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Digitizing the Ancient Past:

The Use of International Collaboration to Reunite the Dunhuang Collections

Located in an oasis of the Taklaman Desert in western China, Dunhuang was an important crossroads along the Silk Road, serving as the entry and exit point of China. More than just goods traveled along the Silk Road, Dunhuang also served as the entry point of Buddhism into China. Buddhism quickly spread and became the dominant religion in Dunhuang. Starting in the late 4th century and continuing on until the mid-14th century, caves were dug out of the cliff faces near Dunhuang to create Buddhist temples and shrines, now called the Mogao Caves. By the end of this period, more than a thousand caves had been formed and over 400 of them were decorated. Fast forward to 1900, long after Dunhuang had been abandoned, a cache of hidden manuscripts was found by a Buddhist monk. Roughly 50,000 documents were discovered in a cave that was sealed in the early 11th century. These records include copies of sutras, contracts, literature, prayer sheets, letters, and several other types of documents. Soon after this “Library Cave” was discovered and opened, western explorers including Sir Aurel Stein and Paul Pelliot, traveled to collect some of this material for museum collections.

Today the Dunhuang manuscripts are spread out in collections all over the world. In 1994 an international collaboration called the International Dunhuang Project (IDP), was founded with the goal “to establish the full extent of the documentary legacy from

Dunhaung and other Central Asian Sites and to share that information through the development of an international database”. (IDP website) The IDP has many collaborating members including, the British Library, the National Library of China, the Dunhaung Academy, Bibliothèque nationale de France, and the Berlin-Brandenburg Academy of Sciences and Humanities. At the start of the project the main goals were to begin digitization and create preservation standards for all of the organizations involved. These standards cover cataloging methods, storage techniques, and the production of “surrogate forms”. The IDP also encouraged the development of new conservation techniques and material science research from the start.

The IDP is one of the first projects of its kind to create a collaborative online catalog. This type of online international collaboration involving archaeological material has been termed “virtual reunification”. Virtual reunification is a potential compromise to full repatriation. The Dunhaung manuscripts is but one case of past archaeological explorers taking away artifacts from the countries where they were first found. Repatriation is an extremely political and sensitive issue between many countries and the founding of the IDP is an example of a possible strategy to reunite collections. Virtual reunification is a recent concept but current scholarship is working to outline guidelines and principles for future projects. “...a virtual reunification project should seek to ‘make its content materials accessible to scholars as an identifiable collection or unit, to present them in a context that encourages thoughtful and constructive study of their origins, provenance, and cultural content, and to offer the various owner libraries a chance to work together while not feeling pressured to give up control of materials they have come to cherish as their own’ (Austenfeld 2010, 146).” (Punzalan 295)

The goal of this project is to study the use of an online database as a tool of “virtual reunification” and evaluate its ability to accurately represent archaeological material. To do this I used the IDP as a case study to evaluate of the extent to which “virtual reunification” was accomplished and measure the quality of representation and digitization of archaeological material. Using this case study I will also consider the impact future technological advances could have on the IDP and ways that it can be enhanced to improve the user’s experience.

Virtual reunification projects are not without their challenges, however there are many benefits to undertaking such a wide-scale project. For the IDP, one of these benefits has been the creation of conservation standards. These conservation standards were the basis for the creation of the IDP and one of its founding principles. The materials used in the paper and ink of the Dunhuang manuscripts are all highly susceptible to deterioration. These manuscripts are remarkably well preserved due to their extended storage in the dry, desert in a sealed cave where no sunlight could enter. However once they were removed from these conditions and then transported thousands of miles to various climates around the world, many were in need of immediate conservation. Through material science research and conservators funded through the IDP, new treatment techniques have been developed and the overall condition of the manuscripts in every collection has improved. For example, the National Library of China in Beijing has a conservation lab where currently several of the Dunhuang manuscripts are being treated. Many of these manuscripts are fragmentary so conservators have been using Japanese rice paper to patch up any holes and strengthen the overall structure of the manuscripts.

Another goal of virtual reunification is to increase scholarly access to the materials. The translation of manuscripts' contents and research into various languages is important to the database's accessibility to researchers all over the world. Every participating institution works to translate the manuscripts and research into their primary language. The IDP website can be used in English, Chinese, Russian, Japanese, German, French, or Korean. The IDP's free online database has certainly increased accessibility to the collections and in turn, has increased collaborative research between institutions. For example there is a current project focused on translating the Turfan texts in the Berlin-Brandenburg Academy of Sciences and Humanities that also includes the IDP members in Japan. There are also multiple exchange programs between various IDP institutions that allows scholars to conduct their research on other collections. Recently there were several scholars from the Dunhuang Academy who conducted research on the British Library collections for a few months.

Currently there are also many conservation research projects conducted by collaborating members from various institutions, such as a recent project that analyzed wall painting fragments from one of the Mogao Caves. This research was conducted by Glenn Gates of Harvard University and by Sanchita Balachandran of Johns Hopkins University. In this case the database did not play an integral role in the research itself, however it did serve as a place to publish the research results and share it with the Dunhuang research community. Accessibility to all of the Dunhuang manuscripts is important not only to continue to encourage research on the texts but it is also vital to continue conservation research and treatment of the objects.

According to the Director of the IDP, Dr. Susan Whitfield, the IDP database has vastly increased the audience of the Dunhuang manuscripts. The visitor statistics of the website conclude that people from all over the world of all ages have visited the database. The increased audience has also increased research funding from donations generated from visitors to the website. The IDP has a donation page set up on its website where users can “Sponsor a Sutra” and help to fund research and continued conservation of the artifacts. The money collected from these donations is used to cover the costs of digitizing a manuscript in any of the IDP institutions.

The database technology itself is advantageous for researchers. The high-resolution images of the manuscripts, once they are digitized, enable researchers to see the object up close, without the need to be in physical contact with the artifact. These images may occasionally show details on the manuscript that were difficult to see with the naked eye in the original. In addition, due to the delicate condition of these manuscripts, limiting the amount they are handled clearly favors digitization of the original document.

The challenges the IDP faces are typical of virtual reunification projects. One of the primary challenges is a chronic need for research and conservation funds. The conservation required for these manuscripts as well as the research analysis techniques both require extensive funding. Every institution involved in the IDP is able to allocate some funds for the caretaking of their own collections, however, in order to staff the digitization of the material onto the IDP website, more funding is needed by the participating institution. Foundations such as the Andrew W. Mellon Foundation have

been extremely generous to the IDP in the past, but there is still a chronic funding shortage.

In any international collaboration, conflicting views and priorities can prove to be a major obstacle. For the IDP, several measures have been taken to try to ameliorate certain conflicts. One of these measures was to install servers in every IDP collaborating institution, where the staff can add their digitized manuscripts to the database. Ownership of these servers also allows the institutions to maintain their ownership of their collections and their information, in a digital way. However, despite the individualized servers, institutions often want their staff to prioritize digitizing the material and cataloging it onto their own collections database before spending time and money adding to the IDP database. For the Berlin-Brandenburg Academy of Sciences and Humanities, this is an ongoing problem due to the lack of exterior funding that would allow them to spend time digitizing their collections onto the IDP database, not just their institution's database.

As previously mentioned, conflicting international views can be a challenge to projects like the IDP. The history of the Dunhuang manuscripts and their removal from their original context is a disputed topic. For example while the British Library praises Sir Aurel Stein for his adventurous exploration and keen eye for collecting incredible objects, many Chinese scholars see him as a thief of their cultural heritage. However Chinese scholars praise Paul Pelliot because despite taking manuscripts back to France, he first notified the Chinese scholars in Beijing of the Library Cave discovery and they were able to subsequently protect the rest of the manuscripts from being taken out of

China. These differing interpretations of the past have also been seen in the scholarship on the content of the manuscripts themselves.

The current IDP website is easily navigated and can be used in several different languages. However the overall design and functionality is now out-of-date. According to Dr. Susan Whitfield, the website and database are currently undergoing a massive upgrade that should be posted later this year. Even with this update, there remain limitations to current technology and database software that affects the virtual reunification of this material. One of the main limitations of currently technology is the inability to attach an artifact to its context in a database format. Each manuscript has several important contexts, where and when it was originally written, the Library Cave, and its current location. All of these contexts reveal important historical information about the manuscript. However in the IDP database, the focus of each catalog entry is the text of the manuscript and the digitized image. There is currently no section of the entries that focuses on history of ownership or previous contexts.

The most valuable information an archaeological artifact can have is provenance. Knowing an artifact's context is key to understanding how it was produced, used and valued by a culture. At the site of the Mogao Caves as well as in the IDP database, there is a struggle to reproduce the context in both the physical and digital space. With many of the artifacts and manuscripts removed from the caves, these once used spaces are now sterile and missing important parts of their history. On the database, artifacts are completely removed from their context and often evaluated as singular objects, rather than part of a larger collection. Images of each manuscript's original context within each database entry would be a simple way to begin to include context into the database.

However a more immersive form of technology, such as 3D imaging, would be ideal. The University of Chicago's Xiangtangshan Caves Project has made great strides in developing 3D imaging of archaeological sites by creating interactive 3D models of the Xiangtangshan sculptures and cave shrines in China. In the caves themselves using replicas or placards discussing the material found and removed from each cave would provide a more realistic picture of what the caves would have been like originally.

In a situation where repatriation is unrealistic, the IDP has virtually reunited the collection found within the Library Cave. The public nature of the database allows the information and material to be owned simultaneously by multiple institutions and the broader public. The sharing of information has led to international collaborative research on the collections, which in turn has brought increased funding for the continued conservation and research of the artifacts. The boundaries of the digital space are constantly being pushed and perhaps in the future a more immersive representation of an artifact's context will be possible. The current use of 3D imaging in recording archaeological sites and objects is a promising method to virtually combine artifacts and their contexts. Every year more inter-institutional collaborations begin, often with a final product of a database or an online exhibit. The IDP has made great strides in improving on the methods and strategies of virtual reunification. It was one of the first projects of its kind and its progression will serve as an important source of information and guidelines for future collaborative digitization projects. While the IDP has used a lot of funding and will continue to require consistent effort in the digitization process and in keeping up to date with current technology, it has had a huge impact on the Dunhuang scholarship. Even though the Dunhuang manuscripts are in collections all over the

world, the IDP has made them accessible to everyone and the manuscripts are better preserved for generations to come. Despite the challenges such a large international collaboration can bring, projects like the IDP are crucial to the continued research and preservation of ancient collections. “Virtual reunification” is a compromise in terms of repatriation, but a vital step in expanding and enhancing the research done on related international collections.

Works Cited

- Austinfeld, A. M. "Virtual Reunification as the Future of 'codices Dispersi': Practices and Standards Developed by E-codices - Virtual Manuscript Library of Switzerland." *IFLA Journal* 36.2 (2010): 145-54. Web.
- Brindley, Lynne J. "Challenges for Great Libraries in the Age of the Digital Native." *Information Services & Use* (2009): 3-12. Web.
- Green, Andrew. "Big Digitisation: Origins, Progress and Prospects." *International Journal of Humanities and Arts Computing Intl J Humanities & Arts Computing* 4.1-2 (2010): 55-66. Web.
- Hsu, Tien-Yu. "A Digital Museum Framework Based on a Member-Centered Virtual-and-Physical Unification Service Model." *International Journal of Humanities & Arts Computing* (n.d.): 84-99. Web.
- Hsu, Tien-Yu. "A Digital Museum Framework Based on a Member-Centered Virtual-and-Physical Unification Service Model." *International Journal of Humanities & Arts Computing* (n.d.): 84-99. Web.
- "The International Dunhuang Project: The Silk Road Online." *The International Dunhuang Project*. N.p., n.d. Web.
- Li, Xiangyang, Dongming Lu, and Yunhe Pan. "Virtual Dunhuang Mural Restoration System in Collaborative Network Environment." *Computer Graphics Forum* 19.3 (2000): 331-40. Web.
- Lutz, B., and M. Weintke. "Virtual Dunhuang Art Cave: A Cave within a CAVE." *Computer Graphics Forum* 18.3 (1999): 257-64. Web.
- Prochaska, Alice. "Special Collections in an International Perspective." *Library Trends* 52.1 (2003): 138-50. Web.
- Punzalan, Ricardo L. "Understanding Virtual Reunification." *The Library Quarterly* 84.3 (2014): 294-323. Web.

- Shenton, Helen. "Virtual Reunification, Virtual Preservation and Enhanced Conservation." *Alexandria* 21.2 (2009): 33-45. Web.
- Snow, Cason. "The International Dunhuang Project: The Silk Road Online." Rev. of *IDP Website*. *Charleston Advisor* Apr. 2008: 28-33. Web.
- Tseng, Yung-Kuan, Hong-Kun Chen, and Pi-Yen Hsu. "The Use of Digital Images Recording Historical Sites and 'Spirit of Place': A Case Study of Xuejia Tzu-chi Temple." *Journal of Humanities & Arts Computing* 7 (2013): 156-71. Web.
- Whitfield, Roderick, Anne Farrer, S. J. Vainker, and Jessica Rawson. *Caves of the Thousand Buddhas: Chinese Art from the Silk Route*. London: Published for the Trustees of the British Museum by British Museum Publications, 1990. Print.
- Whitfield, Roderick, Susan Whitfield, and Neville Agnew. *Cave Temples of Mogao: Art and History on the Silk Road*. Los Angeles: Getty Conservation Institute and the J. Getty Museum, 2000. Print.
- Whitfield, Susan. *Life along the Silk Road*. Berkeley: U of California, 1999. Print.