developed by the Consultative Committee for Space Data Systems. It is a high-level model that describes the components and processes necessary for a digital archives, including six distinct functional areas: ingest, archival storage, data management, administration, preservation planning, and access. (<http://public.ccsds.org/publications/archive/650x0b1.pdf>)

and can be scanned and a digital copy made. However, unlike analog photographs, which are very different in terms of how to preserve and arrange them from physical text documents, born-digital photographs share many attributes with their digital textual counterparts. The issues that come with file formats, file naming conventions, and server storage space, are problems for both digital textual documents and digital photographs.

Electronic records as a whole are an issue-laden medium for archives. There are several best practice guidelines<sup>2</sup> available on how to handle electronic records from a description and arrangement perspective as well as a preservation and access standpoint, but many archives are still just starting to learn how to work with electronic records (Davis, 2008).

While archival literature has started to make strides in addressing the issues that electronic records raise, there is very little archival literature that addresses the questions that are raised by born-digital photographs. The study described in this paper sought to address the following questions:

- How do archivists ingest born-digital photographs?
- What similarities and differences exist in how archivists ingest born-digital photographs and process physical photographs?

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<sup>2</sup> Some examples of guidelines include The Library of Congress's "Born Digital Photographs: Cataloging Samples," which details how the LOC is cataloging their born digital photographs. (<http://www.loc.gov/rr/print/tp/Born%20Digital%20Photographs.pdf>). The University of Maryland system has released two editions of "Best Practice Guidelines for Digital Collections at University of Maryland Libraries," the second edition includes a focus on working with born-digital photographs. (<http://www.loc.gov/rr/print/tp/Born%20Digital%20Photographs.pdf>) The Bentley Library at the University of Michigan has made available their Digital Photographic Image Guidelines, which includes recommendations for appraisal, accession, and description of born-digital photographs. (<http://bentley.umich.edu/uarp/home/bestprac/imageguide.pdf>) The Ingest Guide for University Electronic Records developed by Tufts and Yale University details the actions that need to be taken for a "trustworthy ingest process." (<http://dca.lib.tufts.edu/features/nhprc/reports/ingest/index.html>)

- What similarities and differences exist in how archivists ingest born-digital photographs and other electronic records?
- What guidelines or standards influence the ingest process used by these archivists?

### **Literature Review**

Photographs are not a popular topic in archival literature. Tim Schlak notes that there are only “thirty odd articles dealing with photographic and visual materials in a North American archival context,” over a thirty year time span (Schlak, 2009, p. 86). The majority of articles that discuss photographs are case studies of how an archive processed a photograph collection or described a photograph collection, or are much more theoretical in discussing what a photograph conveys to the viewer. The earliest articles that focus on photographs in archival literature came from a historical perspective and discussed how historians could use them, making a case to the archivist that photographs could be viewed as legitimate records (Runsdel, 1978). T.R. Schellenberg, in his book *Management of Archives* devotes a chapter to arrangement and description of photographs, in which he states, “The methods of arranging and describing pictorial records have not been fully defined, much less standardized,” (Schellenberg, 1965 p. 322). He also argues that how an archivist should arrange a photograph collection depends on the structure of the collection. It can depend on whether the collection that is being processed is entirely of photographs, or if the photographs are instead part of a larger mixed collection that includes textual documents as well as photographs. His one general suggestion for all photograph arrangement is to organize photographs by format as well as size (Schellenberg, 1965). Later archival text books on arrangement and

description barely mention photographs, other than noting that non-textual materials sometimes are processed differently from a traditional text document (Duckett, 1975 and Roe, 2006).

Mary Lynn Ritzenthaler, who wrote the first guide to photographic arrangement in 1984, revised and updated the guide in 2006 with Vogt-O'Connor with a more comprehensive archival look at photographs in *Photographs: Archival Care and Management*. The book is used today as the authoritative book on how to process, describe and preserve photographs in an archive. Ritzenthaler applies traditional conceptions of archival arrangement, particularly provenance and original order, to photograph collections. Provenance is the concept that all items that are created by one person, family or company should be kept together. Original order is the principle that the archivist retains the arrangement of a collection as it was established by its creator. The book discusses the challenge that photographs pose to these two concepts, particularly that keeping photographs with textual documents can raise preservation concerns because analog photographs are typically much more unstable than paper documents. She provides concrete solutions for overcoming this by separating intellectual arrangement from physical arrangement. A group of photographs can be physically separated from the textual documents from the same collection, but intellectually kept together with them in the finding aid. The book notes several other best practices for how to arrange photographs, both those that are accessioned in a neat order and those that come in with no discernable order. Yet, despite being published in 2006, the book makes only a very short mention of born-digital photographs in a highlighted box rather than with the main text. The box only discusses a way to

accession a born-digital photograph collection, rather than any mention of how the rest of the chapter on arranging that collection once it is in the custody of the archives should be handled. She notes to “process digital accessions immediately,” but gives no guidance on how to do so (p. 142). It is not made clear whether or not Ritzenthaler and Vogt-O’Connor think that born-digital photographs should be processed the same way that analog photographs should be.

There are few articles that feature archivists discussing how they are meeting the challenge of arranging and describing physical photograph collections. In 2006, Anne Foster published a self study of her institution’s efforts to apply the new archival processing technique of “more product, less process”<sup>3</sup> to their photograph collections. Her description of the phases that her institution went through with arranging photographs is most likely similar to how many other archival institutions have through the decades processed their photograph collections. When her institution was first started, the technique of separating all photographs out of textual collections to store them separately in subject files was practiced, just as Rundall discusses (1977). In the 1980s, the archive moved to keeping the photographs with the textual collections but in a separate folder at the back of the collection. By the 1990s, the archive started describing the photographs in a database on an item level but with no real arrangement applied to the actual photographs beyond numbers being put on them that corresponded to entries in a database. Foster then introduces the application of more product, less process to a very

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<sup>3</sup> “More Product, Less Process” is a concept introduced by Dennis Meissner and Mark Greene that promotes being more flexible with processing in the archives and realizing that not all collections required an in-depth level of processing, including re-foldering, taking out paper clips, etc. Their argument is that archivists need to rethink how records are processed, in order to address their backlogs. Greene, M. A. & Meissner, D. (2005). More product, less process: Revamping traditional archival processing. *The American Archivist*, 68, 208-263.



large photograph collection -- from how the collection was accessioned to how it was arranged, described and preserved. Foster notes that she and her staff went on to test the technique with several other photograph collections that had very different components from the initial collection, all with positive results of getting collections organized in a timely and effective manner. Her discussion illustrates how digitized photographs do differ from physical photographs, but does not mention what specific challenges a born-digital photograph collection would present. The detailed descriptions of the processes the University of Alaska Fairbanks Archives went through for their photograph collections could be useful to other archivists who are facing similar challenges of getting through their backlog of photograph collections. It is surprising that a profession that acknowledges how problematic photographs can be to handle does not share experiences about them in professional publications (Foster, 2006).

The majority of papers found in the archival literature which discuss photographs look at them from a theoretical viewpoint. Joan Schwartz is often credited with being the most vocal on trying to shift the archivists' view of photographs. She wants archivists to stop comparing and describing photographs like textual documents and to start providing description that is based on the function of the photograph. She states in one paper that,

Archivists must go beyond the 'of-ness' of a photograph or a watercolor or a map to search out the deeper meanings, rhetorical flourishes, and ideological nuances embedded in and generated by them. Our job is to seek their intended function or role...as a means of communicating a message across time and/or space and then to consider how to preserve and describe them in a way that respects, reveals, and retains their impact on human relations, power, and knowledge (Schwartz, 2004, p.110).

She argues that archivists must be interdisciplinary in how they approach visual materials and should put "postmodern theory into everyday practice" (p.122). While she does not

describe any specific methods for doing this, she suggests books from various other disciplines including history and the arts that describe how these disciplines have applied postmodernism to photographs.

Despite Schwartz (1995, 2000, 2002, 2004) discussing at length visual theories from the 1990s and early 2000s, there is very little discussion of how this could apply to the newer technologies of these decades, specifically born-digital photographs. Yet, while the theoretical discussions can influence how an archivist arranges or describes a photograph collection, archivists who are facing a large backlog of photograph collections and simply want to get them processed are likely more interested in what other institutions are doing in practice. As Schlak notes, “what writing exists [about photographs] is either practitioner-based or quite advanced in theory but unconnected to more popular, practical work,” (p.93).

### **Electronic Records in Archives**

While photographs, born-digital or otherwise are not often discussed in archival literature, electronic records are a very popular topic. The issue of electronic records and how to properly preserve them has been a topic of discussion in the archival field since it became apparent that computers were going to be a feature of everyday life in the early 1980s. One of the first articles to mention the impact of computers and the records created on them was Edward Weldon’s article “Archives and the Challenges of Change.” He stated in the article, "I would not dare to speculate on the archival impact of this [computer] revolution on recordkeeping in the home, school, office, and laboratory...as innovations in computer hardware give us smaller, faster, and cheaper units, and as

abundant new software, like the sirens' song, seduces us with ever more user-friendly programs, the electronic era, with all its own reshaping force, embraces us," (p. 132). Yet most of the discussions have occurred in the past ten to fifteen years, as people have started to rely entirely on computers to create, manage, and access the records they create. There has been a divergence in archival thought as a result of electronic records being included in the archives. Archivists such as Linda Henry promote continuing to apply traditional archival methods such as provenance and original order to electronic records, arguing that there is little difference in electronic records and paper documents beyond preservation concerns. She notes, "In working with electronic records, archivists need not and should not forget all the lessons they have learned with paper records" (Henry, 2004, p. 324). Just as Schwartz makes the argument for postmodernism to be included in how archivists approach photographs, many others in the archival profession are making the argument that postmodernism should be applied to the archival profession as a whole in how they approach all records, especially now that electronic records are more prevalent. Terry Cook states that to be a postmodern archivist, "For archivists, the paradigm shift requires moving away from identifying themselves as passive guardians of an inherited legacy to celebrating their role in actively shaping collective (or social) memory" (Cook, 1997, p. 18). The main way that these postmodernists suggest that archivists put postmodernism into practice is by focusing less on the content and more on the process of creating the records and working with creators of records before they are turned over to the archives in making sure that the electronic records keep their integrity (Nesmith, 2002, p.18).

Several studies have investigated actual archival practices in regard to electronic records. The majority have been surveys of several institutions to get an idea of how the overall field is handling the relatively new formats of electronic records. Susan Davis (2008) surveyed academic libraries, historical societies, and public libraries in the summer of 2006 to find out how involved the repositories were working with born-digital records and how they were processing these records. Davis stated that the goal of the study was to “identify and explore current practices and policies for incorporating born-digital records into collections of academic archives, historical societies, and public libraries with archival units. Understanding the concerns of these repositories is crucial if the archival profession is to identify and preserve electronic records comprehensively,” (p. 174). The survey was sent out to 300 institutions, covering all 50 states and Washington, D.C. The response rate was 42%, with 126 institutions responding. The survey that was sent out via email had fourteen questions, which covered questions of policy and practice in regard to how the institutions dealt with born-digital records. The survey found that a majority of institutions accept or plan to accept digital records, but how they were dealt with was mostly on a case to case basis, rather than having any standard or policy in place for how to deal with all born-digital collections brought into the repository.

Davis’s article highlights the uncertainty that the archival community has in regard to digital materials. She notes that while the profession has put out many guidelines for proper management of electronic records, it appears that in reality, few of those have been put into practice. It is probable that the same issue is occurring with digital photographs and how archives are dealing with them. While there are guidelines

for how to treat digital photographs, there is possibly little standardization in practice. Michele Cloonan and Shelby Sanett surveyed and interviewed thirteen institutions and projects both in the United States and abroad that currently have some program in place to preserve electronic records. Using the information they gathered about what techniques were being used, Cloonan and Sanett hope to “help information archivists as they formulate strategies, policies, and standards for preservation” (Cloonan and Sanett, 2002, p. 71). They state that they did a purposive sample of institutions because they wanted to make sure the institutions surveyed were practicing at least one of the preservation strategies in which they were interested. They note that their design was a qualitative one, as their goal was not “to make statistical inferences, but to learn about processes and methodologies” (p.74). Between the surveys and interviews, they found that when the institutions started their digital preservation programs ranged from the 1970s to the 1990s. Among other questions, they asked about the most common electronic preservation method that each institution was using, finding that migration was the most popular method. Just as Susan Davis’s survey found no pattern or consensus among a wide range of institutions implementing digital preservation programs, Cloonan and Sanett found no standardization in how institutions with established digital preservation programs were approaching digital preservation.

The Council on Library and Information Resources (CLIR) carried out a nationwide study in the early 2000s that looked at what digital cultural heritage initiatives were in place across the country and how sustainable these initiatives were. Thirty-eight institutions took part in the study. The institutions were selected through an iterative process by the CLIR Steering Committee, who had a goal of making sure a cross-section

of cultural institutions were selected, including performing arts associations, scholarly and library associations, museums, archives, and humanities centers (Zorich, 2003, p.2). The study was carried out by doing a content analysis of each organization's website and through phone interviews. One of the questions the survey looked at was the standards employed by the institutions for their projects. Overall, CLIR found that there are few standards to follow for digital project sustainability, which was a major cause of concern among the participants in the survey, because it led many of the projects to become overwhelming. A lack of knowledge about what others were doing to handle the issue of preservation and sustainability was cited frequently as a problem (p.26). The survey shows the need for cultural heritage institutions to have access to information about what others are doing when it comes to all digital resources and the care of them.

Claire Eager (2003) found that many small and medium institutions were attempting to digitize materials but with little use of preservation metadata. She surveyed twenty five cultural heritage institutions in North Carolina that were randomly selected from North Carolina Exploring Cultural Heritage Online (NC ECHO)'s list. The survey was administered online and had two parts. The first part focused on collecting general information about the repository and how much digitization was going on there at the institution and what preservation metadata was being used during these projects, if any. The second part of the survey involved questions about a new metadata schema that NC ECHO was interested in testing. The survey results showed that the majority of institutions were very interested in starting or continuing digitization programs but that they had few resources in place to make them successful. And the subjects who participated had a limited knowledge of metadata schemas, which meant that even if they

were carrying out digitization, the digital objects created were most likely not sustainable over a long period of time. Eager's study shows that while "industry leaders" in the archival profession including Ivy League school libraries, the Library of Congress, or the U.S. National Archives and Records Administration may have the resources to carry out the best practices that they propose, the majority of archival institutions in the United States do not have devoted resources to educate their staff about the best way to take care of digital objects. This suggests that it is very likely that despite best practices being continually published on how to care for born-digital photographs, what is being done in practice is different.

Several case studies have also examined how one or two institutions have implemented electronic record management, processing, or preservation. These provide a much more in depth look at what archivists are actually practicing when it comes to electronic records. John Blythe (2009) did a case study of the Southern Historical Collection at the University of North Carolina, Chapel Hill and their methods of processing born digital materials during the spring of 2009. He notes in his description of the design considerations for processing digital materials that the SHC wanted to be sure that their method took into account a variety of media types, including CD-ROMs, DVDs, and flash cards, and thumb drives (p. 19). He also noted that while one of the best practice suggestions that the SHC found was to use a certain program for making copies, the SHC was unable to follow the suggestion due to hardware constraints at their institution and had to use a different program (p.20). This highlights what Eager (2003) found, that often resource constraints prevent an archive from carrying out the recommended procedures. In his discussion, Blythe makes no mention of the different

types of born-digital records that were being processed. They are all lumped into one category of “born digital.” This suggests that at least from one archive’s viewpoint, all born digital materials are to be processed the same way, which is presumably different from how they process physical records that have different preservation concerns.

Phillip Bantin (1998) describes the process the Indiana University Archives went through to test the “Functional Requirements for Evidence in Recordkeeping” or “Pitt Model” developed by the University of Pittsburgh. They tested one of the first models put forth for how to properly preserve and manage born digital records. The two main facets of the model that Indiana University tested was “the functional requirements – the ‘twenty properties which are identified in law, regulation, and best practices through society as the fundamental properties’ of evidential records, and the metadata specifications,” (p.332-333). The Pitt project involved a redefinition of traditional archival principles that Henry discusses in her paper, where the record is no longer defined and organized by provenance and content but by its function (p.333). The staff tested various facets of the model and decided to either eliminate requirements or retain them, with an explanation of each decision. Bantin found that some of the requirements could not work at Indiana University due to computer software or hardware constraints or a lack of staff knowledge. Overall though, the Indiana University staff approved of the method. He notes that while many best practices may be put out, until most institutions test them and share their assessments with others in the archival community, it will be difficult for the profession to make any progress with the challenge of managing electronic records (p.364). Bantin’s paper again did not make any mention of a distinction between different types of born digital records, rather he groups them all



together. Like Blythe's paper, this suggests that born digital photographs may be categorized in archives just as textual electronic records are.

### **Born-Digital Photograph Guidelines, but few Practices**

Neither the literature for archives' handling of photographs nor the archival literature related to electronic records generally address digital photographs. As a result, there is little knowledge beyond guidelines highlighted by the "industry leaders" about how archives are processing born digital photographs. This likely causes confusion and a lack of confidence among archival professionals who may not know how their fellow colleagues are proceeding with processing digital photographs. Williams, et. al. emphasize the need for archivists to start thinking about and figuring how they will properly ingest and preserve electronic records and born digital photographs in particular. The interviews described by Williams et al were about what is currently being created and saved by people on their computer. These collections illustrate what future personal collections donated to an archival institution could contain and the interviews suggested that the majority of future personal collections will be made up of born digital materials. While the digital objects created varied across the individuals who were interviewed, the writers did state, "nearly all respondents have a collection of digital photographs," the only digital object that was common among the respondents (Williams, et.al 2008).

### **Research Design and Methods**

The sampling technique used in this project was a purposive, convenience sample of archivists who work with photographs and electronic records. The interviews were

conducted at the workplace of each of the archivists interviewed and typically lasted thirty to forty-five minutes. Due to time and funding constraints, archives located within the Triangle area of North Carolina, which is defined as Wake, Durham, Chatham, and Orange counties, were targeted for interviewing. The sampling frame used is the list of all archives in the state of North Carolina compiled by NC ECHO (NC Echo). I narrowed the list down to eighteen archives within the location range of my residence to contact about doing interviews. The archives contacted were a variety of types of archives including university archives, local municipality archives, special collection archives, government archives, and medical archives to allow for a variety of experiences to be looked at and increase the applicability of the final results (Rubin and Rubin, 2005, p. 239).

Once the list of archives was compiled, I emailed the archives to describe the project and ask if an archivist who works there would be interested in doing an interview focused on ingest of born-digital photographs. The purpose of doing the interview at the archivist's place of work was to increase the possibility to do an observation of the process and tools that the archives goes through and uses to ingest a collection of born-digital photographs on site. Out of the eighteen archives contacted, ten responded to the recruitment emails, and seven archives agreed to be interviewed. Of the seven locations I interviewed at, I spoke with a total of ten archivists. The three archives that declined to be interviewed indicated that this was because they do not work with born-digital photographs at this time. It is possible that self-selection bias took place in who responded to the emails to be interviewed and the eight archives that did not respond

were also not working with born-digital photographs and so felt they had nothing to contribute to the study.

The interview schedule used for the interviews can be seen in Appendix 1. The initial questions focused on the experience of the archivist, focusing first on their overall archival experience and then narrowing to focus on their experience working with photographs and electronic records. The last questions focus on born-digital photographs in particular. The main questions focused on the process followed by the archives for ingesting born-digital photographs, including questions on preservation concerns, description, and organization. There were questions about how the archivist processes analog photographs and other forms of electronic records, to allow for comparison between the process used for born-digital photographs and other mediums. Questions about policies and what influenced the process used by the archives were also included.

All but one of the interviews were audio-recorded to assist me with my notes from the interview. In addition to recording the interviews, I also took notes during the interview. Three of the interviews were done with two people, typically the photographic or visual materials archivist at the institution and the electronic records archivist. The other four interviews were done with one person who was either the only archivist at the institution or the primary photographic archivist.

## **Analysis**

I generated an interview memo within a day or two of it occurring, using the notes taken during the interviews and the audio-recording. The memos were not full transcripts of the interviews, but instead included key quotes and key information stated by the

participants, particularly relating to the workflows used to process the different materials and the challenges they see born-digital photographs presenting. The overall method of analyzing and coding is based on the description in Chapters 10 and 11 of Rubin and Rubin (2005). After all the interviews were performed, I took print outs of all the interviews and analyzed each of them, identifying themes and concepts that came out of the interviews and occur throughout all of them. These were coded and organized using a spreadsheet for ease of comparison over all the transcripts.

Qualitative interviewing can be described as a “guided conversation,” (p. 85, Warren). The focus is on finding common themes and patterns across respondents. Qualitative interviewing is a fairly new technique, introduced in the 1980s and texts focused on design of qualitative interviews were not introduced until the 1990s. Steven Taylor and Robert Bogdan in their 1984 textbook *Introduction to Qualitative Research Methods* promote qualitative interviewing as a more flexible interviewing method that is not as stiff as standardized, survey-like interviews. They saw qualitative interviews as involving several face to face encounters and modeled more like a conversation, rather than a questionnaire. They state, “it is only by designing the interview along the lines of natural interaction that the interviewer can tap into what is important to people,” (p. 40, Pratt).

Qualitative interviews are a useful method for finding out how one thinks about a problem and for finding out the work processes of a person. As Rubin and Rubin (2005) describe in their book, qualitative interviewing allows for the participant to give explanations for their answers, give examples and describe their experiences (p. 2-3). The articles by Case (1991), Duff and Johnson (2003), and Williams, et al. (2008) all

utilized qualitative interviewing as the primary research technique for finding out in-depth information about how people do research in archives and organize their digital collections. Duff and Johnson (2003) who examined how genealogists do research in archives noted the benefits that can be gained from qualitative interviewing. They argue that while their sample was very small, “the extent of the interviews increases the depth and richness of the data and contributes to an in-depth understanding of the research process experienced by the participants,” (p. 82, Duff and Johnson). The questions of how archives are ingesting born-digital photographs focus primarily on the work processes of the archivist, which makes qualitative interviewing an ideal method for exploring the research questions raised.

### **Results of the Interviews**

At some of the institutions, more than one archivist was interviewed. When reporting statements from the archivists, they will be referred to as an archivist from a particular institution. When reporting how many archives have a particular policy, the institution will be referred to, rather than the archivist. For example, three out of seven archives have this policy, rather than stating four out of ten archivists, as some of the archivists work together at the same institution.

#### **Description of the archives involved**

<b>Institution</b>	<b>Type</b>
Archives1	large university archive
Archives2	specialized academic archive
Archives3	large university archive
Archives4	small historical society
Archives5	public archive
Archives6	small historical society
Archives7	museum archive

The interviews revealed that while archives have fairly set processes and workflows in place for processing analog photographs, the workflow for ingesting electronic records is often still relatively ad hoc. The ingest process for born-digital photographs is the same as the ingest process for all other electronic records at the four institutions that have accepted born-digital collections, so this uncertainty of what to do carries over to born digital photographs as well. One of the archivists stated that, “This [dealing with born digital photographs] will probably be like everything else we do and we’ll get a collection with them in it and we’ll be forced to sit down and figure out what we need to do with it.” This seemed to be a common sentiment and approach that the other archives were taking towards born digital photographs. They have not had enough collections donated yet that it has become a priority to establish formal practices and procedures.

There was an even split between the archivists interviewed about how their analog photographs are processed and organized. Four out of the seven institutions stated that photographs were processed with the collection they came in, with one of the archives stating specifically that their institution does not organize their photograph prints by subject. The other three archival institutions all maintain a separate photograph collection that is arranged by subject and many of the photographs that come into their archives are separated out of the collections they come in and stored with the photograph collection, which is in a different physical location. Two main reasons were cited for taking this approach. One reason was preservation. Analog photographs have different preservation concerns from paper documents and storing them separately makes it easier to pay the proper preservation attention to each format. The other reason was access.

Patrons will often request photographs that illustrate a particular topic or subject, so it is easier to find photographs that fulfill a patron request when they are organized by subject. And as one of the archivists noted, accessibility is important because photographs are what are requested the most by patrons. None of the archivists noted any particular guidelines or standards that they used when processing photographs.

The workflows described for processing electronic records were as varied as the institutions in which the archivists worked. Five out of the seven institutions had at least two different workflows in existence for ingesting electronic records, with some describing even more. A small historical society archivist noted that the process he uses to ingest electronic records, which are mostly oral histories at his institution, is fairly simple. He transfers them from tape onto both a CD and a hard drive, to make sure he has an access copy and a backed up version on the hard drive. This process of copying image files off a disc onto a backed up server is what was cited repeatedly for how institutions are currently dealing with ingesting electronic records. All seven repositories that I interviewed at keep electronic records on a backed up server, even if the records are not archival collections but simply records produced while doing the daily business of the archives.

One of the archivists from Archive1 discussed two main workflows for ingesting electronic records. The ingest process is typically performed by the technical services department at that school, which is in charge of all processing work. He stated that primarily materials come in on discs as part of larger collections. Whoever accessions the materials takes the discs and -- using a migration tool that the university developed in house -- migrates the materials onto a server for later processing. Other times, donors

send files by email and the materials are processed slightly differently, but the end result is always making a copy of them onto a server. No guidelines or standards are in place, but the institution is currently attempting to develop some. The archivist noted that it was hard to come up with a standard process because there is such a great deal of variety in terms of the types of electronic records that could come in. It was also noted that due to the institution's backlog, many collections that hold born digital materials are not even being touched yet, since electronic materials would be found in newer collections. This point suggests a major risk factor for all archives and how they deal with their backlogs. Unlike paper records, which are unlikely to deteriorate in the next ten years, electronic records could easily become inaccessible in that time period due to obsolescence. No other archivist mentioned the backlog as a reason for why they have not confronted more born-digital photographs, but as most archives have a backlog, is it likely a major reason.

An archivist from Archive2 cited a similar ingest process to Archive1. Although, when I asked how the institution acquired and processed electronic records, the first response received was that they acquire them "passively," that they are not currently going out of their way to collection electronic records. He did state that in addition to moving files from CDs and DVDs onto a server, the ingest process described above, the archives also has a web form that allows patrons to directly load their electronic records into a digital repository set up at the university.

At Archive3, the archivist discussed the lack of ingesting any electronic records up to this point by his institution. A group is currently being formed to work out a process to follow for ingesting electronic records, and he noted that until the process is laid out, very little is being done with the electronic records that come into the archives.



He did mention an outside guide, the Paradigm manual, which his institution was looking at to inform the workflow developed. This was the only outside material mentioned in all the interviews. The rest of the institutions seemed to be looking mostly inward to develop a workflow. The Paradigm Manual is a resource on how to best preserve digital private papers, which was developed by the Universities of Oxford and Manchester. The project tested various tools, models, software, standards, metadata, strategies, policies, and procedures associated with preserving digital objects. These methods were mapped to traditional archival workflows and a workbook was created to assist other archivists in applying the Paradigm project's findings their own institution's work with digital objects (Paradigm Project).

Only one of the institutions, Archive5, has any guidelines currently in place for how to ingest electronic records, although it is still in draft form. The main problem that they saw, and what the new guidelines were designed to address, was who took care of what in the ingest process. The archivist described the procedure used currently to ingest electronic records. The institution has a long list of formats that they do accept. None of the other archivists mentioned formats as being a factor in the born-digital photographs being accepted. If someone brings in a collection that includes a format not on the list, the institution would typically migrate it to an accepted format immediately when it is accessioned. For example, if they received a collection of all JPEGs, they would convert them to TIFFs before storing them on the server and doing anything else with them. If possible, the institution asks the donor to do this migration, but if the donor does not know how to, the archives will do it for them. When the records are first brought in, checksum are calculated for the entire package of files. The archivist creates the

checksum and creates a read me file which is put with the electronic records and then it is all accessioned. At that point, the files are given to the appropriate archivist to process, which depends on the content of the files. An electronic records archivist is not responsible for processing all electronic records; rather each content archivist is responsible for records that relate to his/her content specialty, no matter what the format. During the processing of the electronic records, the archivist usually tries to do some weeding and some organization, typically chronological, of materials and then a new master file is created. However, this is extremely time consuming and the archives is planning to not do this anymore and will rather keep everything, including any duplicates and will retain all original filenames and organization. Originally, the archives put all the records on DVDs to keep as an archival copy. They are planning to move away from this and just keep everything on a preservation server. However, due to a shortage of storage space, they are still resorting to using DVDs, which is getting to be more of a problem as larger electronic record collections come in and they are spread across hundreds of DVDs. The guidelines being established reflect this process, but outlines exactly who is in charge of each step.

However, the other two institutions I spoke with, Archive4 and Archive7, do not really touch the issue of electronic records yet. The archivist at Archive7, a small museum archives, stated that they did not work with electronic records at all, beyond any documents produced themselves. At Archive5, a small historical society, the archivist commented that “we try to avoid the issue [of electronic records] as much as possible,” and that “even in our own records, the ones we do produce, our official policy is to print it all out.” There is clearly a split in the amount of experience and ability to deal with

digital records among the archival institutions I investigated, with the larger institutions working to figure out processes that work and the smaller institutions looking to the bigger institutions for assistance and inspirations. The large institutions are not looking to one another though for help and are working independently.

### **Working with Born-Digital Photographs**

This divide is reflected in how the archives are facing born-digital photographs. Everyone stated that the ingest process is the same for born-digital photographs as it is for any other born-digital record. However, that is often where the similarity between born digital photographs and all other electronic records end. While none of the archives have set processes in place for bringing them in, and only four out of the seven archives I spoke with have actually processed any born-digital photographs, all seven institutions had archivists who had something to say regarding the challenges and opportunities that born-digital photographs do pose to their institutions.

Three of the four institutions, Archive1, Archive2, and Archive5, that have processed born digital photograph collections have all ingested them in a very similar way, moving the files from the discs or hardware they come in on to a server at the institution. The fourth, Archive6, which was the only smaller institution that had actually ingested born digital photographs, noted that in addition to making a copy of the born digital photograph onto a hard drive, a print is also created and stored in a file cabinet. The other three referred often to the ingest process they described for all electronic records. The archivists at Archive5 did get into more specifics, particularly regarding how access is provided to the photographs, mentioning that “what is processed and made

available to the public is different from the master copy.” They also described specifically the process taken with one of the born-digital photograph collections that were brought in. According to the archivist, the collection came in on “cheap CDs” as JPEGs. The archives batch converted the JPEGs to TIFFs and then copied everything off the CDs and put them on the server and on gold DVDs for an access copy. The “original CDs” were then thrown out, because there were simply too many to store and because of their quality the archivist believed that they were not going to last very long.

The archivists at Archive2 described the process used when a server was donated from a department that contained hundreds of digital photographs. The entire server was copied onto the archive’s preservation server and then the program Picasa was used to index the photographs and weed out the duplicates in the collection. According to the archivist I spoke with, he looked at what Picasa said was a duplicate and then checked the two photographs shown and tried to figure out which one was the older one. The older version was deemed the “original” and kept and the newer digital image was deleted. He commented that he had to go through all of the images and look at each one to complete this process, which was time consuming. He also stated that this was done “on the fly” with no guidelines to inform the process but he thought that Picasa did a good job in assisting with the process.

Among the comments made regarding the challenges and changes presented by born digital photographs, there were six main themes that emerged: a change in the traditional workflow and job responsibilities at the institution, providing access, how each institution was working on its own to tackle the challenges, born digital photographs are more than just an image to preserve, change in donor relations, and perhaps the

biggest challenge is the sheer scale and size of born digital photograph collections.

Tables that display how each theme was commented on, or not mentioned, by each institution's archivists, can be seen in tables that precede each section on that theme.

**Table 1 – Scale of Collections**

<b>Institution</b>	<b>Scale of the Collections</b>
Archives1	"the scale is overwhelming"
Archives2	"The bulk. Storage space is getting cheaper - cameras now allow for people to take thousands of pictures with no need to delete anything."
Archives3	"Biggest implication is the scale. Harder to just bring in a collection on a moment's notice because it might be 10 TB"
Archives4	Their current digitized collections use a lot of storage space. Can't image how much space a born-digital collection would use.
Archives5	"If we were to get the entire work of a digital photographer - that would be huge"

As the capacity of digital image cards in cameras expand and they get simultaneously smaller and easier to transport, the number of photographs that are being taken by both amateur and professional photographers is growing significantly, a concern of every archivist I interviewed. The immediate responses I got when I asked "What do you see as the challenges of working with born-digital photographs?" included "the scale is overwhelming," "the scale. It is harder to just bring a collection in because it might be 10TB," "The bulk," and "if we were to get the entire work of a digital photographer – that would be huge." Many of them noted that just as storage for camera cards is getting cheaper, so is storage at the archives. However, it was emphasized that it requires more than just the archivist himself to give approval to purchase more storage, which is often where the problem with the bulk lies.

Table 2 – Change in Workflow

<b>Institution</b>	<b>Change in Workflow</b>
Archives1	"Set up a workflow to harvest materials overtime rather than just getting it all at the end"
Archives3	"That working space is now a hard drive and not a table top"
Archives5	"What is processed and made available to the public is different from the master copy - which is managed by a completely different department" "I'm not a technological wizard. IT is not my expertise"
Archives7	Does not see born-digital images as part of the archives - "up to IT to keep them up"

The size of born digital collections is not just a challenge in itself, but it also impacts who is involved in various decisions at the archives. The change in workflow in the archives when working with born digital photographs was repeatedly emphasized, particularly among the larger institutions I spoke with. At the smaller institutions, where there were at most three people on staff who worked in the archives, this was not as big of an issue, although needing people on staff who knew how to work with electronic documents was something that was mentioned. Another archivist, at Archive7, mentioned that she simply does not see working with electronic records of any kind, including born digital photographs, as part of her job. It is the IT department at her institution's job to handle digital objects and make sure they are backed up.

Having IT as part of the decision making process in archives was the biggest impact to the workflow when working with born digital photographs according to the interviews I did. All of the larger institution I spoke with have at least one photographic or visual materials archivist on staff and an electronic records archivist on staff. As born digital photographs can be considered both, often these two archivists have to work together to make decisions as to how to properly acquire, ingest, and describe these materials. The archivist at Archive3 spoke at length of how this changes how an

archive's traditionally works. He said one of the biggest challenges that born digital photographs bring is "the fact that IT now needs to be involved with acquisitions because you are using server space that they keep up." He gave the example that if someone calls the archives and states that he/she wants to donate 10TB of photographs to the archives, the process to bring it in is much different from being offered ten boxes of negatives. When analog photographs are donated, the appraisal decision stays within the archive, it is a matter of shelf space and materials to properly house the collection. With digital photographs, more people are involved in the process, because not only is IT involved to keep up the server space, you are also negotiating with others in the archives for that server space. Digitization projects and other in-house creation of digital materials are competing with acquisition decisions. In his view institutions "need to develop a workflow so that when a call comes you can accept the donation without having to worry about going through a lot of negotiation with IT and other library departments creating digital files." One of the archivists at Archive5 noted that the access copy of born digital photograph files is different from the master archival copy that is maintained for long term preservation. The master copy is now managed by the information technology branch at her institution. According to the archivists at this institution, born digital records are changing job descriptions. The photographic archivist noted that "I'm not a technological wizard. IT is not my expertise. That is not what I was hired to do," and so she does not mind handing over the management of born digital photographs to IT because they know how to properly preserve the files.

Table 3 – More than just images

Institution	More than just the image to preserve
Archives1	"Unlike analog where a photographer will print out what is most significant or pointed out on a contact sheet what is most significant, it is harder to know what photographs the photographer found most important." Need to consider preserving the photo software the photographer might have used to organize their photographs.
Archives3	"You also have issues figuring out what's important - how do you know which ones were more important to a photographer? If they put that information into a digital management program to rate their photographs taken, how do we keep this metadata and present it to the researcher?" "We need to know how to preserve this beyond just the image itself"
Archives4	Need to know a lot more technical information to understand the different digital photographs
Archives5	"Making the decision that what you get may not be what is termed original for the future. For preservation purposes you essentially create a new "original" in a more stable format. "That's completely opposite for what you do for paper records."

Another challenge mentioned by three of the archivists that I spoke with, two at larger institutions and one at a small historical society, was that it is not enough to simply keep the digital images themselves. Born-digital photographs are fairly meaningless unless the metadata about their creation and often the databases that they were kept in by the photographer who took the photographs is preserved as well. One of the archivists at Archive3 stated, "You also have issues figuring out what's important - how do you know which ones [photographs] were more important to a photographer? If they put that information into a digital management program to rate their photographs taken, how do we keep this metadata and present it to the researcher? We need to know how to preserve this beyond just the image itself." Another archivist, at Archive1, noted a major difference between working with analog photographs and born digital photographs is that, "unlike analog where a photographer will print out what is most significant or



pointed out on a contact sheet what is most significant, it is harder to know what photographs the photographer found most important.” She agreed with the previous archivist quoted, that they need to consider preserving the photo software the photographer might have used to organize their photographs in addition to the photograph itself. The archivist at a historical society noted that while the born digital photographs taken currently in 2010 actually are fairly easy to preserve and the files contain a good amount of metadata about what machine took the image and the date, many of the born digital photographs taken fifteen or twenty years ago have no metadata attached to them, which makes it even harder to preserve them. The same archivist, from Archive3, who mentioned the difficulty in knowing which photographs were seen as important to the photographer also noted the loss of many of the physical clues that helped the archivist figure out not just the context of the photograph but also the intrinsic and evidential values of a photograph. He stated, “Looking at the case a daguerreotype is in informs the archivist a lot about the value of that daguerreotype. How do you determine intrinsic and evidential value from a digital photograph?” These are questions that he thinks the archival profession needs to start asking in regard to born digital photographs, how is it determined what is important about a digital photograph, should the format matter more or the content? Should it matter what device was used to take the picture – whether it was on a Canon camera or on a cell phone? And most important, how does one preserve and provide this information to the researcher?

**Table 4 – Access to Born-Digital Photographs**

<b>Institution</b>	<b>Access to Born –Digital</b>
Archives1	Photography is a lot easier to migrate into the digital collections system because the existing systems are already designed For visual materials
Archives2	Access to the born-digital photographs is given through the same mechanism as access to digitized materials is - an online repository.
Archives3	No access currently provided.
Archives4	Currently host digitized photographs in an online database – will plan to provide access to born digital photographs through this online database as well.
Archives5	Provided currently through DVDs which are stored in the vault and pulled out when a patron requests them and then the DVD is used within the search room to view the images. Ideally would like to provide access online to the images. Provide access to digitized material online through Flickr.
Archives6	email images to patrons when requests come in.
Archives7	access only provided in house through a Filemaker Pro database; kept in the same database as digitized images

Providing access to the born digital photographs was another topic that was discussed at length by all the archivists. Experience with digitizing their analog photograph collections appears to have made the idea of how to provide access to born digital photographs easier than how to do so with many other electronic record forms. How to provide access was the main difference between born digital photographs and other electronic record forms, with archivists at five of the seven institutions commenting that in this area born digital photographs were easier to work with. One of the electronic record archivists, from Archive1, stated, “Photography is a lot easier to migrate into the digital collections system unlike word docs, websites, emails and other electronic records

because the existing systems are designed for visual materials it would be easy to just put the photographs right into the already built system. So access could be more easily provided for born digital photographs unlike other electronic records.” This sentiment was echoed by other archivists, who noted that they already had systems in place to provide access to their digitized photographs and born digital photographs are no different visually. One of the smaller institutions, Archive4, has not actually processed a collection of born digital photographs, but the archivist there noted that they already plan to load copies of the photographs into their online photograph database that they have in place for their digitized photographs. Loading born digital photographs onto a Flickr site was another way to provide access that a larger institution mentioned, as they already have one in place that gets a lot of hits for some of their digitized material. Burning copies of the born digital photographs onto DVDs or CDs for patrons to take home was the other main way that access is or will be provided to the institution’s born digital photograph collections. At one of the small historical society, Archive6, the archivist also noted how easy it was to email born digital photographs as well, which was the main way he provided access to the small born digital photograph collection his institution currently has.

**Table 5 – Donor Relations**

<b>Institution</b>	<b>Donor Relations</b>
Archives1	"Now you can take copies without taking the original away" "changes how one collects"
Archives2	Get different materials from donors; servers, discs, etc. No longer handed a box with papers in it.
Archives5	Working with some donors to set up a direct ingest process for born digital materials from that institution's servers to their servers.
Archives6	"Easier to get donations because they can just email a copy of an image to me"

The relationship with donors also changes with born digital photographs according to those I interviewed. Traditionally, with analog photograph collections, the collection is received into the archives at the end of a photographer's career or at the end of his/her life. However, now processes can be set up to ingest photographs in batches over time from the photographer's collection into the archives. Two archivists at Archive1 described how this new donor relationship could work. They said that you would essentially be setting up a records management type setting with the donor because "now you can take copies without taking the original away." A staggered ingest process with the donor would be set up rather than getting it all at once and the photographers would maintain copyright over their photographs at all times. They also believed that this could possibly lead to more donations as the photographers still have the ability to access their photographs and noted that this method "changes how one collects." Another archivist, at Archive5, mentioned that a staggered ingest process was currently being set up to collect born-digital photographs from another institution whose photographs they had collected for decades. The institution who is donating the photographs was given direct access to the archives' server and they simply load the photographs from their server onto the archives' server. According to the archivist, the process was working very well so far. This would mostly change donor relations with professional photographers or institutions with large photograph collections, such as a newspaper. Personal photographs that come in with manuscript collections are unlikely to be donated until the entire collection is brought in, in the opinion of one of the university archivists I interviewed.

**Table 6 – Working Independently**

<b>Institution</b>	<b>Each institution for itself</b>
Archives1	"Currently trying to develop some guidelines [in house]"
Archives2	Just ingested born digital materials on the fly - didn't follow any standards. Used Picasa to index and find duplicates to weed the images.
Archives3	Just started a working group to figure out the process/workflow to ingest born digital materials (all kinds) - using the Paradigm manual as a guide.
Archives4	"We always like to see what everyone else is doing and modify it for what we can do"
Archives5	Working on developing guidelines for a workflow for digital materials in house
Archives6	When funding is available, planning to work with large university in the area to provide online access to images and to store them long term

All of the archivists I interviewed described a mindset of figuring how to work with born-digital photographs on their own, particularly the larger institutions. Despite the fact that there are now many resources available on the internet about best practices for how to ingest born digital photographs, only one of the institutions I spoke with mentioned looking at any of them as inspiration for developing policies at their workplace. This was the Paradigm manual, mentioned earlier as being cited by one of the archives I spoke with to influence the workflows developed for ingesting all electronic records. The rest of the institutions noted simply that they developed in house processes for ingesting materials and in house creation of tools that worked best to both acquire and provide access to electronic materials. However, the archivists at smaller institutions made comments such as “we look at what Duke and UNC are doing and then adapt it to fit what we can do.” So rather than looking outside of the area, the smaller institutions are counting on the larger institutions to provide guidance as to how to work

with born-digital photographs. Yet, every one interviewed mentioned their curiosity as to what other institutions in the area are doing with born digital photographs. This suggests that there is an interest in knowing what others in the area are doing, and there could be substantial benefits from collaboration to face the challenges together.

### **Limitations of the Study**

Qualitative interviews allow for in-depth data collection but there are many limitations of them as well. Because of the time constraints of the project and a small response rate of seven archives, only a limited number were able to take place, which limited the amount of information collected. I attempted to overcome the limitation of geographic location somewhat by interviewing a variety of archive types, so that while the geographic location is a limiting factor, the type of archive is not. Two historical society archives, a government archive, three university archives, and a museum archive were all interviewed. The findings could also be subject to self-selection bias. The eight archives that never responded to the initial recruitment emails and the three archives that declined to do an interview with me all felt they had nothing to contribute to the study. Those who did participate had an interest in sharing what they were doing. Talking with those who do not work with born digital photographs could have enhanced the findings of the study to show the challenges that born digital photographs can present to even get into the door of the archives. One of the archivists who responded to the recruitment email but declined the interview stated it was because his institution did not accept born digital photographs at this time. The idea that the format of an archival material can prevent it from being collected is one that the archival community tends to frown upon,

but based on the response in this study, it is likely it occurs much more often than one would like.

## **Summary**

Photographs have always provided archivists with a different set of issues relating to processing and handling than textual documents. This study sought to find out if a similar occurrence was taking place with born-digital photographs. What the study found was that just as Susan Davis (2006) found few archival institutions had any policies in place for ingesting electronic records as a whole, few archival institutions have a set plan for working with born digital photographs. One of the archivists I spoke with stated, “The working space is now a hard drive and not a table top.” This difference between analog photographs and born digital photographs is a fundamental one. The interviews clearly illustrated that most archival professionals are still grappling with this difference and the many other challenges that born digital photographs present to their institutions.

While there is an abundance of literature in the archival and library science field related to electronic records and a fair amount of literature related to photographs in archives, there is very little literature on born-digital photographs in archives. The results of this study perhaps illustrate why there is so little literature. There are simply still too many questions in regard to born digital photographs that need to be answered. Perhaps one of the most interesting questions that is raised by this study is why the archivists who were interviewed did not report looking at what literature and best practices exist? Does this suggest that archivists are focused on establishing workflows within the institution and not working collaboratively outside the institution? There was a real interest from

everyone I talked to in knowing what other institutions in the area were doing. While this study provided relatively limited information about how the challenge of born digital photographs is being met, it could encourage others to look into what those in their community are doing with born digital photographs. One cannot know what others are doing without asking and hopefully this study will help to foster the idea of sharing information about how each institution is facing the challenge of ingesting born-digital photographs in the Triangle area and beyond.



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Resources.

## Appendix 1

How long have you been in this position?

What types of work do you do on a regular basis in this position?

What previous archival positions have you held?

What work did you do in those positions?

At your current place of work, can you take me through a step-by-step process of how analog photographs are processed?

~What standards or guidelines are followed for these processes?

How does your institution ingest electronic records?

~What standards or guidelines are followed for these processes?

What is the step-by-step process gone through to ingest born-digital photographs?

~What standards or guidelines are followed for these processes?

~In what ways do you see this process similar or different from the processing of analog photographs or electronic records?

How important do you view born-digital photographs to your collections at your institution?

What do you see as the challenges of working with born-digital photographs?

What types of uses do your born-digital photograph collections get?

How is access to the born-digital photograph collections provided to the public?

Could you show me how you store the born-digital photograph collections?

If they do have previous experience working with born-digital photographs at another institution:

How does your work here compare with your work at your previous place of employment?

Thank you for agreeing to meet with me today. Your input will be very useful in my study.