InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

Overview

General Study 07:
Survey of Recordkeeping Practices of Photographers using Digital Technology

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The Creator Context/Activity

This general study consists of a survey of photographers who use digital technology in their work, either as the sole means of capturing and producing images (68.6%), or in a "hybrid" environment alongside traditional analog photography equipment (31.4%). Photographers who work in the artistic (84.1%), scientific (9.2%) and government fields (6.7%) were included in the survey, to include creators from the three focuses of the InterPARES 2 Project. In addition to those who use digital technology to capture images, photographers were also included who use digital technology to manage and store their digital images.

The survey was conducted via a self-administered Web-based questionnaire consisting of thirty-three questions. An invitation to participate in the survey was either sent directly to photographers identified through professional associations in the United States, Canada, Great Britain and Australia, or was posted to these groups' e-mail newsletter or online forum.

The purpose of the survey was to get a first-hand look at photographers' concerns about the use and longevity of digital technology, while at the same time documenting the actual recordkeeping practices of photographers currently using this technology. The questions were aimed at exploring how images may be created as reliable records in the digital environment and what steps are taken to ensure their authenticity for the long term.

Documentary Practices Observed

"Native digital images are presented and consumed in the same contexts as traditional analogue photographs (i.e., newspapers and court proceedings), but digital technology challenges traditional assumptions about their production." (FR 2)[1]

While a surprising 73% of photographers surveyed were not aware of the main standards and guidelines for digital image creation and file maintenance promoted by various national and

[1] Jessica Bushey and Marta Braun (2006), "InterPARES 2 Project - GS07 Final Report: Survey of Recordkeeping Practices of Photographers using Digital Technology," 2. http://www.interpares.org/display_file.cfm?doc=ip2_gs07_final_report.pdf.

international institutions, 95.9% responded that they would be willing to follow such standards if they were applicable to their practice and made available to them.

Record Creation and Maintenance

The creation context for photographers is largely individualistic. Fully 78% of those surveyed claimed to not produce digital images with collaborators. Most individual photographers use their own "best effort" to ensure quality and consistency in their work, whereas "photographic organizations implement their own industry standards and best practices via procedures to ensure quality and consistency across the board." (FR 13)

Many photographers surveyed claimed to use version control and other related practices in the creation process. 50.9% apply naming conventions to the documents that they create, while others professed using unique identifiers for originals and digital surrogates as well as capturing metadata to identify and describe their image files. All in all, the photographers surveyed seemed to widely use routine procedures that provide control over creation and maintenance of their digital images.

The majority of photographers (76.5%) keep "draft" image files during the working process, with slightly over a third doing so as a means of notation, to reveal the way in which a digital image was compiled and manipulated at the different stages of its creation. Other reasons for doing this included as a means of helping to ensure access, as evidence of the work process and as a means of protecting intellectual property rights.

Based on the survey responses, industry requirements influence the choice of file formats in which the digital images are captured and produced. The two most prevalent formats for capture are JPEG (49.9%), which is an open standard that uses a compression algorithm and is used widely in photojournalism and TIFF, also an open standard, but which uses no compression. The same two formats are the most widely used for production, as well, with JPEG at 44.4% and TIFF at 37.1%.

As far as the software used for digital imaging, 97.7% of respondents use commercial off-the-shelf software to create their photographs, with Adobe Photoshop being the prevalent choice. This fact may lead to possible interoperability issues in the future.

Only one of the file formats discussed allowed the creator to record and even undo changes made to the "original," which was widely accepted as the in-camera image prior to any processing. This is the Adobe Photoshop PSD file format. Although a proprietary format and thus not an open standard, the PSD format allows a photographer to save digital images in uncompressed layers, permitting the creator to save a history of their processing actions and preserve an audit trail of changes made to the original. A history of these changes—in the order that they were performed—is kept along with the image file and allows the reversal of these image processing options.

Recordkeeping and Preservation

The choice of preservation practices among digital photographers is largely (45.1%) driven by their own knowledge of long-term digital image preservation, though it is also informed by recommendations from their colleagues (35.7%) and to a lesser extent (14.8%) by preservation guidelines or standards in the institution in which they may work. "Limited budgets and a lack of time were cited by respondents as obstacles to their implementation of more thorough approaches to preservation." (FR 16)

When they do use preservation practices, digital photographers often use a combination of more than one method. Some of the methods implemented include choosing to store images on off-site or external drives, considering the best file format for storage, naming originals and drafts in a way that can link them to each other in the future, and choosing specific software or hardware for their perceived attributes. When considering the best file format for storage, TIFF is often used, due to its use of lossless compression (no information is lost), although many photographers store their images in both TIFF and JPEG.

The researchers who conducted the survey hypothesized that photographers keep their digital images for re-use and reference, which was verified. By and large, photographers see the in-camera image as the original, similar to the negative in traditional photography. They also often keep multiple versions of a digital image "to enable the selection and use of multiple instantiations that will serve undetermined future needs." (FR 29-30)

Before the survey, there was also the hypothesis that photographers are not aware of the threat posed by potential technological obsolescence—be it from hardware, proprietary software or storage media. However, the survey revealed that "photographers are well aware of the fragility of the digital media they work with and the potential obsolescence of the technology." (FR 30)

Only slightly over one quarter of photographers surveyed claimed to have lost valuable files due to technological obsolescence. This is most likely due to the fact that 56.2% of respondents claim to take measures to protect their files from obsolescence. These measures include making backups, refreshing backup CDs and migrating file formats. Again, the photographers often used a combination of these methods.

The widespread use (29.8%) of the RAW format, a non-standardized file format that remains unsupported by some image software applications, presents an issue for future interoperability. However, the TIFF file format is backwards compatible and independent of specific hardware and software.

Most of the photographers surveyed claimed to use off-line storage for their original images and to make routine backups to CD or DVD. Despite the fact that "creators need to implement preservation practices into their procedures for creation, maintenance and storage of digital images that will ensure accurate, reliable and authentic records for the long term," (FR 1) nearly half of the photographers surveyed (49.9%) claimed to only consider long-term storage formats after a project has been completed. Only 22.1% consider preservation at the planning stage, with 19.5% giving it their attention during the working process.

Accuracy, Authenticity and Reliability

Accuracy

Although the term accuracy was not used in the survey, one question asking photographers what information they recorded about their digital images may respond somewhat to this notion. 34.2% of respondents claimed to record information describing the image itself, with a same number recording information about who created the images, when and where they were taken and why. This information can be seen as contributing to the accuracy of the digital image as a record.

Authenticity

Authenticity is most often associated in photography with assuring intellectual property rights, but in the scientific and governmental fields is often involved with the admissibility of

digital images as documentary evidence in court. Another consideration for authenticity in the scientific field is in forensic photography and medical imaging, which require that contextual information remain linked to the digital image throughout its entire life cycle.

Although only 43.1% of respondents claimed to protect their digital images from being manipulated or copied when sending them, many of those who responded in the negative actually did take measures such as attaching copyright information, embedding a digital watermark, including copyright metadata or specifying terms in contractual agreements. Often, a combination of these measures was used.

Reliability

The researchers who conducted the survey hypothesized that digital photographers are not generally concerned with authenticity and reliability, but this hypothesis was refuted by the finding, which instead suggest that "[p]hotographers are generally concerned with authenticity and reliability as evidenced by their routine capture of metadata and population of file information headers for digital masters and their surrogates, by the quality control procedures they undertook and by their routine preservation procedures that incorporated a measure of security." (FR 30)