

Communities, Innovation, and Critical Mass: Understanding the Impact of Digitization on Scholarship in the Humanities Through the Case of Tibetan and Himalayan Studies

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(except where otherwise noted)

For Matthew.

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Abstract

The dominant discourse surrounding academic research libraries today is one of change and scholarship in the humanities has seen a similar revolution in practice. Yet, most of the documented changes in either have been ascribed to the availability of online journal materials. Despite the accessibility of millions of rare, digitized primary resources freely available on the web, little has been done to understand the impact of these materials on either the practice of scholarship or on libraries. The research described in this proposal is an investigation into digitization projects involving rare and closely guarded materials and the effects of these projects on humanities scholarship. This thesis uses both qualitative and quantitative measures to:

1. Assess the impact of digitized primary resources on the work of humanities scholars;
2. To construct a model based on the findings that explains current use of digitized primary sources; and
3. To discuss the implications of these findings for academic research libraries.

The research questions are answered through a detailed analysis of the role of digitization in the field of Tibetan and Himalayan studies. The author presents detailed evidence of *how* digitization is changing the inputs, practice, and outputs of scholarship in this field, as well as the characteristics of digitization that have led to these changes. Importantly, these findings separate out the success of individual projects from the success of digitization across the field as a whole. Support for community and innovation as well as the presence of critical mass across the field are stressed as the three most significant factors.

Finally, the implications of these findings are assessed within a newly proposed model of academic libraries. This “scholar-centric” model is intended to provide both a theoretical framework for the research findings as well as a normative provocation for structuring future research and discussions about the role of academic libraries and their presence online.

Table of Contents

Acknowledgements	v
Abstract.....	vi
Figures.....	xi
Tables	xiv
Chapter 1: Introduction.....	15
<i>1.1 Research Questions.....</i>	<i>17</i>
1.1.1 The impact of digitization on scholarship in the humanities.	18
1.1.2 Determining the success of digitization projects.....	20
1.1.3 The impact of the changing relationship between humanities scholars and primary resources on academic research libraries.	21
<i>1.2 Parameters of This Research.....</i>	<i>23</i>
Chapter 2: Academic Research in the Humanities and its Relationship to Libraries	
Today	24
<i>2.1 The Past and Present of Academic Research Libraries</i>	<i>26</i>
2.1.1 Audience.....	26
2.1.2 Mission.	27
2.1.3 Methods for understanding libraries: the Parnassan and the Universal.....	29
<i>2.2 Understanding How Humanities Scholars Use Libraries</i>	<i>33</i>
2.2.1 Collaboration in the humanities.	35
<i>2.3 The Current Threat Against Research Libraries</i>	<i>36</i>
<i>2.4 Understanding Digital Technologies in Libraries.....</i>	<i>43</i>
2.4.1 The myth of digital libraries.....	43
2.4.2 Digital humanities.....	46
2.4.3 Defining digitization projects.....	50
2.4.4 Why scholars use digital tools.....	54
Chapter 3: Creating a New Theory of Libraries	57
<i>3.1 Existing Library Theory.....</i>	<i>57</i>
<i>3.2 The Problem with Information.....</i>	<i>62</i>
<i>3.3 A New Theory of Libraries.....</i>	<i>66</i>
<i>3.4 Theories of Technology and Society.....</i>	<i>68</i>
Chapter 4: Methods.....	71
<i>4.1 Preliminary Work.....</i>	<i>76</i>

4.2 Special Problems in Measuring Impact.....	77
4.3 Qualitative Methods.....	79
4.3.1 Interviews.....	79
4.3.2 On-site Observation.....	83
4.3.3 Document Analysis.....	85
4.4 Webometrics & Surveys.....	86
4.4.1 Analytics and web log file analysis.....	87
4.4.2 Inlink Analysis.....	88
4.4.3 Survey.....	93
4.4.3.1 Summary of survey respondents.....	95
4.5 Data Organization and Analysis.....	99
Chapter 5: The Case of Digitization in Tibetan and Himalayan Studies	102
5.1 Why Tibetan and Himalayan Studies?.....	103
5.2 Background on Tibetan and Himalayan Studies.....	106
5.3 Understanding the Role of Texts in the Tibetan Diaspora.....	110
5.4 Understanding the Role of Technology in Tibetan Buddhism.....	122
5.5 The Politics and Popularity of Tibet.....	128
Chapter 6: Findings Related to the Impact of Digitization on Scholarship in the	
Humanities Part One: Changes in the <i>Inputs</i> of Scholarship.....	131
6.1 Introduction	131
6.2 Changes in the Inputs of Scholarship.....	132
6.2.1 General use of digitized resources by Tibetan and Himalayan scholars.....	133
6.2.1.1 Are scholars increasingly using digitized resources?	133
6.2.1.2 Are more scholars citing electronic/digital versions than they used to and do they cite things they have not seen in person?	135
6.2.2 Use of personal and local digital collections.....	138
6.2.3 New ways of accessing information.....	141
6.2.3.1 Magnification.....	142
6.2.3.2 Searchability.....	143
Chapter 7: Findings Related to the Impact of Digitization on Scholarship in the	
Humanities Part Two: Changes in the <i>Practice</i> of Scholarship	151
7.1 Understanding the Research Process as Part of the Practice of Scholarship	151
7.1.1 Information seeking as one part of research.....	151
7.1.2 Why understanding information seeking alone is insufficient.....	154

7.2 <i>Speed, Travel, and Convenience</i>	156
7.2.1 Speed.....	156
7.2.1.1 Speed as a factor in the broader humanities.....	157
7.2.2 Travel.....	157
7.2.3 Convenience.....	161
7.2.3.1 Transformation through convenience.....	162
7.3 <i>Collaboration</i>	165
7.4 <i>Widening Audiences</i>	169
Chapter 8: Findings Related to the Impact of Digitization on Scholarship in the Humanities Part Two: Changes in the <i>Outputs</i> of Scholarship	177
8.1 <i>Formats</i>	177
8.2 <i>The Reward Systems</i>	184
8.3 <i>Changes in Research Questions and Methods</i>	190
8.4 <i>Perception of Negative Impacts</i>	197
8.4.1 Changes in reading habits.....	198
8.4.2 Are more resources better?.....	198
8.4.3 Loss of control.....	201
Chapter 9: On the Success of Digitization and Digitization Projects	203
9.1 <i>Introduction</i>	203
9.2 <i>The Successful Integration of Digitization into Tibetan and Himalayan Studies</i>	203
9.2.1 The importance of critical mass.....	204
9.2.2 The community of Tibetan and Himalayan scholars.....	208
9.2.2.1 Sharing resources.....	209
9.2.2.2 A marginalized community.....	212
9.2.2.3 The influence of Tibetan Buddhism.....	214
9.2.2.4 Saving Tibet.....	218
9.2.2.5 On 'giving back' and digital repatriation.....	221
9.2.2.6 Passion, personal commitment, and a moral imperative.....	224
9.2.2.7 Leadership.....	225
9.2.2.8 The role of community in dissemination and awareness.....	226
9.3 <i>On the Success of Particular Projects</i>	229
9.3.1 Innovations in access.....	231
9.3.1.1 Innovation that extends existing practice.....	232
9.3.1.2 Promoting and preventing simple forms of access.....	236

9.3.2 The effects of innovation on usability.	238
9.3.2.1 Identifying and understanding disparate audiences.....	238
9.3.2.2 Institutional support models for innovation.	249
9.3.3 Other critical issues.....	252
9.3.3.1 Sustainability.....	252
9.3.3.2 Critical mass in individual projects.....	258
9.3.3.3 Quality and trust.	258
9.4 On Failure.....	260
Chapter 10: The Impact of Digitization on the Future of the Academic Research	
Library.....	264
10.1 The Necessity for Understanding this Research in the Context of the Library.....	264
10.2 The Perceptions of the Library in Tibetan and Himalayan Studies.....	266
10.3 A Scholar-centric Model of Libraries.....	267
10.3.1 The subtleties of access: innovation and critical mass.	269
10.3.2 Community.....	271
Chapter 11: Discussion and Conclusions	275
11.1 Implications and Lessons Learned	276
11.1.1 A new understanding of success and sustainability.	276
11.1.2 Reiterating the convenience and speed of digitized resources.....	279
11.1.3 Understanding the role of usability and accessibility.....	281
11.1.4 Community.....	284
11.1.5 Innovation	287
11.1.6 Critical Mass	289
11.2 Contextualizing the Debate About Reward Systems.....	290
11.3 Further Implications for Libraries.....	293
11.4 Limitations of This Research.....	294
11.5 Future Directions	296
Appendix 1: Interview Framework.....	299
Appendix 2: Survey of Scholars and Potential Users	301
Resources Cited.....	329

Figures

Figure 1: The library theories emerging through the three major subfields of library and information science, and the wide area of library theories (Suominen, 2007)	58
Figure 2: Relationship between the case, embedded cases, and additional data.	71
Figure 3: Percentage of interviews by category.	81
Figure 4: The number of inlinks to 22 projects over an eighteen-month period.	92
Figure 5: The number of inlinks to the web pages of the embedded cases over a twelve-month period.	93
Figure 6: Respondents by gender.	95
Figure 7: Respondents by age.....	96
Figure 8: In what year did you earn your highest degree?	96
Figure 9: Which of the following best describes your highest degree earned?	97
Figure 10: How would you describe your level of involvement in the following activities?.....	97
Figure 11: What is your field of specialization?.....	98
Figure 12: How would you rate your expertise with technologies like the Internet and e-mail?..	98
Figure 13: Wordle word cloud from an interview transcript.	100
Figure 14: The relationship of Tibetan and Himalayan studies to similar disciplines in the humanities and social sciences.	108
Figure 15: Stones carved with prayers, Tsugladkhang Temple complex, Dharamsala, India.....	114
Figure 16: Wall painting of a monk reading, Norbulingka Institute, Sihdpur, India.....	115
Figure 17: Top: Prayer flags, Boudhanath stupa, Kathmandu, Nepal. Bottom: Prayer flags, detail.	116
Figure 18: Tibetan Buddhists circumambulating the Library of Tibetan Works and Archives, Dharamsala, India. Note: Each carries in their left hand a mala, or string of prayer beads.	117
Figure 19: The inside of all prayer wheels contains strips of paper with written or printed mantras and prayers.....	118
Figure 20: Blurring the lines between library and temple. Top: Library in the Temple at the Norbulingka Institute, Sihdpur, India. Bottom: Shrine in the stack room of the Library of Tibetan Works and Archives, Dharamsala, India.	119
Figure 21: Top: Monks turning prayer wheels at the Tsuglagkhang Temple complex, Dharamsala, India. Bottom: Giant prayer wheel, Dharamsala, India.	120
Figure 22: Two kinds of prayer wheels.....	125
Figure 23: An animated illustration of a prayer wheel, which if opened in a browser will spin in a clockwise direction.	127
Figure 24: From the sales brochure for the Tibet-Tech Prayer Wheel.	127
Figure 25: “Scenes from Mysterious Thibet, Which a British Armed Force is Penetrating at Last.” New York Tribune, Sunday, November 29, 1903.	129

Figure 26: When you use the following sources in your work do you access them online, in print, both, or do you never use them? Answers from the Tibetan and Himalayan Studies survey.	134
Figure 27: How often do you use the following in your work? Answers from the Tibetan and Himalayan Studies survey.	134
Figure 28: How often do you use the following in your work? Answers from the TIDSR survey.....	135
Figure 29: Citation of electronic resources. Answers from the survey of Tibetan and Himalayan studies.	136
Figure 30: Homepage of the Tibetan and Himalayan Library indicating the prominent “How to Cite” feature.....	137
Figure 31: Have you ever used the original version of the documents available on this site?	138
Figure 32: Please describe how you generally use digitized resources. Answers from the Tibetan and Himalayan Studies survey.	140
Figure 33: Please describe how you generally use digitized resources. Answers from the TIDSR survey.....	141
Figure 34: Monk creating a fully searchable version of a book. Shechen Monastery, Kathmandu Nepal.....	147
Figure 35: The place of information seeking within the process of scholarship.	151
Figure 36: The information-seeking cycle.	153
Figure 37: Please describe how you use these resources.....	159
Figure 38: The Tibetan book form can be large and often unwieldy.	161
Figure 39: An Entry in the Historical Tibetan Dictionary in the Tibetan and Himalayan Library. Each small person icon represents a contributor.....	166
Figure 40: A TBRC record in Tibetan (left) and transliterated (right).	174
Figure 41: Interactive floor plans of Meru Nyingba monastery, Tibet. Embedded in the floor plans at left are panoramic images of the monastery, shown at right.....	179
Figure 42: Interactive floor plans from Meru Nyingba monastery, Tibet. When a user clicks on a room in the floor plan, a description and still images appear.	180
Figure 43: Navigating the Tibet Album photographs through an interactive map of the photographers' routes through Tibet.	182
Figure 44: This resource is... Responses from the survey of Tibetan and Himalayan scholars.	188
Figure 45: Chökyi Nyima Rinpoche, the abbot of Ka-Nying Shedrub Ling Monastery (center) receiving a Mac Mini computer containing eight thousand texts from Gene Smith (right). He lifts it to his head and recites a blessing.....	218
Figure 46: Awareness and use of digitization projects in Tibetan and Himalayan studies, from the online survey of Tibetan and Himalayan scholars.....	227
Figure 47: How did you find out about this resource? Answers from the survey of Tibetan and Himalayan scholars.....	228

Figure 48: The researcher's hypothesis at the outset of this research was that accessibility, usability, and sustainability were the key variables for the success of individual digitization projects.....	230
Figure 49: The actual relationship between accessibility, usability and digitization projects is far more complicated than originally assumed.	230
Figure 50: Photograph in the Tibet Album. Note the different expressions of the photograph available in the bottom, right hand corner.	235
Figure 51: "This resource is..." Findability and usability across the research sub-cases.	238
Figure 52: Map of TBRC installations. The blue flags are paid subscriptions; the red ones are free installations.	241
Figure 53: Dzongsar Kyentse Rinpoche uses the TBRC Digital Archive at a puja in Taiwan. ...	242
Figure 54: Top: Chökyi Nyima Rinpoche receiving an installation of the TBRC collection of texts. He lifts it to his head and chants a prayer, just as he would with a paper book. Bottom: After printing texts from the TBRC library, they are wrapped in the traditional manner and lifted to the head to show respect. This was part of a large effort to recreate the library of the Danzan Ravjaa's Khamar Monastery ("Wrapper's Delight," 2007).	243
Figure 55: Printing pecha texts from TBRC Digital Library "digital woodblocks," Pulahari Monastery.	244
Figure 56: A Tibetan text reformatted to fit into a File-o-Fax. This edition was created and distributed for celebrations honoring what would have been the author's one-hundredth birthday.	245
Figure 57: The File-o-Fax version of the text, in use at the Centennial Celebrations, Shechen Monastery, Kathmandu, Nepal.	246
Figure 58: Some of the Nepali language collections waiting to be scanned at the offices of the Mandan Puraskar Pustakalaya.	255
Figure 59: The model of library that puts information at the center has been dominant for about one hundred and fifty years.	267
Figure 60: A new model of library is proposed, putting the scholar at the center. In this model, information retrieval becomes one of the many services offered in support of scholarship.	268
Figure 61: The relationship between innovation and number of users.....	270
Figure 62: Percentage of Users Who Found These Resources "Easy to Use"	283
Figure 63: 89% of the Respondents who are Aware of the Tibetan and Himalayan Library Use It Regularly or Occasionally	284
Figure 64: The relationship between libraries, scholarly communities, innovation, and sustainability.	289

Tables

Table 1: Typology of Digitization Projects	52
Table 2: The five embedded cases.....	72
Table 3: Sites visited. The starred projects represent the embedded cases.	83
Table 4: Research Question One: The Impact of Digitization on Scholarship in the Humanities	132

Chapter 1: Introduction

In 1968 librarian E. Gene Smith began working in the New Delhi field office of the Library of Congress. Over the next twenty-five years he would design and implement a program to republish thousands of Tibetan texts held by the refugee communities in India, Nepal, Sikkim, and Bhutan. Most of the collections of Tibetan texts in libraries today are built on those published by Smith in this program;¹ he revolutionized access to Tibetan texts for Westerners and the Tibetan Diaspora alike. Remarkably in 1999, he did it again with the establishment of the *Tibetan Buddhist Resource Center* (TBRC).² TBRC is now actively engaged in the digitization of these same texts and more. Most Tibetan scholars use this online resource and many say their work simply could not be done without it. Yet Smith himself said that the TBRC *could not* have been created within a library. The story of how a very successful, text-based project that is actively engaged in the preservation and dissemination of cultural heritage *could not* have been accomplished within an academic library is one of the dichotomies that this research will uncover.

The second part of the story comes not from Asia, but from the thousands of libraries around the world engaged in digitization of their holdings. In 1990 the U.S. Library of Congress began to digitize from its collections some of the great treasures of American history and culture. Nine million items from the U.S. “nation’s memory” that scholars previously had to travel to the Library of Congress to see are now available for use on any networked desktop, laptop, or handheld device (Library of Congress, 2008).³ Thousands of other cultural heritage institutions—libraries, archives, museums, and monasteries—have followed suit and today there are close to

¹ This program and the text collection that came from it are commonly known as PL480. For more information see the “Print holdings” section from the Tibet Center at the University of Virginia (University of Virginia, 2010).

² For more information on the TBRC see the Digital Dharma web site (<http://www.digitaldharma.com>) and the TBRC web site (<http://tbrc.org>).

³ These collections are mostly available through their “American Memory” web site (<http://memory.loc.gov>).

fifty million rare library items freely available on the Internet.⁴ This should have caused a revolution in the scale and practice of the disciplines that depend on such materials (chiefly the humanities), but has it?

The dominant and sizable discourse surrounding research libraries today is one of change. Reg Carr, former Bodley's Librarian at the University of Oxford, has characterized the last ten years for this segment of libraries as "a period of faster, greater and more continuous change than has ever before been experienced by the long history of the libraries that lie at the heart of academic research institutions" (Carr, 2007, p. xv). The change Carr refers to has resulted in an all-encompassing transformation of the characteristics of library systems and services and at its heart are information and communications technologies (ICTs).

Scholarship in the humanities has seen a similar revolution in practice. While there are still significant differences in ICT use between the many disciplines that comprise the humanities (Nentwich, 2003, p. 17), there is little question that online access to research materials has resulted in significant change for many humanists⁵ (Bates, Wilde, & Siegfried, 1995; Borgman, 2007; Greenstein, 2003). Yet most of these documented changes have been catalyzed by the availability of journal materials online. The availability of large databases of journals along with pre-print repositories such as ArXiv (<http://arxiv.org/>) and the Social Science Research Network (SSRN) (<http://www.ssrn.com/>) has, according to Borgman (2007), revolutionized access to research and scholarly communication. As she points out, preprints used to be distributed through closed networks of colleagues. This was often because of the significant lag time between submission and publication and, even worse, delay between publication and indexing. Preprint archives now provide immediate access to hundreds of thousands of articles. The top ten papers

⁴ This estimate is based on the 9 million items made available by the Library of Congress, the 7 million at Harvard, the 1 million from the University of Michigan, and the supposition that there at least a thousand other projects that contain at least 22,000 objects each.

⁵ The word "humanist" will be use throughout this research interchangeably with the term "humanities scholar." It should not be confused in this instance with the practice of humanism.

on SSRN, for example, have all been downloaded over 25,000 times apiece (“SSRN Top 10,000 Papers,” 2010).⁶ Open access movements have had a similar impact on scholarly publishing more broadly with new models of scholarly publishing emerging (Borgman, 2007; Meyer, Madsen, & Fry, 2010). Yet Borgman, Lynch and others who have done perhaps the most and most thorough work in looking at changes in scholarship in the digital age systematically ignore historical materials and even monographs. Everywhere they speak of information, data, and knowledge, but nowhere of books or archives, even though these formats are so central to the practice of the humanities (Stone, 1982; Talja & Maula, 2003; Watson-Boone, 1994; Weintraub, 1980). The count of rare, digitized primary resources freely available online (without a subscription to a database as is the case with much of the journal literature) is also growing steadily, yet little has been done to understand the impact of these materials within the context of new revelations about disciplinary practice. In short, this research asks: given what is now known about the effects of online (and increasingly open) access to journal materials, what will be found through the analysis of new models of access to rare materials, and what can it tell us about the future of libraries?

1.1 Research Questions

This research is an investigation into digitization projects involving rare and closely guarded materials and the effects of these types of projects on humanities scholarship. Through a series of qualitative and quantitative measures, the goals of this work are:

1. To explore and analyse the use of digitized resources by humanities scholars (i.e., to describe the status quo);
2. To assess the impact of digitized primary resources—with a focus on rare and closely guarded collections—on the work of humanities scholars;
3. To construct a model based on the findings that will both explain current use of digitized primary sources and uncover the essential characteristics of successful digitization projects that involve rare materials;

⁶ Data retrieved from the SSRN web site (<http://papers.ssrn.com>) on 3 February 2010.

4. To discuss the implications of these findings for academic research libraries.

This work has been shaped by the boundaries created by these goals. Within these boundaries, the investigative process has been led by the research questions, of which there are three:

1. What is the impact of the digitization of rare and closely guarded materials on scholarship in the humanities?
2. What are the factors that determine the success of library digitization projects that involve rare and closely guarded materials?
3. What is the impact of the changing relationship between humanities scholars and rare primary resources on libraries?

1.1.1 The impact of digitization on scholarship in the humanities.

Central to the first research question, “what is the impact of the digitization of rare and closely guarded materials on scholarship in the humanities?” is the definition of “impact.” In order to accomplish this research, the concept of impact therefore had to be (however temporarily) fixed into place. During the data-gathering phase, this was done by devising a set of sub-questions designed to shape the definition of the “impact” within the context of the research. These sub-questions also tie the concept of “impact” to clear indicators, some examples of which follow the sub-questions below in italics.

1. What is the impact of the digitization of rare and closely guarded materials on scholarship in the humanities?
 - a. Are these digitization projects affecting the inputs of humanities scholarship?
 - i. Are scholars increasingly using digitized resources?*
 - ii. Are there more scholars citing electronic/digital versions?*
 - iii. Do scholars now cite things they haven’t seen in person?*
 - b. Is the practice of humanities scholarship changing?
 - i. Is there more teamwork and/or collaboration?*
 - ii. Is there less travel by scholars to view library materials?*

- iii. *Are scholars sharing their work earlier (e.g., sharing pre-prints or annotations)? For example is their work more critical and analytical and less descriptive?*
 - c. Are the outputs of humanities scholarship changing?
 - i. *Is there more work being produced about rare/obscure works?*
 - ii. *Are scholars doing things with these works that they couldn't before (e.g., changing page sequence, text mining, etc.)*
 - iii. *Is the quality of their work changing?*

Efforts also need to be made to define and understand the case of humanities scholars and scholarship. While this research deals with one particular field—Tibetan and Himalayan studies—it is a field composed of many different humanistic disciplines—religious studies, social and cultural anthropology, history, languages and literature, and philosophy. So this question of impact on the humanities must be guided by an understanding of a baseline of characteristics that define scholarship in the humanities.

Starting with a conference paper given in 1965 by John E. Burchard, an historian tasked with explaining the working style of humanists to the computer scientists at MIT, there have been periodic attempts to uncover the information seeking needs and behaviours of humanists (Stone, 1982; Talja & Maula, 2003; Watson-Boone, 1994; Weintraub, 1980). Most of these works support Burchard's original characterization of humanists as particularly dependent upon primary resources; favouring monographs over journal articles for secondary resources; working alone and preferring not to delegate their literature searching (as is often the case in the sciences); finding historical materials as relevant as contemporary ones; and using browsing and serendipitous discovery as a vital part of the research process.

Recent studies have markedly improved in understanding and describing of the research process for humanists, in particular in its relationship to libraries and technology. The view of humanists as luddites has been debunked (Wulf 1995, p. 48; Brockman et al. 2001, p. 28) and replaced with

a more sophisticated understanding of why certain technologies are used or disused within the humanities.

The danger of drawing from most of the extant literature lies in the opportunity to try and create the image of an “ideal” or “average” humanities scholar.

Practices vary hugely across the branches of the humanities and the needs of a historian will likely not be the same as those of a classicist. The needs of a medieval historian will not even be the same as those of a modern historian. These differences need to be recognized and accounted for in the production and design of information systems for humanists. For this reason, the research focus here has been narrowed to a single discipline.

1.1.2 Determining the success of digitization projects.

While working toward answering the question of impact above, the placement of this research within the domain of digitization projects necessitated some preliminary work toward contextualization. This began with the creation of a typology of digitization projects (Table 1), which was intended to uncover the essential differences between the current kinds of digitization projects. The second purpose of the typology was to elucidate some of the decisions made in establishing or managing a digitization project and link these decisions to particular outcomes. In other words, the goal was to describe the relationships between the inputs (column 1) and the intended outcomes (column 2) in order to correlate the decisions made in the creation of these projects with the relative success or failure of a project.

Success is, of course, a very loaded term. How does one determine success? Should it be an independent variable, or a comparative one? Similar to the need to put a boundary on the idea of impact, the idea of success needed to be determined and defined for the purposes of this research. The definition came about during an interview with a senior programme officer at the Mellon

Foundation.⁷ He said, “successful projects are those that align the intentions of every participant, such that everyone is getting enough out of the project to sustain the continued contribution of whatever they’re putting in” (C. Mackie, personal communication, 23 January, 2009). In other words, successful projects are those that are sustainable. Further, they are those that are sustained because the needs of the participants (in this case the creators, managers, and users) are aligned such that everyone contributes toward that sustainability. In this way, the projects looked at within the case here have been measured for success, not in a relative manner—judging the success of one against another—but independently as entities that are sustained or not.

Just as with the first research question, a series of sub-questions have been devised to guide the analysis of the data and to tie the research question to concrete outcomes.

2. What are the factors that determine the success of digitization projects that involve rare and closely guarded materials?
 - a. What are the key factors that influence use or non-use of digitization projects by scholars in Tibetan and Himalayan studies?
 - b. What are the key factors that influence the use and longevity of one particular project over another?

This question will tie together all of the gathered data and connect the research activities with the research purpose. It will explore how the decisions made in the creation of these projects (question two) affect the changing nature of humanities scholarship (question one). What are the links between how a digitization project is created and how it is used (or not used)?

1.1.3 The impact of the changing relationship between humanities scholars and primary resources on academic research libraries.

The presence of a third question is necessitated by the situating of this research firmly within the domain of academic libraries. “What is the impact of the changing relationship between

⁷ The Andrew W. Mellon Foundation is a US-based non-profit organization that makes grants in the areas of education and culture. They have been a major funder of digitization efforts in the past, both on a large scale (JSTOR and ArtSTOR being two of their most notable projects) and a small scale. For more information see their web site (<http://www.mellon.org/>).

humanities scholars and rare primary resources on libraries?” It is perhaps the most controversial of the three research questions, but also in many ways the most important. It is essential to understand that the digitization projects at the centre of this research—regardless of their administrative affiliation—are fulfilling a vital function once associated exclusively with libraries and archives. Therefore, understanding the short and long-term impacts of digitization in the humanities is inextricably linked with understanding the long-term future of the academic research library.

The relationship between humanities scholars and primary resources has up until this point been mediated by the research library. Libraries were created for two reasons, to bring researchers together with resources, and to bring them together with each other. For the first time, as primary resources move online, this role—this relationship—is under threat. With the release of JSTOR and other large journal databases access to journal materials is no longer mediated by libraries. Many academic users don’t even recognize when they are using a library resource or not.

Amazon.com and other online bookstores have made rare in-print books easier to find and to get. Rare materials—manuscripts and archival materials—have in some way become the last bastion of the research library. What happens to the academic research library if users can get access to these materials without the library? Is there still a role for the library? Is there still a need?

This is the most open-ended of the research questions addressed here and in that way is very unconventional. This research has only begun to uncover a fraction of what needs to be known about the relationship between scholars and libraries in order to sustain the needs of both in the future. Despite not being able to answer this question in its entirety, it has been deliberately left in place in this research in order to provoke response and hopefully further empirical work in this area. This question is difficult, but timely. The impact of the changes in humanities scholarship on the library must be addressed, even if no conclusive understanding can be reached.

The question will also necessitate a look at the Internet as a space for libraries. Moving quickly beyond the idea of “digital libraries” as they are now conceived, the author will instead focus on what libraries on the Internet look like. As Vint Cerf, the oft-cited “father of the Internet” has said, “the Internet evolves in response to forces acting on it” (Stefik 1996, p. ix). So in one way, the goal here is to identify the forces acting upon the Internet at the intersection of humanities scholarship, scholars, and libraries. What are the forces shaping this corner of the Internet that is increasingly supplying resources—both primary and secondary—to scholars? Can this part of the Internet act like a library? (A question for which we must first answer what we want and expect our libraries to act like.) Is there something new here? Or have these forces shaped their part of the Internet to be as familiar as walking into a reading room—complete with hidden collections, slow service, and grumpy librarians (Gilman, 2010)?

1.2 Parameters of This Research

In order to keep the research focused and concise, there are areas of peripheral interest to this work that have been deliberately excluded. For example, the future of the book, or the future of reading in an electronic environment will not be discussed. This is well covered elsewhere and is somewhat tangential to the topic. Some of the digitization projects analyzed here are clearly trying to reproduce the “bookness” of books—taking great care to simulate the act of turning pages, or the physical properties of the pages or binding. Nevertheless, books here are included in a wide array of textual materials to be considered as primary sources of research, and any discussion about the inherent properties of the book will take place within the context of a those properties’ usefulness to the research process, not to contribute to the general discourse about whether the format of the book as it is known today will survive into the future as the dominant textual medium.

Chapter 2: Academic Research in the Humanities and its Relationship to Libraries Today

In order to understand the culture and practice of the humanities, we don't need another Snow⁸ redux or even to try and debate the ebb and flow of the various disciplines on university campuses and in university budgets, but it is essential that some time be taken both to understand the nature of the disciplines as well as to contextualize the digitization projects that are the main study of this research within the humanities and the library.

To begin this contextualization, we must begin with some truths, even at the risk of over-generalizing. It is well established that monographs are the principal source for most humanities scholars (Case, 1991; Harley et al., 2010; Stone, 1982; Watson-Boone, 1994; Weintraub, 1980); or perhaps more accurately, humanities scholars rely less on journal articles and contemporary information than their colleagues in the sciences. The abundance of research about how access to journal materials has changed scholarship is therefore only a fraction of the story in the humanities. This research will close the gap by looking at the digitization of the primary sources of the humanities. The large-scale digitization of modern and contemporary books will not be covered here, but rather the focus will be on rare and difficult to access materials. These are for the most part older materials that have fallen out of copyright and into the public domain.

These materials usually fall into what most libraries refer to as "special collections." These collections do not circulate (e.g., they are confined to use in a reading room) and library patrons usually have to request special access to them. Materials are added to special collections based on their rarity, fragility or physical condition, or economic value. Particularly as access to periodicals and scholarly communications is opened up through electronic distribution, special collections are often what separate one academic library from another. Special collections libraries around the world specialise in topics for which they have a strong research and teaching component at their

⁸ C.P. Snow delivered the 1959 Rede Lecture, which he titled "The Two Cultures." His primary thesis was that a fundamental breakdown between the sciences and humanities (the two cultures of modern society) was preventing the solution to many of the world's problems.

university. Usually in conjunction with faculty members, or sometimes due to the bequeathing of an important or large collection, libraries will grow their special collections, becoming renowned in one area or another. Duke University, for example, is known for its large collection of historic sheet music (Duke University Libraries, 2010). The University of California at San Diego is known for housing the papers and sketches of Theodore Geisel, also known as Dr. Seuss (Regents of the University of California, 2010). While smaller libraries may never have the budget to build the general collections of their larger colleagues, it is increasingly through this sort of specialisation that a small or medium sized academic library can become well known in a particular discipline. And it is increasingly these special collections that are defining their libraries.

In an environment where mass digitization of books and periodicals for Web access is accelerating, and electronic journals and aggregated databases are part of the shared landscape of scholarly communication, it is their accumulated special collections that increasingly define the uniqueness and character of individual research libraries. (Association of Research Libraries, 2009, p. 9)

The confinement of special collections has also set the stage for much of how humanities scholars set about their work. The library has long been the humanist's laboratory in part because of simple practicalities—when collections are confined, there isn't a choice of workplace. Regardless of cause, the relationship between humanities scholars and academic libraries has been strong for hundreds of years. It is for that reason that at the heart of this research lays the academic research library itself, or those libraries inside and outside of academic institutions whose mission is to support research and scholarship. The focus is here in part because libraries are often the logistical centre of the digitization of rare materials, but more importantly because the job of an academic research library is to support the creation of knowledge through research (British Library, n.d.). In order to understand the relationship of digitization projects to the scholarship and knowledge-creation process, there must be a critical analysis of both the environment(s) from which such projects arise, but also of the audiences, environments, and

processes that they intend to serve. Therefore, some time must be spent unpacking the relationship between scholars of the humanities, academic research libraries, and the collections in their care.

2.1 The Past and Present of Academic Research Libraries

In the traditional journey from existing information to new knowledge in the humanities, the academic research library has long played a central role. Much of the empirical data gathered recently in and about libraries such as the Pew report “Information Searches that Solve Problems” (Estabrook, Witt, & Rainie, 2007) does not make an explicit distinction between research, public, and special libraries, yet they draw their data almost exclusively from public libraries. In contrast, this work is focused on understanding changes in the scholarship process, and not simply the process of information seeking and gathering, which is an essential distinction.

2.1.1 Audience.

Although the first “public” libraries appeared in the 4th C. BC, the moniker is somewhat misleading. These collections (several hundred volumes would have been considered enormous) were open only to “those with the proper scholarly and literary qualifications” (Krasner-Khait, 2001). The term *public* was used in this case to distinguish these libraries from their far more abundant counterparts, the private libraries. Based on their commitment to serving those engaged in scholarly pursuits, these first public libraries should be considered the antecedents of today’s academic research libraries, which adhere to similar standards and goals.

While these first public libraries were more exclusive than their name implies, today’s academic research libraries are often more open than most of the public realizes. Often thought of as being very exclusive and completely closed to the public, many academic research libraries are in fact open to anyone currently engaged in academic research or learning, regardless of institutional affiliation or status. Harvard University’s rare book library, Houghton, for example, “is open without fee to all adult researchers regardless of academic affiliation” (President and Fellows of

Harvard College, 2009a). While giving priority to members of the University, the entire set of College Libraries (of which there are eleven), have a stated mission to also serve a larger community of scholars. From their mission statement: “The Harvard College Library supports the teaching and research activities of the Faculty of Arts and Sciences and the University. Beyond this primary responsibility, the Library serves, to the extent feasible, the larger scholarly community” (President and Fellows of Harvard College, 2009b). The University of Oxford’s Bodleian Library, too, is open to anyone engaged in current academic or private research, with or without an actual academic affiliation, as long as they can be satisfied that a user is, “engaged in research work for which access to our libraries is necessary,” and “will treat library material with care” (Oxford University Library Services, 2009d). So while research libraries usually count their core users as, “the Collegiate University’s students, its staff, and researchers” (Oxford University Library Services, 2006, p.3) they frequently make accommodation for researchers from around the world.

2.1.2 Mission.

Beyond serving a common group of users, academic research libraries are united by a common purpose. Looking across a number of academic library mission statements today shows a collective commitment to providing resources and services to support academic communities. Some representative examples include, from the Oxford University Library Services (the administrative home of the Bodleian), that the library’s mission is, “[t]o provide the most effective university library service possible, in response to current and future users' needs; and to maintain and develop access to Oxford’s collections as a national and international research resource” (Oxford University Library Services, 2006, p.3); from the University of Chicago Library, “[t]he Library’s mission is to provide comprehensive resources and services in support of the research, teaching, and learning needs of the University community” (University of Chicago Library, 2009). In addition to their generalized commitment to users, these statements are

characterized by their universal, nonspecific language. They mean little, for example, without a contextualized understanding of “library services” or “resources and services.” Therefore, while the expressed mission of an academic research library may remain static over long periods of time, revised notions of “resources and services” may result in dramatic changes to the essential qualities of the academic research library.

Public libraries by contrast, tend to preference a more local community of users and to provide basic information seeking support, rather than support of scholarship or research activities. “The mission of the Pasadena Public Library, a basic municipal service, is to be an information center for the Pasadena community in order to preserve and encourage the free expression of ideas essential to an informed citizenry” (Pasadena Public Library, n.d.). In the United States, the notion of freedom to information as a basic municipal service is a common theme.

The system of public libraries in the West as we know them today are closely tied to movements for free public education which arose in the early nineteenth century, resulting in significant changes to the scope and structure of higher education. In the United Kingdom, Cardinal John Henry Newman attributes the major shift in universities away from centres for educating the elite and toward educating anyone qualified to the Victorian era, and coinciding roughly with the establishment of University College London.

If I were asked to describe as briefly and popularly as I could, what University was, I should draw my answer from its ancient designation of a Stadium Generale or “School of Universal Learning.” This description implies the assemblage of strangers from all parts in one spot; -from all parts; else, how will you find professors and students for every department of knowledge? and in one spot; else, how can there be any school at all? Accordingly, in its simple and rudimental form, it is a school of knowledge of every kind, consisting of teachers and learners from every quarter...a place for the communication and circulation of thought, by means of personal intercourse. (*Essays: English and American*, 1910, p.31)

A similar movement toward democratization of education in the United States came with the great waves of immigration in the early 1800’s. Movements for literacy and free public education for all children were paralleled by the establishment of free public libraries, the first of which

appeared in New Hampshire in 1833. These libraries allowed books to circulate to the general public for the first time on a large scale, largely replacing the subscription libraries that preceded them. By the late nineteenth century in the U.S., the establishment of a free public library was seen as both an economic and social necessity, being both a boon for local businesses and a chance for a town people to “develop a love of the best reading” (Books for the Masses, 1893). Between 1871 and 1919 Andrew Carnegie paid for the construction and establishment of over 3,000 libraries in the United States, United Kingdom, and Canada, paving the way for the public library system with which we are familiar today.

This classic division between public and academic library is bridged by a few key public libraries, which because of their age, size, and scope, tend fit more into the category of academic library than public. The British Library, the New York Public Library, the Biblioteca Alexandrina, for example, while having no formal academic affiliation are intended to serve the needs of scholars as well as the general public.⁹ Hence the term “academic research library” which is intended to create a category of libraries that support the research process, regardless of academic affiliation.

2.1.3 Methods for understanding libraries: the Parnassan and the Universal.

Beyond this unsophisticated categorization of “public” versus “academic” or “research,” there are far more interesting and useful ways of categorizing libraries. Matthew Battles, library historian and theorist, provides one such taxonomy, which proves both more compelling and more useful in illuminating the past and future purposes of libraries. He groups libraries past and present into two categories, based on their relationship to the books therein,—the Parnassan and the universal. The former he characterizes as “a model for the universe, a closely orchestrated collection of ideals” (2003, p. 9). The collecting policies in the Parnassan libraries—so called as a reference to their temple like status—can be distinguished by the words of Seneca in his *Ad Lucilium*

Epistulae Morales: “it does not matter how many books you have, but how good they are” (as

⁹ The intended audiences of all of these libraries can be found on their respective web sites the Biblioteca Alexandrina (2010), the British Library (n.d.), and the New York Public Library (2009).

cited in Battles, 2003, p. 12). Until the last two hundred years or so, (fairly recent in library history) almost all libraries fell into this category. This was partly out of necessity as books—even the printed ones once they came along—were rare and expensive. Librarians were very limited in what they could purchase and entrance to libraries was necessarily restricted to those who could prove their ability to work responsibly with these valuable, delicate objects.

The mission of the early Parnassan libraries was also distinct. Unabashedly normative, the first libraries were tied to the political and cultural agendas of ancient leaders. The famed library and museum of Alexandria, for example, was established not simply to support scholars and scholarship, but to establish control over Greek culture. Toward that end, the library did not simply collect and catalogue, its goal was to exert influence over Greek cultural heritage through the “production of definitive editions of the great works of Greek Literature, especially Homer” (Erskine 1995, p. 45). In this way the Ptolemies gained power not simply as the seat of a great library and museum, but because of what was included in that library’s collections—the definitive editions of the world’s most important works. In support of their cultural and political agendas, the job of the ancient libraries was to support the scholar in all of his needs. Libraries routinely housed and fed their users. They were not stand-alone collections of books, but great complexes of mental and physical activity, including museums, gymnasiums, and baths. The goal of the library was to support the great scholars of the day by providing them access to the most important sources of information, but also to everything else that was needed to turn that information into new knowledge, including a space for discourse and debate.

In Battles’ second type of library, the universal, the temple metaphor is stripped away and “books are not treated as precious and crystalline essences [...] they are texts, fabrics to be shredded and woven together in new combinations and patterns” (2003, p. 9). His description connotes an important separation of the text from its medium, while at the same time supporting a shift away from a library being defined by the value of its individual objects and towards an appreciation of

scale. There is an understanding in the “universal library” that the sum of the library is greater than its parts, but also a growing perception that more information is better. The universal library is born when dramatic increases in scale change the relationship of the library with its collections. Andrew Abbott (2008b) supports this view as a modern one, placing its inception in the 1920’s when, he argues, the library’s approach to and relationship with information changed completely. Libraries adopted a “scientific” stance, he argues; they “counted on indexing to save the day” and ever since “their aim has been to make of the library a universal identification, location, and access machine” (p. 10-11). This is a far cry from the stoic, Parnassan, and humanistic vision described by Battles that characterized nearly 2000 years of library history, but one that is central to the current representation of libraries. While this division is certainly a stylized one, it is important for helping to uncover the changing qualities, characteristics, and visions (although perhaps not missions) of academic research libraries.

For the majority of their history, Battles’ description of the Parnassan library overlapped neatly with contemporary conceptions of the academic research library. Harvard’s library began with a collection of just 300 volumes, donated by the university’s namesake (“New England’s First Fruits,” 1792). Thomas Bodley’s re-founding of the University of Oxford’s library was, despite Bodley’s aggressive collection development policy, for many years composed of a modest set of books (by today’s standards), chained to their shelves (Oxford University Library Services, 2009a). These were indeed *temples* of knowledge around which universities were founded.

While Bodley’s approach to collecting would revolutionize library-collecting practice,¹⁰ the scarcity of books and other textual materials still meant that until relatively recently, library collections were moderate and the objects within them precious. Change would come—not

¹⁰ “In 1610 Bodley entered into an agreement with the Stationers’ Company of London under which a copy of every book published in England and registered at Stationers’ Hall would be deposited in the new library. Although at first the agreement was honoured more in the breach than in the observance, it nevertheless pointed to the future of the library as a comprehensive and ever-expanding collection, different in both size and purpose from the libraries of the colleges” (Oxford University Library Services, 2009a).

coincidentally—in the nineteenth century at the same time Cardinal Newman was re-conceiving the very notion of University and Andrew Carnegie was revolutionizing access to information. From 1860 through the 1990s, the size of collections in large academic libraries grew at least a hundred fold,¹¹ and the lines between the academic library (which up to that point had all been Parnassan) and the universal began to blur. This rate of growth continues today, with academic libraries routinely absorbing the entire publishing outputs of their native countries through legal deposit laws and developing mandates to collect “the world’s knowledge.”¹² According to the UNESCO Institute for Statistics, the cumulative total of books (not including any other format routinely collected) in all of the libraries of institutions of tertiary education in the United Kingdom grew by at least two million volumes a year between 1996 and 1998. In 2000, the same group of libraries in the United States registered a staggering 879 million volumes (plus an additional one billion microfilms).

This dramatic increase in size of collections has resulted in an unavoidable change in a library’s relationship to its holdings (the move from Parnassan to universal). This increase portends a paradigmatic shift in collections, resources, and services, even if the stated missions of academic research libraries remain unchanged. The result is an altogether new vision of the library. The New York Public Library, for example, now sees their responsibility, “to serve as a great storehouse of knowledge at the heart of one of the world’s information centers” (New York Public Library, 2009). The idea of comprehensiveness for the first time creeps into the vision of libraries during this period, for example in the goal of the Harvard University Library to provide

¹¹ This figure comes from a synthesis of data sources. The UNESCO Institute for Statistics (n.d.) (<http://stats.uis.unesco.org>) contains data on academic research libraries around the world from the 1990s onward. The Association of Research Libraries annual surveys (2010) (<http://www.arl.org/stats/annualsurveys/arlstats/index.shtml>) extend back to 1961-62. Prior data can be found in what is known as the Gerould Statistics (Molyneux, 1998) (<http://fisher.lib.virginia.edu/libsites/gerould/>).

¹² This is the current tag line used across the British Library’s web site and promotional materials and can be found on their web site (<http://www.bl.uk/>). Although their mission and vision statements refer to a collection development policy much smaller in scope, the prominence of this commitment to “the world’s knowledge” shows a clear trend toward comprehensiveness.

“comprehensive access” (President and Fellows of Harvard College, 2009b), or in the University of Chicago Library’s mission “to provide comprehensive resources and services”¹³ (University of Chicago Library, 2009), as does the visual metaphor of library as warehouse or storehouse. Size, not selectiveness, is key in the academic research library today, and the more information the better. Perhaps more importantly, though, the information itself has displaced both the objects and the users from the very centre of the library, “(t)he central purpose of libraries is to provide a service: access to information” (Buckland 1992, p.1). Buckland’s proclamation epitomizes the new, universal model of the academic research library.

Although never made explicit or written into mission statements, these are the first unmistakable signs that the core qualities of the academic research library have shifted. Mission statements remain generally focused on collecting and providing resources and services to scholars, but the nature of those collections, resources and services has changed dramatically and continues to evolve. From supporting the formation and identity of a culture and its heritage, to serving as a storehouse, warehouse, or gateway to information, the notion of an academic research library’s purpose has changed and may be changing still.

2.2 Understanding How Humanities Scholars Use Libraries

It seems that it was not until librarians and technologists came together in the middle of the twentieth century to reinvent the library that either group really tried to understand how various disciplines interface with the library. In 1965, when the MIT libraries were facing a massive mechanization project, historian John Burchard was tasked with describing to an audience of computer scientists, the importance of the library to the humanities scholar. The goal of the conference and the experiment in computerization was to “provide a design for the evolution of a large university library into a new information transfer system...” (Overhage & Harman, 1965, p.

¹³ Despite the largess of their tagline, the British Library provides a noteworthy exception to this idea of trying to be comprehensive, “In a world so rich in information, it’s not appropriate or possible for us to hold everything. Much better for us to harness our strengths to others’ capabilities and co-ordinate joint approaches that serve the gamut of researchers’ needs” (British Library Board, 2009).

xv). Although not the first use of the metaphor,¹⁴ Burchard's paper at the conference did much to cement the image of the academic library as the laboratory for the humanist. This confrontation with change—this seminal opportunity to redesign and re-architect the university library—seemed for the first time to force deep thinking about how various groups and disciplines searched for and interacted with information and resources. Many of Burchard's observations laid the groundwork for how we still see humanists today. His words were echoed in Stone's work in the 1980's and again today in the work of Warwick (Warwick et al., 2006; Warwick et al. 2008), Bates (1996; Bates, Wilde & Siegfried, 1995) and others. Burchard's characterizations have also had an impact in how we see humanists' relationship to technology. It is here that the humanist is first painted as relatively slow moving, a scholar whom, "rarely, if ever, works under the time pressure of the contemporary scientist or engineer, real or fancied" (p.222). And so it transpires, too, that the currency of the humanists' resources is not significant in his work, "the current document, apparently unlike the document of science and engineering, is not *prima facie* of more importance than an earlier one; indeed it will often be less important" (P.223). Burchard also gives us a sense that humanities scholarship delves deeply into individual resources, spending much time with few resources rather than skimming many. "They need, I suggest, a fine opportunity for browsing and for leisurely and thoughtful reading in depth, and a selected exposure to the important current literature of their field – but very selective, since humanists perforce will not find any five years of time of maximum importance, and particularly not the present time" (p.220). He even provides an early description of the relationship between the humanist and surrogate copies of primary resources.

We may use rare books or manuscripts now and then for purposes hard to explain, but facsimile copies at original size would ordinarily be quite enough...the presentations computers can make will do for much of this; the rest has got to be in form that can be

¹⁴ The first use of this metaphor was by Christopher Columbus Langdell, then dean of the Harvard Law School in his "Harvard Celebration Speech" (*Law Quarterly Review* Volume 3, 1887) marking the 250th anniversary of the founding of Harvard University. Langdell says, "...the library is the proper workshop of professors and students alike; that it is to us all that the laboratories of the university are to the chemists and physicists..." (p. 124).

considered at leisure. The most important part has to be either in books that can be kept and frequently, even capriciously returned to, or in photocopies, black on white at a size large enough to read with no apparatus more complicated than ‘natural’ spectacles and with enough margins to permit heavy personal annotation on paper which permits annotations. Sometimes even these annotations need to be cut and pasted into an early rough draft. Most of this could possibly be computerized in a fancy enough set-up. (p. 221)

The reason for clinging to this sketch, which is now almost fifty years old, is that it has remained so true to how humanists are characterized today. In 1982 Stone’s report was released detailing the information seeking needs and habits of humanities; it was subsequently updated by Watson-Boone (1994). A long series of studies and papers has since applied the work of both to the use (Bates, 1994; Bates 1996; Bates, Wilde & Siegfried, 1993; Bates, Wilde & Sigfried, 1995; Wiberley, 1991; Wiberley & Jones, 1994; Wiberley & Jones, 2000), non-use (Lehmann & Renfro, 1991), and kinds of use of information technology for information seeking by humanities scholars. Most recently Tibbo (1994; 2003) and Warwick (2009; Warwick et al., 2006; Warwick et al., 2008) have followed this thread and are studying information seeking by users in the humanities.

2.2.1 Collaboration in the humanities.

While Burchard does make explicit humanists’ general lack and distrust of research assistants and secretaries (1965, p. 222)—an observation echoed by Bates who agreed “it would be inconceivable for a humanities scholar to assign to an assistant the task of writing up his or her latest book” (1996, p.199)—never does he speak explicitly about a lack of collaboration in the humanities or a general desire to work alone. Nonetheless, the image of the “lone scholar” has dominated the characterization of the humanist since the latter half of the twentieth century. Empirically, however, this notion has long since been debunked. The 2008 TIDSR Survey of Humanities Scholars found that a majority of respondents had collaborated with someone from inside their department (53%) in the previous five years and that collaborations outside of their department were even more prevalent (65%) (Meyer et al., 2009).

If recent data such as this illustrates a current practice in collaboration there are those also such as Willard McCarty (2005) who make a strong case that although the act of writing may be a solitary one for humanities scholars, their work environment has always been “virtually communal.”

In the humanities, scholars have tended to be physically alone when at work because their primary epistemic activity is the writing, which by nature tends to be a solitary activity. (p.12)

McCarty does not confuse the solitary nature of writing, however, with the type of intellectual isolation inferred by the idea of the “lone scholar.” He argues, “[i]f we look closely at this solitary work, we have no trouble seeing that the normal environment has always been and is virtually communal;” (p. 12) for to participate in the practice of scholarship within the bounds of academia, one has to participate in a conversation. The very act of quoting, citing, or referencing, is to enter into a community of dialogue, however asynchronous.

However far back in time one looks, scholarly correspondence attests to the communal sense of work. So do the conventions of acknowledgement, reference and bibliography; the crucial importance of audience; the centrality of the library; the physical design of the book; the meaning of publication, literally to ‘make public’; the dominant ideal of the so-called ‘plain style’, *non sibi sed omnibus*, ‘not for oneself but for all’; and of course language itself, which, as Wittgenstein argued in *Philosophical Investigations*, cannot be private. Writing only looks like a lonely act. (McCarty, 2005, p.13)

This is not a new idea, of course, as the role of “invisible colleges” in the flow of information between scholars has been discussed for many years (Garvey, 1979; Meadows, 1974). In 1996, Bates took a closer look at the invisible colleges in combination with their online searching habits to determine, for example, that knowledge gained informally through scholarly communications often pre-empts the formal search process. The net results for Bates’ study was that many of the search results retrieved by her participants in the then fairly new online searching environment were already known to them because of their prior communications with colleagues (p. 698).

2.3 The Current Threat Against Research Libraries

“It is no wonder that, when the library has been extending its scope, changing its outlook and altering its very character and functions, there should not be adequate understanding

among the public as to what has been going on.” (Ranganathan, 1931, p. 315)

This silent shift in the mission of academic research libraries, within the larger context of the movement of universities from elite to universal (epitomized by Newman above in section 2.1.3) has combined with a more recent and radical revision in modes of access to information to create an overwhelming sense of confusion about the essential function(s) of the academic library today. A fair amount of time has been spent here to understand the relationship between libraries, humanities scholars and digitization because the latter is ultimately changing the relationship of the first two. This imbroglio reveals itself in at least two ways, one literal the other theoretical. Although we now understand more than ever about how researchers interact with resources, academics often no longer understand what it is that their university library does for them. Ranganathan saw this in 1931, but it still holds true today. With more materials moving online and into electronic format, scholars do not have to set foot in their library to use materials provided by their library. University members can access electronic resources seamlessly from on-campus or from behind a VPN connection and many do not recognize when they are using library materials. Increased use of Google Scholar, which seamlessly blends the free web and the paid web, may be the largest contributor to this confusion. A 2003 survey (Kelley & Orr) of academic library users at the University of Maryland indicated that for over 50% of users, remote access to electronic resources was the most important library service. Data from a survey of library users at Oxford University in 2006 (Oxford University Library Services, 2009b) indicates that users are heavily dependent upon electronic resources, that they most often access them from on campus, but not from the library, and that use of Google Scholar is growing rapidly. By 2009, a survey of the same community at Oxford (Oxford University Library Services, 2009c) shows that 77% of respondents use Google Scholar and other free web resources such as Wikipedia at least two times a week, most frequently from college premises. If a scholar can get everything they want to complete their research on their computer, with no *apparent* help from the library,

then why do they need libraries? It is perhaps no wonder, then that there has been an increasing outcry from academics who think their libraries are useless. “Throw it in the Charles,” an anonymous scientist recently proclaimed about the collection in Harvard’s Widener Library (Shaw, May-June 2010).

This is a literal sort of misunderstanding, a failure to make explicit the relationship between the resources being used by scholars and the library as provider of those resources; but there is also present a more general confusion over the responsibility of the academic library to, and involvement in, the process of scholarship. Over the long history of research libraries, describing, indexing, and providing access to vast quantities of information—as opposed to supporting the individualized needs of scholars—has only recently become the central function. As mentioned above, this move to the goal of universal library was never made explicit. While the first failure (to explicate the link between electronic resources and libraries) is one of marketing, the second may be more systemic, and less easily remedied. When placed within the greater context of shrinking library budgets, and the continued schism between the sciences and the humanities, these misconceptions change quickly from a theoretical problem to a more literal one. At its most threatening, the lack of understanding of the role and function of academic libraries is culminating in some situations in a call for an outright abolishment of the academic library as we know it.

The divide between the humanities and social sciences (HSS) and the science, technology, and medicine (STM) communities is perhaps most strongly associated with C.P. Snow’s now (in)famous 1959 Rede lecture known as *The Two Cultures*. In it Snow decried the breakdown of communication between these two factions, which he saw as a major obstacle to solving many of the world’s problems. The divide goes back at least as far as the late nineteenth century, though, “when Andrew Carnegie congratulated the graduates of the Pierce College of Business for being ‘fully occupied in obtaining a knowledge of shorthand and typewriting’ rather than wasting time

‘upon dead languages’” (Donoghue in Fish 2009, para 8). Today Donoghue (2008) sees the era of the humanities drawing to a close altogether. Those who live the “life of the mind” (as Snow called it), he says, have been forsaken in favour of efficiency and productivity. As late as April of 2010, universities in the United Kingdom and United States are actively closing departments in the humanities. King’s College London is undergoing a very public and highly criticized restructuring of its College of Arts and Humanities whereby all faculty must reapply for their jobs. Faculty that will be rehired are those who can help move the college toward their new vision of “financially viable academic activity” (Arts & Humanities Restructuring Consultation Document, n.d.).¹⁵ Among the definite cuts were two chairs in philosophy and one in palaeography, a position unique in the UK. In the United States, the University of Iowa announced a restructuring plan that put at risk fourteen different graduate programmes, ten of which were in the social sciences or humanities (University of Iowa Office of the Provost, 2010). Snow’s lecture and Carnegie’s proclamation came during a period of immense growth and unparalleled change in modern higher education. In the United States alone, the number of colleges and universities doubled in the fifty years following World War II. Enrolments during the same period grew from 2,250,000 to 12,500,000 and annual expenditures from \$1.7 billion to over \$70 billion (Frye in Dowler, 1997). This was not simply about growth, though. This period saw a closing of Cardinal Newman’s vision of the university as “the high protecting of all knowledge and science, of fact and principle, of inquiry and discovery, of experimentation and speculation; it maps out the territory of the intellect” (1873, p. 459). Newman’s preference for “liberal knowledge” over “useful knowledge” (which he called a “deal of trash” (p. 159)) comes to a shuttering halt. The trend continued, and in 1963 in his *the Uses of the University*, Clark Kerr (2001) infamously proclaimed the days of the unified liberal arts education over. The “unified community of masters and students with a single ‘soul’ or purpose” has been transformed into the

¹⁵ For more context on the debate see “University cuts start to bite” 23 March 2010, from *The Guardian* and Anthony Grafton, “Britain: The Disgrace of Universities,” *The New York Review of Books*.

“multiversity, a city of infinite variety.” Kerr argues that this is due to the “widespread recognition that new knowledge is the most important factor in economic and social growth” (p.xii). In the multiversity there are three big forces at work, “universal access, progress through science and increasing productivity” (p.208), none of which favours an environment supportive of the humanities. Kerr saw this trend, not as a falling out of balance, but as a natural part of the evolution of universities. “All of this is said to have destroyed the “balance” among fields and it is generally concluded that something should be done about it. The balance among fields, however, has never been a static thing...It is not enough to say that the old “balance” has been destroyed. The real question is what should be the proper balance today?” (p.46).

In light of this discord, Abbott’s description of the trend of librarians in the 1920’s toward “scientific” metaphors whose “poster children for success have always been the natural sciences” (2008a, p. 11) is not coincidental. It is a clear indication of how this eternal row is playing itself out in academic research libraries. The Panassan library, which preferences quality over quantity has given way to the universal, which supports Kerr’s “three big forces.”

The problem with this trend toward the universal library is twofold. Early musings on the future of libraries in the face of increasing use of technology were dominated by the vision that the new role of the library should be as information gateway, not simply to store information, but to “make order of its abundance so that it is meaningfully accessible” (Frye in Dowler, 1997, p.4). Although by Abbott’s account academic libraries have spent at least eighty years working toward this universalist goal, they have been surpassed in a single decade by a one company. Google’s success in a single decade toward their mission to “to organize the world’s information and make it universally accessible and useful” (Google, 2009) has far surpassed the meagre advances of academic libraries in the eight previous decades. So if it really is the goal of the academic library

to become a “universal identification, location, and access machine,” failure at this point seems imminent.¹⁶

The reason for spending so much time on understanding the status quo of the humanities in academe is because of the historically inseparable link between the library and the humanities. “The library is the single most important piece of technology in the humanities,” says Robin Boast (personal communication, 6 March, 2009). In a focus on quantity over quality, indexing over scholarship, and storehouse over temple of knowledge, academic libraries have lost the ability to support the social aspects of scholarship that are so critical in the practice of the humanities. Perhaps most concisely stated by Abbott, the “crisis of abundance [has] led to loss of direction” (Abbott 2008b, p.11).

The goal here is not to identify the proverbial chicken and egg; it is not to try and determine whether this fundamental shift at the core of academic libraries has been the cause or the result of the decline in support for the humanities in the university. The goal is simply to identify the inextricable link between the two in order to contextualize the potential decline of the academic library as yet another major problem facing the humanities and the decline of the humanities as a problem facing academic libraries. What started as a rift between “the two cultures” is now culminating in rumbles from the Science, Technology, and Medicine (STM) community about the worthlessness of the library. While major research universities still characterize their libraries as the “heart” of their institutions, participants on academic library task forces around the world are wondering aloud about “what is the point of a huge book-stack full of little-used materials?” (Abbott 2008a, p. 2). A recent debate on the future of the academic library hosted at the University of Oxford highlighted this tense relationship when one of the keynote speakers, a

¹⁶ Data regarding the use of Google by academic library patrons is abundant. For statistics regarding a specific library user community, see Oxford University Library Services’ 2009 survey (Oxford University Library Services, 2009c). For a more general characterization of the information seeking habits of young scholars, see the report *Information Behaviour of the Researcher of the Future*, conducted by the Centre for Information Behaviour and the Evaluation of Research (CIBER) at UCL (Centre for Information Behaviour and the Evaluation of Research, 2008).

molecular biologist, began by relating an anecdote about a colleague who described the role of the library in his work as “a place under which he has walked for the last nine years in order to get to his office, but in which he has never been.” The presentation continued with a detailed description of how the library is failing to meet the needs of the STM community. Put simply, the loss of direction that Abbott has identified may in the short term have resulted in a mass exodus by the STM community from the academic library,¹⁷ but in the long-term it will be the death of the academic library as we have known it for two thousand years. If some thought is not put toward Kerr’s question about what the balance between scientists and humanists should be at this point in time, the death of the academic library as we have known it will accelerate what might already be an impending death for the humanities. As Unsworth argues, “if we are not fairly aggressive and organized about our role in the emerging national information infrastructure, humanities scholarship will be a footnote...” (as cited in Dowler 1997, p. 81).

Humanities scholarship may be considered in some ways the last bastion of the library. As periodical and scientific data are opened up on the Internet, access to special collections is one of the last reasons that a scholar *needs* to go to a library. With the digitization of special collections plugging along—however slowly—this relationship too is now threatened.

It is within this context that this research takes place—with a particular understanding of the imperative for corrective measures in the direction of the academic library. What happens next in academic libraries will be essential to ensuring the future of these institutions—and indeed whether they have a future.

[I]t is the underlying social and policy changes that are most profound and that will have the most lasting effect on the future of the scholarly environment. This is an opportune moment to think about what we should be building (Borgman, 2007, p. xvii).

¹⁷ The full proceedings of this debate, including video, can be found on the conference web site (JISC, 2009) (<http://www.jisc.ac.uk/events/2009/03/jiscconference09/programme/libraryofthefuture.aspx>).

2.4 Understanding Digital Technologies in Libraries

In the midst of this complex and evolving relationship between the sciences, humanities and libraries has emerged a tool that has transformed all three. The Internet has revolutionized access to information and in less than two decades since the advent of the web we already speak of a “maturing” of e-research and digital scholarship (Meyer, Madsen, & Fry, 2010). Evolving research practices across all disciplines have changed the expectations of library users. Scholars depend upon immediate, desktop access to a wide range of information in multiple formats and across diverse resources. Digital resources have proven widely successful in supporting the information needs of scholars (Lesk, 2004). Increasingly, though, scholars do not expect these resources or services to come via their libraries (ARL Joint Task Force on Library Support for E-Science, 2007; Lynch & Smith, 2001). Digital resources and technologies intersect with academic research libraries in many different functions and guises. The rest of this chapter will be dedicated to understanding those intersections in order to more accurately describe what this research is and is not about.

2.4.1 The myth of digital libraries.

The intersection of academic research libraries and humanities scholarship on the Internet is often discussed within the context of “digital libraries.” Research about use of “digital libraries” seems to have largely followed from similar studies about use of paper-based library collections (Martin, 2005). In the late 1970’s, there was a torrent of user studies and reports generated in an effort to understand user needs and today’s literature about use of academic libraries follows the same patterns, predominantly measuring utilization of journal materials in the sciences (King et al., 2003). At some point in the mid 1990’s, though, there was a shift from talking about use of library materials (print and electronic) to use of “digital libraries” (Covi and Kling, 1996), yet there is still no consensual definition of a “digital library.” Much of the scholarship in this area therefore begins with an attempt to define a “digital library” and each does so with significant

variation (Arms, 2000; Borgman, 2000; Brophy, 1999; Harter, 1997; Seadle & Greifeneder, 2007). The Digital Library Federation's (DLF) initial working definition, for example, states:

Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities (Digital Library Federation, 2006).

This definition underscores the current difficulty of centring discourse on so-called “digital libraries.” DLF's interpretation of a digital library as an organization, not a collection, tool, or product, narrows its scope significantly. Today there exists very few organizations focused in their entirety, on providing access to electronic information as described by DLF, and those that do fit this definition are publishers, not libraries.

Other attempts to define “digital library” are equally troublesome. A multidisciplinary group of scholars at a National Science Foundation workshop created the following definition, which is widely cited, but equally problematic:

1. Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching, and using information. In this sense they are an extension and enhancement of information storage and retrieval systems that manipulate digital data in any medium (text, images, sound; static or dynamic images) and exist in distributed networks. The content of digital libraries include data, metadata that describes various aspects of the data (e.g., representation, creator, owner, reproduction rights), and metadata that consist of links and relationships to other data or metadata, whether internal or external to the digital library.

2. Digital libraries are constructed—collected and organized—by [and for] a community of users, and their functional capabilities support the information needs and uses of that community. They are a component of communities in which individuals and groups interact with each other, using data, information, and knowledge resources and systems. In this sense they are an extension, enhancement, and integration of a variety of information institutions as physical places where resources are selected, collected, organized, preserved, and accessed in support of a user community. These information institutions include, among others, libraries, museums, archives, and schools, but digital libraries also serve and extend other community settings, including classrooms, offices, laboratories, homes, and public spaces. (Borgman et al. 1996)

While the DLF definition is too narrow in scope, this one is far too broad. Part one seems to make use of a more technical definition of “library” as “the objects of a person's study” (OED).

The same way you might have a computer scientist refer to a “library” of files in a directory, you

may have a scholar refer to a “library” of works. Simply putting a corpus of work into digital format, however, does not make it a “digital library”—not in the way we are trying to understand “library” here. References to distributed networks and metadata consisting of “links and relationships to other data or metadata” reflects a clear attempt to capture the increasingly complex relationship between data sources in a networked environment, but in the end, the definition is still about the data sources themselves.

As Borgman (2007) herself points out (she was also one of the authors of this definition), part two of this definition does indeed signify an early concern for understanding that digital resources should be seen as a continuation of analogue ones. Still, this represents only a part of a library, an “extension, enhancement, and integration” but not a library in and of itself. There are few cases—if any—of a library being replicated in its entirety in digital form. Few or no organizations can be said to wholly encompass the broad set of requirements laid out by these definitions, but many can be seen to be using digital technologies to extend existing collections and services. Perhaps the phrase “digital library” therefore represents an insurmountable oxymoron. “If a library is a library, it is not digital; if a library is digital, it is not a library” (Greenberg 1998, p. 106).

Using this NSF definition, “digital libraries” can be characterized as any online database, and if the former (DLF), then it is the organization dedicated to producing such databases. Yet, the body of literature that currently falls under “digital library” intersects very little with either of these.

Digital library research most commonly discusses scholars’ access to digital information through three sources, 1) electronic databases created by publishers and made accessible by annual subscriptions through libraries; 2) digitization of some of a library’s holdings or collections through various in-house projects or initiatives; and 3) the open web. Up to this point, most so-called “digital library” research has in fact been research about transformations of access to information through digital technologies. Attempts to actually define a “digital library” have failed and a disconnect remains between the literature and the objects of study.

A recent report from the CIBER research centre at University College London, on the “Google Generation” (2008) seems to be leading the way in what might be a new, more precise focus for literature about the use of digital materials in libraries. By studying use of networked resources from the perspective of users, this report avoids the standard “digital library” discourse and focuses instead on the online behaviours of “information seekers.” Where most “digital library” research fails to recognize the complex relationship between digital collections and libraries as institutions (*Check out the New Library*, 2003), the CIBER study looks critically at access to information and paves the way for a broader discussion about the role of these activities within the library.

2.4.2 Digital humanities.

Running parallel to discussions of “digital libraries” has been the burgeoning field known as “digital humanities.” It is defined by the Alliance of Digital Humanities Organizations (ADHO) as:

...a diverse and still emerging field that encompasses the practice of humanities research in and through information technology, and the exploration of how the humanities may evolve through their engagement with technology, media, and computational methods (2008).¹⁸

The growth of the digital humanities movement since 2000 has been significant. The National Endowment for the Humanities now offers grants in Digital Humanities from its newly established Office of Digital Humanities,¹⁹ and King’s College London offers post-graduate degrees in the field.²⁰ The Center for History and New Media²¹ at George Mason University is one of the most active contributors, both in terms of constructive projects and original research.

¹⁸ This definition is from the journal *Digital Humanities Quarterly*. A subsequent definition can be found on Wikipedia: “a field of study, research, teaching, and invention concerned with the intersection of computing and the disciplines of the humanities. It is methodological by nature and interdisciplinary in scope. It involves investigation, analysis, synthesis and presentation of knowledge using computational media. It studies how these media affect the disciplines in which they are used, and what these disciplines have to contribute to our knowledge of computing.”

¹⁹ For more information see the Office of Digital Humanities web site (<http://www.neh.gov/odh/>).

²⁰ The degree programmes are listed on the web site for the Centre for Computing in the Humanities (King’s College London, 2009).

²¹ The Centre for History and New Media web site (2010) (<http://chnm.gmu.edu/>) lists all of their activities.

Their bibliographic citation tool, Zotero,²² is rapidly becoming a leader in the field and illustrates their dual strategy to build as well as to study. As recently as May of 2010, a new Centre for Digital Humanities was established at University College London.²³

As the practice of scholarship within the humanities is one of the foci of this research, it is important to understand the field of digital humanities as one branch within that practice. The humanities are often cited as being “invented” during the Italian Renaissance, and closely tied with Petrarch’s reinterpretation of Cicero (European Humanities Research Centre, 2004). In European academia today, the field is defined as including “the modern and medieval languages, literatures, and cultures of Europe (including English and the Slavonic languages, and the cultures of the European diaspora)” (MHRA, n.d.). In the United States, the humanities tend to be defined more broadly as “literature, philosophy, history, languages, music, art history, the classics, religious studies” (Bhabba, 2006). This is a far more inclusive definition of humanities as a discipline, one that takes in the “sweeping arc of human learning” (Ibid). There is admittedly a huge variation in practice amongst these sub-disciplines, but the commonalities amongst them lies in the notion that “literary intellectuals” (Snow, 1998, p.4) are universally as “concerned with reshaping the means with which we interpret human realities as they are with reflecting these realities” (Bhabba 2006). Unlike in the sciences, this reshaping is often centred on contact with historical materials—rare books, manuscripts, photographs, etc.—the “raw materials” of the digitization projects that are studied here.

Jesuit priest Father Roberto Busa is largely credited with “inventing” the field now known as digital humanities. In 1959, he partnered with the IBM lab in the United States in order to undertake the monumental task of creating a word index to the entire literary corpus of St. Thomas Aquinas. Not satisfied with a simple word concordance, Busa would spend many years

²² For more information about Zotero see the web site (Center for History and New Media, 2009) (<http://www.zotero.org/>).

²³ The web site for the UCL Centre for Digital Humanities (University College London, 2010) (<http://www.ucl.ac.uk/dh/>) lists their history as well as their current activities.

with a team of software engineers creating a lemmatized version (Hockey, 2004, para. 4). Many years later the results of Busa's work would be published first in a printed volume (1974) and later a CD-ROM (1992). Busa would continue to have an influence on humanists' use of computers well into the 1990's (Hockey, 2004), but by the 1960's his idea of computerizing the creation of concordances had caught on and "humanities computing" was born. As the creation of concordances became more common, the idea of using language patterns and word frequencies to discern writing styles and recognize authorship emerged. Arguably the most famous of these early investigations was the attempt by Mosteller and Wallace (1964) to identify the author of the Federalist Papers. Around this same time (1963), Roy Wisbey founded the Centre for Literary and Linguistic Computing in Cambridge and within a decade regular, international conferences were being held on the topic of "literary and linguistic computing" (Hockey, 2004).

Despite these many decades of precedent, computers largely remained the tools of specialists and until the 1980's, when they were adopted for more widespread use (Burrows 1989; Hockey, 2004; Ledger 1989). By the early 1990's personal computers were fairly widespread and humanities scholars were for the first time able to confront the idea of writing their own software (Hockey, 2004). A 1993 report by the British Library divides the use of computers by humanists (excluding email, basic searching, and word processing) into five categories. Although nearly twenty years old, their divisions are still quite accurate:

1. the provision of general resources, such as library catalogues, dictionaries, and bibliographies;
2. the retrospective conversion of manuscript or printed sources into machine-readable form;
3. the creations of specific research tools, such as databases and image banks;
4. the use of computers to extract summary data from larger electronic resources, such as population censuses and tithe surveys;

5. and the computer-assisted investigation of hypotheses and the development and testing of models.²⁴ (British Library Research and Development Department, 1993)

The use of the phrase “digital humanities” arose well after humanists began heavy use of computing technologies and the phrase can in some ways be seen as an attempt to retrospectively assign a focus to those activities. Running parallel to this effort, though, has been a discussion of the future of humanities, or the construction of a framework for the practice of “modern humanities.” The Modern Humanities Research Association (MHRA), for example, has done significant work theorizing the current and potential futures of their scholarship practices. Founded in Cambridge, England in 1918, the organization has subsequently held two pivotal conferences to discuss the “future of modern humanities.” During the proceedings of the most recent conference in 2004, a recognition of the great potential for ICTs to change practice surfaced, but so did the realization that the web was still being used by a large number in a passive way, simply as another format for access (European Humanities Resources Center, 2004). Similar introspection is taking place in the United States, where the establishment of the Humanities Research Center at Harvard University has provided an incentive to rethink the current and future state of humanities scholarship. The centre is intended to facilitate a cross-disciplinary unification of all the disciplines included in within the broader humanities umbrella and one of their current activities has been the establishment of a digital humanities initiative.²⁵

These movements to modernize the humanities and to form a new discipline of “digital humanities” should be recognized as evolving from within academic departments, independently from “digital libraries” and indeed largely outside of the academic library itself. Digital humanities organizations, departments, and initiatives are intended to help humanists make use of computing technologies and to build tools to facilitate their work. Their agenda can perhaps best

²⁴ The primary focus of this research is the second category. The last three categories may be applicable as well, inasmuch as they may depend firstly on a digitization project. In other words, they are applicable when the tools created, or the data extracted are based on the digital reformatting of rare materials.

²⁵ See the Digital Humanities Initiative web site (<http://isites.harvard.edu/icb/icb.do?keyword=k15573>) (President and Fellows of Harvard College, 2010) for more information.

be summarized by the description provided at the Centre for Computing in the Humanities (CCH) at King's College London:

The primary objective of the CCH is to study the possibilities of computing for arts and humanities scholarship and, in collaboration with local, national and international research partners across the disciplines, to design and build applications which implement these possibilities, in particular those which produce online research publications. (King's College London, 2009)

2.4.3 Defining digitization projects.

While falling loosely within the domain of what has until this point been known as “digital libraries,” and acknowledging the work being done simultaneously in the name of “digital humanities,” the scope of the current study has been narrowed to what will be referred to as “digitization projects.” Digitization projects are defined here as projects involving the digital reformatting of materials for access and/or use on the web. While “digital library” initiatives may share a universal goal of providing access to information over the Internet, digitization projects are more often in some way also trying to satisfy the need for access to the artefact. This is frequently, though not exclusively, done through the provision of high quality digital images in combination with transcribed and marked-up text.

There are currently thousands of digitization projects available (some freely and others by subscription) on the web and some time will be spent here introducing the differences between them in order to potentially facilitate understanding of the variables that contribute to the most successful projects.

These digitization projects range in size from just a few items (The Lincoln-Douglas Debates of 1858: <http://lincoln.lib.niu.edu/lincolndouglas/index.html>) to millions of items (American Memory: <http://memory.loc.gov>). The collections may be based on the work of one person (Einstein Archives Online: <http://www.alberteinstein.info/>), a particular format or genre of publication (Bodleian Library Broadside Ballads: <http://www.bodley.ox.ac.uk/ballads/>), or a historical event (Nuremberg Trials Project: <http://nuremberg.law.harvard.edu/>). The collections

can reflect existing library collections (Parker Library on the Web: <http://parkerweb.stanford.edu>)

or be constructed from across multiple collections (Making of America:

<http://moa.umd.umich.edu/>). All of these projects represent aggregations of digitized books,

manuscripts, and photographs that could otherwise only be seen in a library's reading room.

The digitization itself is achieved through a combination of imaging and text-based technologies.

Some projects are created completely from hand-input text (The Decameron Web:

http://www.brown.edu/Departments/Italian_Studies/dweb/index.php), while many more include

various combinations of imaging and full text. The images may be created directly from the

original objects (<http://ids.lib.harvard.edu/ids/view/1441049?buttons=y> (Burkhardt, 1865)) or

scanned from existing copies, such as microfilm (<http://pds.lib.harvard.edu/pds/view/5832679>

(Gerry, 1865)). Digitization projects also involve a number of different types of objects including

printed texts, manuscripts, photographs, artworks, audio, and moving images. Objects of

digitization are as varied as the library collections from which they are drawn.

The intended audiences for library digitization ranges from the general public

(<http://www.bl.uk/onlinegallery/index.html>) to a specialized audience

(<http://hlsl5.law.harvard.edu/bracton/>). While some projects are made freely available to all users

of the web, others are only by subscription and a growing number offer something in between—

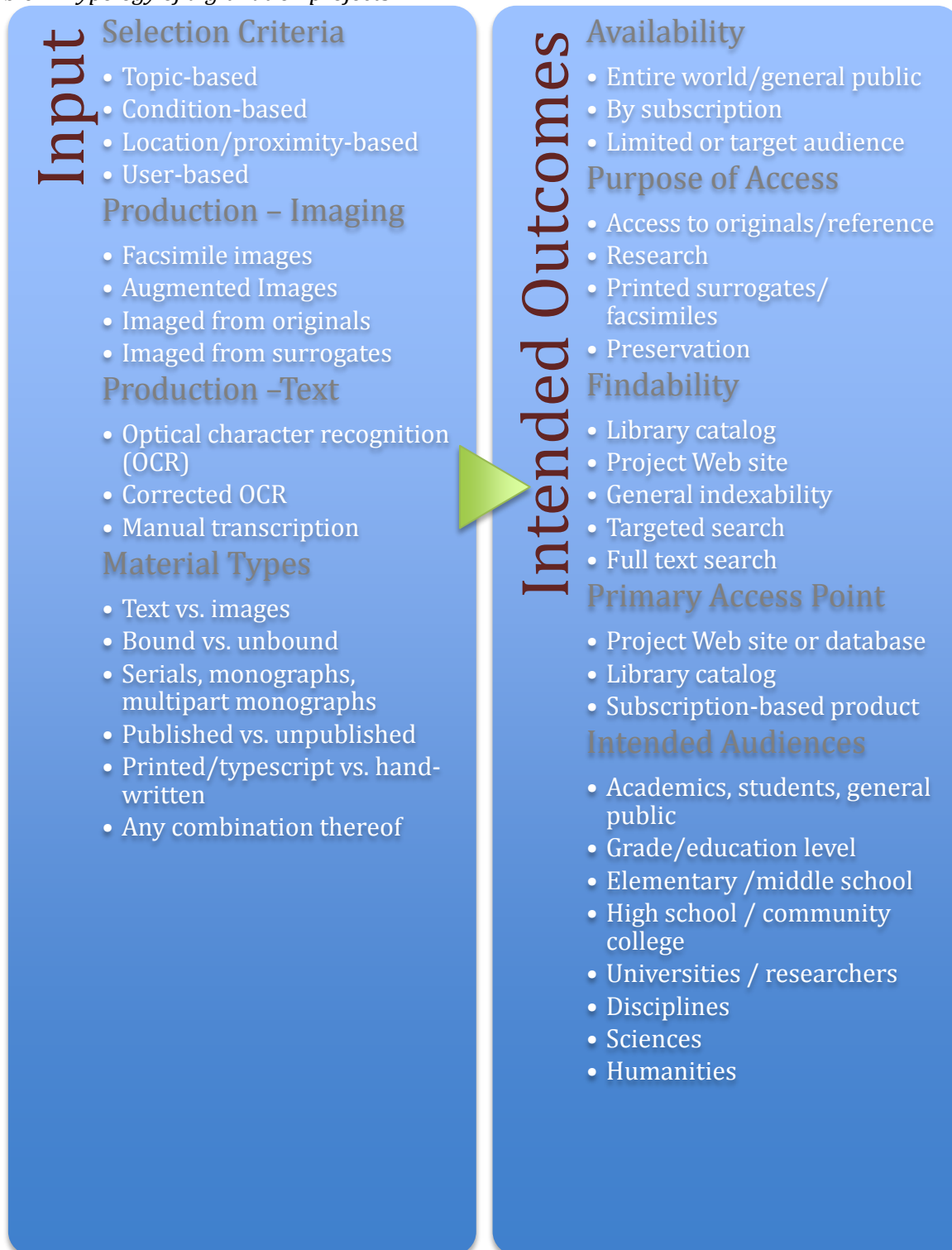
free availability to one group of users (such as institutions of higher education in the UK), but a

subscription-based policy for others.

A useful typology of digitization projects can be constructed from looking at their various project

inputs and intended outcomes (Table 1).

Table 1: Typology of digitization projects



In theory, decisions are made about the appropriate project inputs (column one, above) based on the intended outcomes (column two, above), budget, and infrastructure availabilities of each project.

As opposed to work about “digital libraries,” literature relevant to digitization projects was initially very instructive in nature, focusing on best practices and standards rather than empirical analysis. Lopatin (2006), provides a good overview of the literature from 2000 to 2005, and the Handbook for Digital Projects from the Northeast Document Conservation Center (Sitts, 2003) offers a typical example. In the past few years, though, a new series of literature has emerged that focuses on deciphering the impact of digitization projects in the humanities. The LAIRAH project from University College London (Warwick, Terras, Huntington, & Pappa, 2008; Warwick, Terras, Huntington, Pappa, & Galina, 2006; Warwick, Terras, Galina, Huntington, & Pappa, 2007) and TIDSR from the Oxford Internet Institute (Meyer, Eccles, Thelwall, & Madsen, 2009) are examples of recent projects attempting to both understand the factors for use and non-use of individual projects and to devise some techniques for producing comparable measures of impact. This research builds on the work of both of these projects and aims to explore the greater implications for humanities scholarship and for libraries of the decisions made in the production of the digitization projects studied.

Stripping away the existing discourse on digital libraries, the digitization of library collections can in one way be seen as a logical progression in a long history of library automation. Librarians have been looking for faster and more precise ways of connecting library users and library materials for hundreds of years, but it can perhaps be said that library automation entered the computer age when technology first allowed for conversion of card catalogues to online public access catalogues (OPACs). From providing access to the metadata about library materials online to providing the materials themselves online has only been a matter of waiting for the technologies to capture, describe, and provide access to them to catch up. Seen in this way,

though—as the culmination of a long chain of efforts to connect users to library materials faster and with fewer antecedents—library digitization appears to be the final step towards Abbott’s “indexing machine.” The important question to pose here though is: can the library be anything else? Can library digitization be used to make the ties between library and scholar stronger rather than weaker? Can it be used to help illustrate to many what they see as the mysteries of what the academic research library actually does today? These digitization projects are the primary instantiation of one of the libraries core services—providing access to library materials—on the web, but can they or do they in fact provide any other services as well?

In order to answer these questions, the focus of this research has been narrowed to a specific kind of digitization project—those that involve rare materials that are often closely guarded in their original format—and a specific kind of user, the humanities scholar. The purpose of concentrating here is to explore the space on the Internet created by the intersection of these actors as one of the most likely and meaningful for the future of academic libraries. If most of the changes in libraries and humanities scholarship thus far have been brought about by technology, this is an area where libraries have the potential to take up their role as user-experts and to shape the technologies to suit the needs of their users. The purpose of this research is to measure and analyze, but ultimately to empower libraries to understand their role in shaping a new architecture of knowledge for the coming century. Through the analysis of digitization projects as providing a core function of the library, this research aims to contribute to a larger discussion about the presence of libraries on the web. Can the Internet become a space for the libraries to reinvent or reinterpret themselves?

2.4.4 Why scholars use digital tools.

As a backdrop to the larger theoretical questions of defining digitization and its role in libraries is the simple question of understanding why humanities scholars use or adopt digital tools in their work. In short, humanities scholars will use a technology or tool when it fills an existing need or

in some way accelerates or simplifies a task essential to their work. In other words, scholars will adopt a technology when it does something they already want to do faster or better than they could do it without the technology. Wiberley's early studies of the habits of humanities scholars and their adoption and use of information technology do illustrate this point (Wiberley, 1991; Wiberley & Jones, 1989; Wiberley & Jones, 1994), but it is worth emphasizing here as it is often overlooked in more recent work which favours more complex analyses of searching behaviours and patterns. Bates' work (1996) touches on this in the inverse by looking closely at why her group of end-users studied in the Getty Online Searching Project had difficulty adjusting to the process of using the DIALOG search system for online research. "Overall, judging both by the scholars' comments and the character of their searching, most did not become skilled enough in searching to get maximum benefit from online searching" (para. 26). Because of the overall difficulty in learning to use the DIALOG system and in particular adjusting to the Boolean logic and syntax that enables users to make the most of their searches (para. 39), the greatest benefit from use of the DIALOG tool was to be found in locating materials "at the margins" of their discipline (para. 30), but not necessarily faster or easier for locating their core corpus.

In 2002 Deegan and Tanner expanded this idea to look at formats as well as tools. Their study of why people favoured digital formats over analogue ones concluded that it was the immediacy and ease of access that primarily drew people to digitized works. They were particularly drawn in by tools that helped improve access in some way, by allowing zooming or changing contrast etc., to improve the visibility of the image.

What users want is the resource and the information: they may be less interested in the format of that information. Format is only relevant when it impedes retrieval: if a book is available on a shelf nearby, then that would be as useful as an electronic text, but if the book is unique and is only available in physical form many thousands of miles away, then an electronic text will serve the purpose. The main goal of the...library is to find the shortest path between expression of an information need and its satisfaction, and also to provide the unexpected to the user. (p. 62-63)

Particularly because, as Brockman found, “it takes time for any researcher to develop facility with a particular tool” (2001, p. 23) any given tool must be useful in order to be used. The converse is also true. If a tool is not useful, if it does not in some way facilitate the work of the scholar (Bates, 1996) it will not be used. Novelty in and of itself is not necessarily useful. Tools must first facilitate or simplify an existing practice before creating or suggesting new ones.

We observed a wide adoption of technology by humanists in ways that are enhancing many of their traditional work practices. Their reservations regarding technology—and there are several—are specific and rooted in the inability to present technological capabilities to address research activities unique to the humanities. (Brockman et. al., 2001, p. 28)

Or, as John Willinsky, creator of the Open Journal Systems,²⁶ says of building digital tools that will be used, you can only change one thing about the way people do their work when you present users with a new tool (J. Willinsky, personal communication, November 13, 2010).

What was for many years generally reported as indifference by humanities scholars to digital tools and resources was found by several researchers to in fact be a straightforward aversion to that which is not useful. Talja & Maula (2003), for example, found that humanities researchers will adopt new technologies when these tools are found to save them time or effort. Or, as found by Brockman et al. (2001), adoption of new technologies is first in the form of an extension of existing research practices. This research extends their findings by providing a deeper understanding of why humanities scholars in one particular field—Tibetan and Himalayan studies—have largely adopted the use of digitized resources and how the digitization projects in this field have succeeded in meeting the needs of scholars. It will look closely at three factors in particular—community, innovation, and critical mass—that have had the greatest influence on the adoption and use of digitization.

²⁶ Open Journal Systems is a content management and publication system for scholarly journals. It is in use by over 5,000 journals. See their web site (<http://pkp.sfu.ca/?q=ojs>) for more information.

Chapter 3: Creating a New Theory of Libraries

Only the madman or the rare case of genius can inhabit a world of meaning all by himself. Most of us acquire our meanings from other men and require their constant support so that these meanings may continue to be believable (Berger, 1963, p. 64).

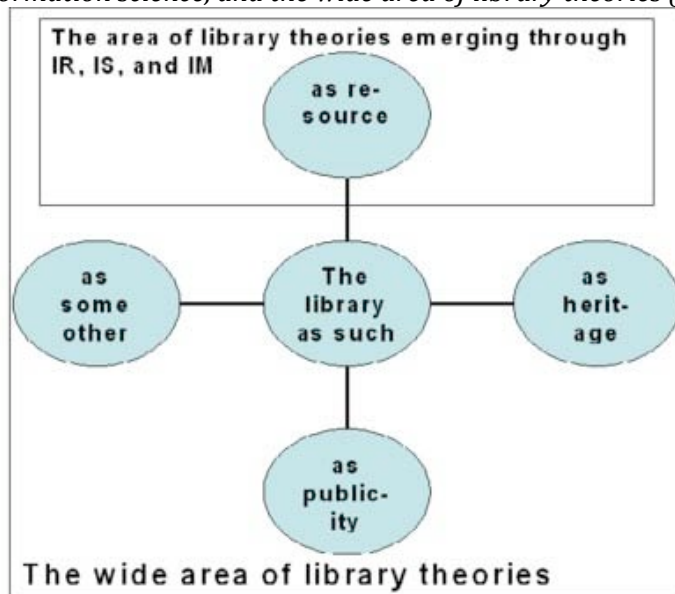
The digitization projects and activities being considered here are performing a role previously strongly associated with academic research libraries. It is therefore essential to understand that regardless of the administrative location of these digitization activities (i.e., whether they are taking place in an academic department, museum, or library), they are providing “library services.” This in turn necessitates a deeper understanding of the history and theory of library services and functions. This chapter will be used to review existing theories about libraries as well as to propose a new one. This new theory is necessitated by the radical changes that are at hand as a result of new models of access to rare library materials. This new theory will then be used to structure the findings of this research as they pertain to the future of academic libraries. In other words, if we understand digitization as essentially performing one or more of the functions of a library, and in the case presented here we have clear evidence of the success of digitization within and across a field, how can this new theory then help us to conceive a successful future for academic libraries?

3.1 Existing Library Theory

Pure “library theory” is relatively rare. The field that used to be known as library science is now dominated by theories of information retrieval, information management, and information organization, or by theories about the conservation, preservation, and storage of objects of cultural heritage. There are few theories or theorists on the other hand that look at the library holistically as an organism or organization to be considered in its entirety, let alone within the broader context of society and culture. Concerns voiced by Vesa Suominen (2007) reflect some of the problems arising from a lack of library theory. Suominen blames the current lack of library theory on what he calls “ideological and naive userism” (Suominen 2002). Centring library

services on the needs of users is not an inherently bad thing, he alleges, but it should not be at the exclusion of all other rationales. Recognizing that information retrieval (IR), information seeking (IS) and information management (IM) are not separate from, but major subfields of library and information science (LIS), Suominen argues that these areas are dominating the discourse at the expense of other library theories (Figure 1).

Figure 1: The library theories emerging through the three major subfields of library and information science, and the wide area of library theories (Suominen, 2007)



In making his point, Suominen also makes reference to the doctrine of S.R. Ranganathan, whom he says offers a “classical user orientation” (2002, para 3). In 1931, Ranganathan, a mathematician, philosopher, and librarian, authored the single most famous book of library theory, *The Five Laws of Library Science*. His five laws, 1. Books are for use; 2. Every reader his book; 3. Every book its reader; 4. Save the time of the reader; 5. A library is a growing organism, have been re-interpreted, re-written, and (mis)appropriated countless times over the last thirty years.²⁷

²⁷ See, for example, "Five new laws of librarianship" by Michael Gorman (1995); "Principles of distance education" by Sanjaya Mishra (1998); "Five laws of the software library" by Mentor Cana (2003); "Five laws of children's librarianship" by Virginia A. Walter (2004); "Five laws of web connectivity" by Lennart

On the surface, the frequent use of the term “reader” implies that the *Five Laws* might be the earliest instance of Suominen’s notion of “userism”—a view strengthened within the context of the various modern interpretations that use the laws to justify a positive interpretation of the concept. Yet, the vast majority of the attempts to update or reinterpret the *Five Laws* neglect the holistic aspects of Ranganathan’s theory and contribute to the false idea that Ranganathan is promoting the ideal of libraries and librarianship as better and faster information retrieval.

In order to understand Ranganathan’s theory of libraries, it is crucial to look beyond the text of the laws themselves and into his own interpretations and explanations of them. Ranganathan had something to say about almost every aspect of the library, from its physical space to its relationship with its community.²⁸ Any interpretation of the *Five Laws* that does not account for this broader view of libraries misses Ranganathan’s true theory of libraries—as social organisms that simultaneously shape and take part in a culture and community. This inherently social view of libraries is perhaps Ranganathan’s most important contribution to our understanding of libraries, but also the most overlooked. “In a word,” Ranganathan said, “the librarian should be ‘friend, philosopher and guide’ to every one who comes to *use* the library. It is such sympathetic *personal service* and ‘such hospitality that makes a library big, not its size.’” While Suominen

Björneborn (2004); and "Five laws of diversity/affirmative action" by Tracie D. Hall (2004). Noruzi, for example, misinterprets Suominen’s “userism” as a goal rather than warning and uses the five laws to begin the process of equating the Web and the library. This new revised version of Ranganathan’s laws gives us the grounding for librarians’ profession just as the 1931 original did:

The Web exists to help users achieve success through serving user information needs in support of the world community. Information needs are met through web pages and documents appropriate to web users. (2004, para 18).

This idea that the frequent misinterpretation of the *Five Laws* is frequently due to a lack of close or complete reading of the text can be substantiated by its rarity. While the ‘Five Laws’ are often taught in library and information science schools, the entire book is seldom required reading. Despite the laws being heavily cited, the book itself has been out of print and difficult to acquire for nearly forty years.

²⁸ On the appropriate height of library shelves he said: “no rack should be higher than what can be reached by a person of average height, while standing on the bare floor” (1931, p. 44). About the opening hours of libraries he said, “In no country where the concept, BOOKS ARE FOR USE, has taken root in the Public Mind, will any library be allowed to close until the majority of humanity go to bed and cannot use it” (p. 41). On providing appropriate reference services Ranganathan wrote: “The majority of readers do not know their requirements, and their interests take a definite shape only after seeing and handling a well-arranged collection of books” (p. 75). And on the location for a library, Ranganathan said “a library that is keen about its books being fully used will plant itself in the midst of its clientele” (p. 33).

may accuse him of the worst kind of “userism,” it is Ranganathan’s socially-based model of libraries that informs his five laws and indeed all of his work. And it is this social model of libraries that provides one of the core theoretical frameworks for the reinterpretation of the idea of “Library” *writ large* that runs throughout this research.

Matthew Battles describes himself as a writer and historian of language and nature, but in his reconstruction of the library’s past (2003), he clearly changes from historian to theorist. His look back into the distant past of libraries provides one of the most important frameworks for the creation of new way forward in academic research libraries. His significant split of libraries into the “universal” and the “Parnassan” (see section 1.2.1) illustrates a deep understanding of the most essential change in thinking about libraries since their inception. Like Ranganathan, Battles understands “library” as an institution inseparable from its broader cultural and social context. Most importantly though, he paves the way for understanding that the information-centred “universal library” represents a small fragment of the long history of libraries, facilitating the recognition of this phase as the anomaly, not the norm.

If Ranganathan provides the connection between library and community, and Battles the relationship between library, texts, and information, a third set of theories can be derived from the work of David Carr, who paves the way for understanding the need for “library” to be an inherently social space. While acknowledging the consequences of their differences, Carr works on understanding the similarities between and significance of libraries and museums as cultural institutions, his definition of which provides an important scaffolding for understanding the need for a new theory of libraries today. Carr (2003, p.xiv-xv) defines a cultural heritage institution through the presence of several characteristics, summarized here:

- A collection of things—objects, living things, knowledge, information, contexts, lessons, memories—which is open freely to users or learners (not patrons or visitors) who seek them.

- A systematic, continuous, organized knowledge structure that signifies an inherent and invisible social and intellectual context for the collection. This structure must be apparent to the user, have appreciable depth and resonance, and emphasize in its structure, information, and substance the prevalent influence of scholarship, information, and thought.
- Scholarship, information and thought based on empirical experiences and observations, accurate information, documents and records, deep and significant content, and the suggestion of multiple contexts and implications. A certainty that a culture of inquiry and not commercialism, drives the environment, inviting people to enter, to linger, and to reflect on what they see and do there, without purchase of anything other, perhaps, than the way through the door.

This definition contributes two significant components to the framing of this research. First is the delineation of “library” (by way of its categorization as a cultural heritage institution) as a combination of tangible and intangible elements. Library is collection (of the tangible or the intangible) plus organization system, plus scholarship, but it is also the intangible environment that contributes to all three. There is no library without a “culture of inquiry.” Second is the emphasis on scholarship. Carr’s definition, more than any other, is phenomenological, and everything that is done in the library (entering, lingering, reflecting) and everything the library holds (collections of objects, living things, knowledge, information, contexts, lessons, memories), when bound together by a systematic, continuous, organized knowledge structure supports *the act* of new knowledge creation also known as scholarship. The result of the resources invested in the library, therefore, is not measured in the size of the collection, or even in the number or satisfaction of users, but in their experiences. “[L]ibrary experiences must all in some part hold a tacit experience” (Carr 2003, p.xix). The final output of those experiences—the interactions of people with structured collections—is scholarship.

The theory of Ranganathan, Battles, and Carr, notable in part for their unusually holistic views of “library,” each provide a unique contribution to this research. By borrowing something from each of these frameworks—and by borrowing everything from none of them—they can be employed

critically and with a detachment that allows the research and the researcher to move past and synthesize from each of them. They are all essential in helping build a broader understanding of the purpose, role, and possibilities of the library.

3.2 The Problem with Information

Information about many things does not teach understanding. (Heraclitus (B40), as quoted in Nussbaum, 2001)

If each of these theories of library can help illuminate in some way that the major movement in academic research libraries has been towards an information-centred approach, it still remains to determine how this is a problem. Towards that goal, this research is intended to be the beginning of a deconstructive phase of libraries and librarianship. Library science is in the midst of what Berger and Luckmann (1967, p. 21) have called a “tension of consciousness,” a (sometimes shocking) point of awareness of the simultaneous existence of multiple realities. The realities in this case are most succinctly defined by Battles’ two different kinds of libraries—the Parnassan and the universal—between which academic research libraries now find themselves. The tension itself has been brought about by the inception, adoption, and proliferation of the Internet as the predominating system of for access to and distribution of information; for the Internet has for the first time made that latter reality, of a truly universal library, possible.

This is a movement from libraries as small, focused institutions, towards Abbott’s description of the “universal identification, location, and access machine” (2008a, p. 11). Although characterized in part by the dramatic increases in size of collections, the problem, though, is not as simple as a “crisis of abundance” (Ibid.). While the rise of the Internet has made it possible to finally fulfil the idea of “universal library,” the rise and success of Google has brought an awareness that although they have been working at it for much longer, libraries have in fact failed to created the “universal identification, location, and access machine” of their goals.

So rather than a leap from one domain to another, this has been a century and a half long transition in which libraries have been trying to be fulfil two realities, trying to be both Parnassan and universal. In one reality, libraries are keepers of our most rare and precious cultural objects. In the other, they are the gateways to all of the world's information.

From a Kuhnian perspective, the introduction of the Internet can be thought of as accelerating the paradigm shift that began with the nineteenth century movements for universal education, and the focus on building, organizing, and classifying information. It is the equivalent in some way to the introduction of Gallileo's theories of motion into Copernicus' proposed cosmology (to use Kuhn's example). The speed with which the Internet has changed the human relationship to information has allowed the idea of a universal library to become a literal reality—providing the opportunity to become conscious at last that this is the direction libraries have been moving for one hundred and fifty years. Without the Internet, libraries would only be moving toward the universal paradigm as fast as they could incorporate physical objects, but quite possibly not fast enough to arouse suspicion. This sudden shock to the system—this consciousness—forces academic research libraries into a precarious situation, but also provides the opportunity to actually participate in the exploration and creation of the next paradigm.

As the presence of a tension implies, though, such participation will require an act of deconstruction. The act can be methodical or violent. This is what Badiou (2006, xii) calls “an event,” or the rupture of a truth from the order that supports it. So this research is proposed as a conscious deconstruction of library science and library theory in order that the pieces might be reconstructed thoughtfully and methodically.

The primary obstacle to this deconstruction is the vehemence with which contemporary culture clings to this modern notion of library as information space. However recent in the history of the institution, the idealization of storehouses of information and efforts to create the enormous indexing machine dominate the descriptive terrain of libraries. Most recently, effects of this

rhetoric can be seen in the dramatic decline in the number of departments teaching library science or even library and information science in favour of information science or information studies. In a recent survey of fifty three degree-granting programmes in North American that have been accredited by the American Library Association,²⁹ only one has maintained the title “Library Science;” thirty have changed to “library and information science;” four put information first, but retain library, “information and library science;” and seventeen have dropped the library all together and are simply schools of “information science” or “information studies.” Similar trends can be seen in the UK, where most recently the programme at the University College London has changed from the department of “library, archive & information studies” to the a department of “information studies.”³⁰ This tendency is indicative of a threat to the very notion and practice of librarianship. Schools produce “information scientists” now, not “librarians.” If the library is removed from the profession, who will be left to understand and to shape the future of the library?

Beyond understanding the logistical difficulties of straddling two realities, there still lies the task of illustrating the problem of moving towards a model that puts information at the centre of library. This is well summarized by Heraclitus’ simple statement that “Information about many things does not teach understanding” (Heraclitus, B40 in Nussbaum, 2001), an idea which also makes its way into contemporary discussions about the fate of learning, teaching, and universities in the digital age.

Lyotard argued in *the Postmodern Condition* (1984) that the death of the Professor as we know it was imminent. The computerization of information, in his opinion, “enables one to prove more, and hence better to legitimate one’s activity” (Nuyen 1993, p.31) and it is legitimization that is

²⁹ This data is from the list provided by the American Library Association. For more information see the Directory of Accredited Programs on the ALA web site (<http://www.ala.org/ala/educationcareers/education/accreditedprograms/directory/list/index.cfm>)

³⁰ For more information see the UCL Department of Information Studies web site (<http://www.infostudies.ucl.ac.uk/>)

the goal of any scholarly endeavour. With the rise of the computer, Lyotard concluded, the professor and the university as tools for contextualizing information become obsolete. Students need only be taught, “how to use terminals ... where should the question be addressed, in other words, what is the relevant memory bank for what needs to be known? How should the question be formulated to avoid misunderstanding?” (Lyotard 1984, p. 50-51). In this vision, the universal library—the indexing machine—is the ideal tool, as it maximizes access to the ability to legitimate one’s work. Striking parallels arise between his claim that in this new vision, “universities and the institutions of higher learning are called upon to create skills and no longer ideals” (Lyotard 1984, p. 48), and Battles description of the Parnassan library “as a closely orchestrated collection of ideals” (2003, p. 9).

Lyotard’s critics, on the other hand, argue that there is still a need for a grand narrative and hence still a role for professor and university beyond the provision of information.

In the context of education, what students need to know is *why* a certain move, a statement is legitimate within some field of knowledge. This is a problem of *understanding*....Each move, each statement has to be placed in a context for it to be understood. It is here that the Professor is required, because a computer cannot perform this task. (Nuyen 1992, p. 35)

For an institution like the library—so intimately tied to humanistic endeavours—Nuyen’s argument appears far more compelling than Lyotard’s, but it is important not to base such judgement on a simple desire for job security or on a romanticized notion of learning. Yet, Lyotard himself seems to de-legitimize his own argument and support Nuyen’s by interpreting Hegel’s *Spirit* and Plato’s *Forms* as an argument for humanity: “[T]he advancement of ‘humanity’ is the only fundamental value, and something is knowledge only insofar as it contributes to this value” (Nuyen 1992, p.29). The primary problem with Lyotard’s model of university and with the “universal” library is the removal of humanity from the equation.

Michael Gorman, former president of the American Library Association, has been criticized as a neo-luddite because he can often be viewed as proselytizing on the role of libraries in turning information into knowledge. In his criticism of the Google Books project, he wrote:

The nub of the matter lies in the distinction between information (data, facts, images, quotes and brief texts that can be used out of context) and recorded knowledge (the cumulative exposition found in scholarly and literary texts and in popular nonfiction). When it comes to information, a snippet from Page 142 might be useful. When it comes to recorded knowledge, a snippet from Page 142 must be understood in the light of pages 1 through 141 or the text was not worth writing and publishing in the first place. (2004, para. 6)

Gorman, like Nuyen, stresses the importance of context in creating new knowledge. This context can be supplied by putting a snippet of information back into the context of the greater work, but one of the most important roles of the academic research library is to put a single work within the context of so many others.

3.3 A New Theory of Libraries

The point of this elaborate discussion of library theory has been firstly to underscore that the current vision of “library” as an information-centric, indexing and access machine, is a recent one, and secondly to argue that this vision of “library” is failing the institution itself (and thereby failing the humanities.) So if this is the wrong direction, then what is the right one? What should be at the centre of the library? These are questions ultimately beyond the scope of this thesis, but are used here to frame and direct the research. Ultimately these questions will be used to analyze whether digitization projects are contributing to an information-centric view of libraries or a scholar-centric one.

Ironically, Suominen’s argument about “userism” is correct in its characterization of a misplacement of understanding of “library,” but his naming is unfortunate. The problem comes not from focusing on users, per se, but from putting information at the centre of library services. The failure has not come from focusing on the needs of the user to the exclusion of all else, but in trying to meet all of these user needs through the three dominant information-based paradigms: IR, IM, and IS. The move from Parnassan to universal signifies a shift not just from small to large, from quality to quantity, but from supporting the needs of scholars to supporting the needs of the information itself.

The user must be put back in the centre of the academic research library again, but the users' needs must be considered within the broader context of the process of scholarship. In focusing on information, academic research libraries have been trying to address what users want, not what they need. As Ranganathan stated, "[t]he majority of readers do not know their requirements," (1931, p.302) and it has long been the role of library and librarian to help them understand them.³¹

The goal of any new theory of library must of course, accommodate the increasing needs in research and scholarship for large quantities of information, but should not preface quantity of information over all else. As important as the information itself, is providing and supporting an environment that allows for the transformation of that information into new knowledge.

What has been forgotten in the information-centric model, for example, is that libraries were, and should be again, inherently social places. That these are spaces not just for getting access to resources, but to people—librarians, archivists, other scholars—with whom discourse can be entered about the resources therein. Lyotard's own argument supports this—it is the advancement of humanity that is the only fundamental human value.

An academic research library should be seen as a collection of services that support the creation of new knowledge. Seen from this perspective, the library is not defined by its walls, or by its collections, but by those very services. The goal of a library is not then, to provide access to information, it is to provide a space, whether literal or virtual, for the support of all aspects of the scholarship process, and information provision is just one of the steps along the way. The information commons, gateway, or storehouse is therefore not the fate of the academic research library, it should be one of the services offered therein.

In order to maintain the library's centrality to the educational institution, when much of the library's resources can be used electronically, academic libraries must position themselves

³¹ The danger here, of course, is in taking a lofty "we know your needs better than you" approach. There needs to be a give and take in this process, which will be described in later chapters.

not as spaces for materials, but as spaces for people (Pomerantz & Marchionini, 2006, p.525).

This new model provides the basis for the analysis of the digitization activities at the heart of this research. The relationship of digitization in the field of Tibetan and Himalayan studies to this model will be scrutinized within the context of an assessment of the impact of digitization on the field.

3.4 Theories of Technology and Society

Having determined that a holistic approach to library theory is the most important for helping to situate this work within the broader understanding of the future of libraries, it is still important to have a good knowledge of ICT theory. For while the library is the organization providing the context, the immediate object of study is very much at the intersection of technology and man. Therefore it would be naïve to think that this research could be accomplished without reference to or the aid of the major theoretical frameworks that currently dominate the study of Information and Communications Technologies (ICTs).

As we analyze the changing façade of libraries and the evolving work practices of humanists, the longstanding debate between technological determinism and the social shaping of technology comes readily to mind. It would be easy to see the current relationship between libraries, humanities scholars, and the Internet as strongly determined by available technologies—that is, that the current state of libraries is a result of the popularity of Google, JSTOR, and other major search and content tools. Fischer's work on telephones (1992) would serve as a useful model to support such an interpretation. The next logical step along such a path might be to see the strongly normative stance of this research—the call to empower libraries to create a dynamic space in the Internet—as a candid attempt to frame this as the social construction of technology (SCOT) (Bijker, Hughes, & Pinch, 1987).

The emphasis here, though, is not on the adoption of any single framework for the analysis of ICTs, but on becoming conscious of the act of framing itself. A number of theories will therefore be used—like tools in a toolbox—all within a larger meta-framework of building towards this consciousness. Thus the application of ICT theory is most helpful as a tool for evaluation of the cases at hand, but not necessarily for situating the current and future state of the library.

Beyond SCOT and Technological Determinism, Actor Network Theory (ANT) (Callon, Law, & Rip, 1986; Latour, 2005; Ciborra et al., 2001) can help describe and contextualize this research within the long-standing relationships between scholars and primary sources. Activity theory (Leont'ev, 1978; Wertsch, 1981) is also useful as it allows the unit of analysis to be the activity itself (Nardi 1995) and will allow for a deeper understanding of the precise point at which the involved actors (scholars, library materials, the Internet) intersect. Even Consumer Choice Theory (Lipsey & Chrystal, 2007) could be of use if we re-invent the academic library as capitalistic marketplace. How does the price change (decrease) that comes about from the digitization of rare materials affect the indifference curve? And how should this inform the social and policy changes? None of these interpretations would be wrong, but to simply place this research within a single theoretical context would be both uninteresting and un-useful to the cause of understanding academic research libraries.

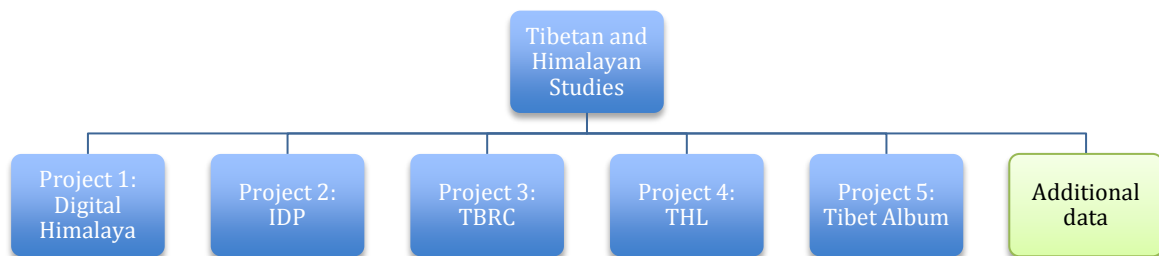
This larger meta-framework of awareness and perception is present in the work of Durkheim (1952), Weber (1976), and Heidegger (1967), but is most directly relevant here in the work of Peter Berger (1963). Berger re-conceptualizes the social sciences as a modern form of critical thought. He envisions it as a discipline that, while owing much to scientific methods, is firmly grounded in history and philosophy. The social sciences, to Berger, are a new form of consciousness. It is precisely with that understanding that this research moves forward—recognizing the usefulness of a number of theories for describing, understanding, and explicating the findings, but always combining and appropriating them by whatever means will accomplish

the greatest perception of the situation. “We have the possibility of stopping in our movements, looking up and perceiving the machinery by which we have moved up. In this act lies the first step toward freedom” (Berger, 1963, p. 176).

Chapter 4: Methods

By selecting a particular field/discipline as the unit of analysis, or case, the activity of digitization can be more effectively studied as a part of a social and technical network of activities and outputs conducted by a specific group of people. It allows the researcher to focus not just on the outcome of a set of specific “digitization projects” but to more broadly understand the activity of digitization within the context of a broadly humanistic discipline. Towards this end, the case selected for this research includes scholars, librarian, monks, and laypeople that create, maintain, and use digitization projects of Tibetan and Himalayan studies. Within this large case, five specific projects were selected as embedded cases, but data was collected from projects and sites outside of these embedded cases as well. The embedded cases (or sub-cases) have been selected in order to provide points in the research into which to ensure a depth of research and analysis. Without these, it would have been too easy to gather information broadly about a lot of projects without gaining any considerable understanding about any one. Additional data, gathered from outside the embedded cases is included to maximize breadth.

Figure 2: Relationship between the case, embedded cases, and additional data.



The five embedded cases were selected to cover a wide range of project inputs and outputs (see Table 1). A brief description of each is provided below.

Table 2: The five embedded cases.

Project Name and URL	Description
Digital Himalaya http://www.digitalhimalaya.com	Self described as “A project to develop digital collection, storage and distribution strategies for multimedia anthropological information from the Himalayan region,” Digital Himalaya contains a mix of journals, moving images, and still photography. Their most well known collection is the films of Christoph von Fürer-Haimendorf. The project is housed at the University of Cambridge.
International Dunhuang Project (IDP) http://idp.bl.uk/	Self described as, “a ground-breaking international collaboration to make information and images of all manuscripts, paintings, textiles and artefacts from Dunhuang and archaeological sites of the Eastern Silk Road freely available on the Internet and to encourage their use through educational and research programmes.” The bulk of IDPs collections at this point are textual. They are housed at the British Library.
Tibetan Buddhist Resource Center (TBRC) http://tbrc.org/	TBRC is the largest of the text-based collections studied here, with over 8000 volumes. From their web site: “Using the latest technological solutions, and a dedicated team of scholars, engineers, librarians, and technicians, TBRC aims to make the extraordinary literature of the Tibetan people available to all.”
Tibetan and Himalayan Library (THL) http://www.thlib.org/	THL began as the Tibetan and Himalayan Digital Library (THDL)—an initiative to provide information resources by and about Tibetans. After a reorganization and a name change, the new mission of THL is described as: “The Tibetan and Himalayan Library (THL) is a publisher of web sites, information services, and networking facilities relating to the Tibetan plateau and southern Himalayan regions.” They are housed at the University of Virginia.
Tibet Album http://tibet.prm.ox.ac.uk/	The Tibet Album contains over 6,000 digitized photographs from the collection of the British Museum and the Pitt Rivers Museum. They describe their project: “The Tibet Album presents more than 6000 photographs spanning 30 years of Tibet's history. These extraordinary photographs are a unique record of people long gone and places changed beyond all recognition. They also document the ways that British visitors encountered Tibet and Tibetans.” The Tibet Album is housed at the Pitt Rivers Museum at the University of Oxford.

Within the case, a mixed methods approach has been used to gather data. The benefits of a multiple method approach is well documented (Stake, 1995) and has been selected here to

strengthen the understanding of the relationships between the actors, inputs, and the outputs as well as to begin to create a valid model for success. Mixed-method case study research is widely accepted in this context as a successful tool for investigating “a contemporary phenomenon in a real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used” (Yin, 2003, p. 23). This is a particularly apt description of the role of digitization in Tibetan and Himalayan studies, where the boundary between phenomenon and context is indeed very indistinct.

This research is not just a matter for the social sciences, though. Libraries have been engaged in studying and measuring the use of books and manuscripts (online and off) for many years and it is important to also understand the influence of those methods on this research. For many years, libraries have relied on the feedback of their patrons combined with basic statistics gathered at reference or circulation desks to quantify the relative success or failure of their services. The last several decades, though, have seen an increase in reliance on quantitative statistics to justify operating expenses and determine budgets. Libraries now gather statistics in almost excruciating detail from the number of linear feet of archival materials to complete counts of monographs, serials, compact disks, DVDs, films, and more.³² These statistics have been used to measure the growth of library collections, the number of patrons and even to make cross-institution comparisons. Gate counts, or the number of people who physically visit a library in any given period, are often used to justify library budgets, staffing numbers and opening hours. As one report points out, though, while use of all of these statistics is on the rise, the quality of statistics is not:

Settling for ‘good-enough’ data seems to be the mantra of new measures initiatives and conferences on creating a “culture of assessment,” libraries have apparently been settling for good-enough data since the inception of their data gathering.” (Covey, 2002, p. 80)

³² Starting at the beginning of the 20th Century the Association of Research Libraries has been gathering and comparing statistics of its member libraries. For more information on this program see the ARL Stats web site (<http://www.arl.org/stats/annualsurveys/arlstats/>).

With the rise of electronic resources in libraries, quantitative measurement of library services becomes even more problematic. Libraries have longed to figure out a way to count visitors to their web sites as “virtual patrons,” but no standardized measure exists. While all web transaction analysis software has a value for “visits” and “visitors,” each product defines these in a different way and each library weighs these virtual visitors differently in their “gate counts.” The seemingly simple idea of being able to count the number of hits on your web page has been muddled by issues of programming styles and software selection and libraries are still struggling with a means of resolving these issues.

Nonetheless, the use of such statistics is on the rise perhaps because there is a strong sense that visits to a library’s web page *should* somehow be reflected in their annual statistics, particularly if a user can have his or her needs served without entering the library. Yet standardized methods for recognizing service to virtual users remain elusive. The COUNTER project³³ has made some progress toward consistency, but it is still only in use for commercially available electronic resources, not in those resources built “in-house” (as are the focus of the research here).

For all of these reasons, quantitative data alone is not a sufficient measure of the impact of a web site or in particular of the site’s success or failure. As the aim here is not simply to judge which of the cases represent successes or failures, but to understand the qualities that have made them so, it is particularly important to broaden the scope of data to include qualitative measures. As Strauss and Corbin have said, “the qualitative should direct the quantitative and the quantitative feedback into the qualitative in a circular, but at the same time evolving, process with each method contributing to the theory in ways that only each can.” (Strauss & Corbin, 1998, p. 34). Only then can the researcher begin to grasp not just which projects or web sites are successful, but why.

³³ For more information on COUNTER: Counting Online Usage Networked Electronic Resources see their web site (<http://www.projectcounter.org/>).

The combination of qualitative and quantitative methods used here for data gathering puts this work at the centre of a small but growing number of research initiatives that are using many techniques to try and measure the impact of digital resource use in the arts and humanities. The last few years have seen a rise in this sort of mixed-methods research aiming to move beyond the simple electronic gate counts and toward a true measure of impact of particular electronic resources and digital collections. The goal of the LAIRAH: Log analysis of Internet Resources in the Arts and Humanities project, for example, was to uncover the “characteristics of a project that might predispose it for sustained use” (Warwick et al., 2008, p. 86). The referral only to log analysis in the title belies its inclusion of several qualitative methods, including extensive interviews with project staff and a workshop, but the LAIRAH project also heralds what seems to be the beginning of several new trends in impact-analysis of web resources. In addition to its mixed-method approach, LARIAH includes in their final report a set of recommendations and best practice guides. One of their outcomes is the LAIRAH checklist (Warwick et al., 2007) (<http://www.ucl.ac.uk/infostudies/research/circa/lairah/features/>), a “very simple guide to the key features of a successful digital humanities project.” This decidedly normative approach is a growing trend in these kinds of research projects. The Toolkit for the Impact of Digitised Scholarly Resources (TIDSR) provides similar advice on best practice for project managers and funding bodies. Initially intended by the project’s funder, the Joint Information System’s Council (JISC), to be a straightforward assessment of the impact of several of JISC’s first round digitization projects, the output of TIDSR included a toolkit intended to “give a variety of people interested in understanding ways of measuring the impacts that their online scholarly resources are having” (Meyer et al., 2009). This research continues in the tradition of these predecessors, merging methods in order to understand impact on a holistic level and moving beyond pure analysis and toward using this analysis to affect a replicable model for sustainable digital collections.

4.1 Preliminary Work

An initial framework for the methods of data gathering and analysis used in this research was created in the spring of 2008. This foundational work was in turn based on techniques developed from the researcher's experience managing a large-scale digitization program between 2002 and 2007.³⁴ In these five years, the researcher had the opportunity to design and engage methods for deep web log analysis, inlink and referrer analysis, interviews, focus groups and surveys. Those initial endeavours into impact analysis were pivotal in the formation and design of this research. Building on that knowledge, and with funding from the Web Science Research Initiative,³⁵ a pilot study was conducted in the summer of 2008 on a case involving a topic unrelated to those in the main area of study. Using the Nuremberg Trials Project at the Harvard Law School Library (<http://nuremberg.law.harvard.edu>) as this first test case, interviews, on-site observation, deep log analysis, and bibliometrics were all tested as relevant techniques. This pilot study involved working closely with a number of the actors in the life of a digitization project in the Harvard libraries—from creation to maintenance, discovery, and use. The results of this study were then analysed and used to assess the validity of the case design and revise it as necessary. No data from this pilot project is included here, but the process was pivotal in helping to uncover the relative efficiency of the methods selected.

These methods were further refined in a series of research projects spanning the autumn of 2008 to the summer of 2009. The aforementioned Toolkit for the Impact of Digitised Scholarly Resources (TIDSR) (<http://microsites.oii.ox.ac.uk/tidsr/>) funded by JISC, the Joint Information Systems Committee was particularly important to the selection and distillation of these methods. Interviews and on-site observations, for example, were confirmed as pivotal to the understanding

³⁴ From 2002 to 2007, the researcher was manager of Harvard University's Open Collections Program. During this time, the researcher designed and oversaw a large-scale "outreach and evaluation plan" that was intended to provide an honest assessment of the use and usability of the programme's online collections.

³⁵ The Web Science Research Initiative has now evolved into the Web Science Trust. For more information see their web site (<http://www.webscience.org>).

of the success or failure of a project. In both the pilot case study and the TIDSR, on the other hand, several methods of gathering bibliometric data (that is, data about the number of citations of a given web site) were found to be inefficient given the amount of time these activities consumed. The data from the TIDSR project (in particular from the survey) is used throughout this research to provide comparative data. The significant overlap in methods was intentional, as it allows for some comparison of data gathered from a specific discipline—Tibetan and Himalayan studies—with the broader humanities.

4.2 Special Problems in Measuring Impact

Bibliometric methods, including citation analysis, have traditionally been used to assess the relative significance of publications. Citation indexes such as the Web of Knowledge (<http://www.isiknowledge.com/>) or the Science Citation Index (http://thomsonreuters.com/products_services/science/science_products/a-z/science_citation_index) now generate these statistics automatically and Google Scholar is increasingly being used in this capacity. There is still ongoing discussion about whether citation analysis is a valid measure of research impact,³⁶ but the method can at the very least be used to illustrate the development of networks between scholars and the relationships between areas of study. Citation analysis works for print publications because there are agreed upon standards for citation. The lack of standardized citation methods and formats for digital resources (web sites, datasets, digitized books or collections) contributes to an already well embedded practice of not citing digital resources, making citation analysis for electronic publications nearly impossible and unreliable.

The survey conducted as part of the TIDSR project, for example, found that scholars who published works based on a digital collection or a work in a digital collection rarely included a

³⁶ See the TIDSR web page about bibliometrics (Meyer, 2009) on the TIDSR web site for a summary of this discussion and a link to a bibliography (<http://microsites.oii.ox.ac.uk/tidsr/kb/53/bibliometrics-enhancing-ability-track-projects-scholarly-impacts>).

URL for either in their citation. Fewer than half of these respondents provided the URL for the electronic object they cited and a majority cited the analogue work, even if their only interaction with it was digital (Meyer et al., 2009 p. 61). This was also the finding in an earlier qualitative study of humanities scholars (Rimmer et al., 2008).

As mentioned above, part of the difficulty in applying bibliometric techniques and methods to online resources stems from the lack of clear guidance about how to cite an electronic resource. Some manuals encourage the citation of the analogue or original item—even if it was never consulted in person—and recommendations for including the URL are mixed. Web site and digital collections that provide a standardized suggestion for users in how to cite materials from their collection can significantly increase the number of citations they receive, but such recommendations are still in the minority (Meyer et al., 2009).

There is another reason for the difficulty in using citation analysis on electronic resources and it is social rather than technical or procedural. Scholars—in particular scholars in several branches of the humanities—still have a strong bias against citing electronic resources. One of the young scholars interviewed in the course of this research admitted to removing URLs from the citations of a publication he was editing. If contributors had cited an analogue work, but included a URL, he deleted it. When asked why, he replied, “I don’t want them sully my publication.” This scholar also said that he had not thought in depth about the question of citing electronic resources prior to this inquiry; it seemed that his actions came from long-standing or deep-seated habit or instinct more than from a well thought out bias.

Given these inherent difficulties with bibliometric methods and citation analysis, a combination of interviews, on-site observation, document analysis, and several webometric techniques have been employed to understand the impact of the embedded cases within both the context of the larger case and of the research questions. The remainder of this chapter will be used to explain and discuss in detail the methods that were used in this research for data gathering and analysis.

4.3 Qualitative Methods

4.3.1 Interviews.

For this study, 55 semi-structured interviews were conducted over an eighteen-month period. The interviewees can be roughly divided into three groups based on their relationship to the case: 1) “project personnel,” which includes project managers, directors, and staff involved in the digitization of rare materials from the Tibetan and Himalayan region; 2) “scholars,” which incorporates those interview subjects who were identified by their field of study as likely users of digital resources;³⁷ and 3) “experts” in digitization projects or digital scholarship. This latter group includes academics from a variety of humanistic disciplines as well as librarians, museum staff, and programme managers for funding bodies. These labels are used here for convenience and there is a need to recognise a great deal of overlap between the categories. For example, ten out of the twenty two “project personnel” interviewed are also “scholars” in their own right, holding advanced degrees in an area of Tibetan and Himalayan studies. Many of the “scholars” could also easily fall into the category of “experts” as their work has long been at the intersection of the two.

The key “project personnel” were identified firstly through the author’s prior knowledge of digitization workflows and management. Efforts were made to interview the project director and/or manager for each embedded case, as well as at least one person from each of the major categories of staff (e.g. cataloguers, imaging staff, web development personnel, etc.). The difficulties of this were greatest in the case of grant-funded projects where the funding had ended and the staff disbanded.

The work of identifying “scholars” began by asking the interviewed “project personnel” whom they recommend the author ask for an interview. For this reason, the sampling of “scholars” should be considered primarily one of convenience, but efforts were also made to expand the

³⁷ The groups of scholars therefore represents users and non-users of the case projects in relevant fields including Tibetan and Himalayan studies, Religious Studies, Buddhist Studies, Social and Cultural Anthropology, and Linguistics.

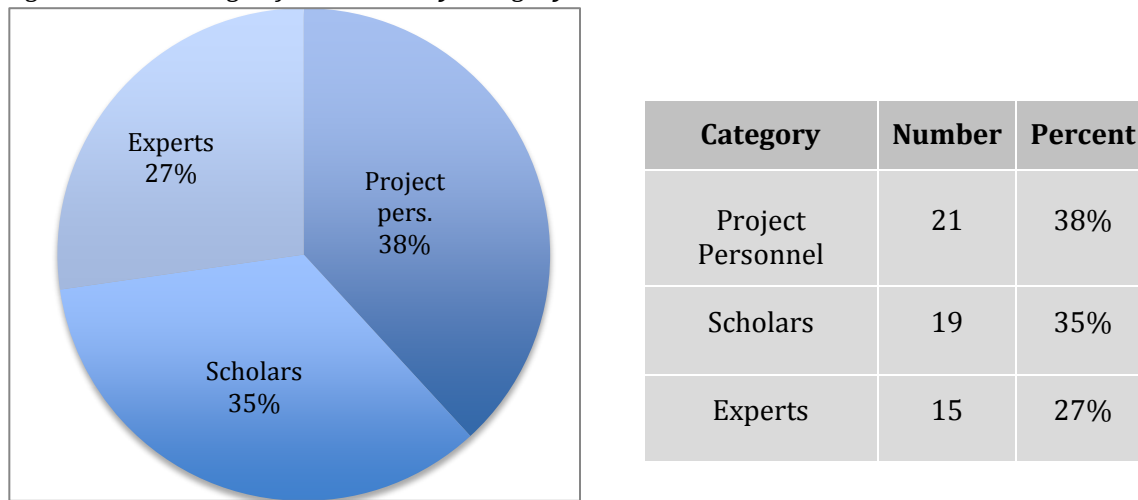
sample to cover as many demographic variables as possible. Several “scholars,” for example, were identified by looking at the web pages’ of relevant departments and selecting a sample of those to contact. The category of “scholars” also includes the subject specialist librarians in relevant fields.

“Experts” were identified in a similar way, by asking for recommendations from project personnel, or scholars, but also through the researcher’s prior knowledge of the field. The data from this group is used to expand upon and provide context for the data from the case at hand—providing a sense of how the field of Tibetan and Himalayan studies compares with the broader humanities in regard to the research questions.

Once identified, all potential interviewees were contacted via email. If there was no response after a subsequent email, subjects were telephoned at their place of work. The initial email was successful in the vast majority of instances, with only three candidates requiring a second email and one requiring a phone call.³⁸ Of the 58 people contacted, 55 agreed and were interviewed. Only one person refused to be interviewed and two people failed to respond to the invitations. Of all of the interviewees, 21 fell primarily into the category of “project personnel,” 19 were “scholars,” and 15 “experts.”

³⁸ One notable exception to this procedure was during the fieldwork and site visits in India and Nepal. Several unplanned interviews were conducted spontaneously and some planned interviewees made introductions to relevant people and other interviewees came about serendipitously.

Figure 3: Percentage of interviews by category.



The majority of interviews were conducted face-to-face, usually in the respondent's place of work but occasionally in the author's academic department or in a public space such as a cafe. Four interviews were conducted over the telephone, using Skype (voice over IP) services with voice communication only, no video.

Semi-structured, person-centred interview techniques—those that move between respondent and informant modes (Levy & Hollan, 1998)—were employed. By allowing significant personalization in responses, person-centred interviews can help to uncover consistencies (and therefore inconsistencies) in viewpoints and provide a depth of understanding not easily achieved otherwise. A basic framework of questions for each category of interviewee was created and pilot tested, both during the pilot case mentioned above and in the TIDSR project. If a respondent fell into more than one category (e.g., both “scholar” and “project personnel”) they were asked questions from both categories. This framework served as a general guide for questions that were common to all interviews, but subsequent questions were asked of interviewees as they arose naturally in conversation. One significant exception to this was the questions posed to “experts.”

In these cases, the researcher did significant work to research the background of the respondent³⁹ in order to tailor the questions to each expert. These questions were intended to elicit answers from these respondents that could not be found in their writings and publications. A list of interview questions, with examples from the “experts” category can be found in Appendix 1. Most interviews (46) were recorded. In-person interviews were recorded using a small, digital recording device that creates MP3 files and telephone interviews were recorded using the Call Recorder software for Skype.⁴⁰ The permission to record the interview was requested at the beginning of the interview and the response recorded. In a few cases, the subject was reluctant to be recorded, in which case the device was shut off immediately. In these cases, the author relied upon note taking during and after the interview.

Immediately after each interview (recorded or not), notes were taken about the general impressions and themes of the interview. This was done usually within a few minutes of the end of the interview and/or site visit, the immediacy being a key factor in the quality of the observations (Wolcott, 2009). The intention of these notes was to distil the conversation down to the most significant points, as well as to facilitate a greater understanding of the research themes. Many of the themes mentioned in these notes were later used to sort through and interpret the interview data. All recorded interviews were saved onto the researcher’s laptop as well as onto a backup disk. All were transcribed in full by the author. The interviews were played back using Express Scribe software to slow the playback speed and transcribed into a plain text file. The process of transcription helped to familiarize the researcher with the content of each interview and expedited the data analysis. For the sake of clarity, stumbling and hesitations have been

³⁹ Prior to conducting each interview, information about each respondent was searched for on the Web. If possible, information about the person’s current and previous research, their area of specialization and publications were sought. If possible, articles or monographs were located and skimmed.

⁴⁰ For more information on the Call Recorder software see their web site (<http://www.ecamm.com/mac/callrecorder/>).

removed from the quotations used here, but they have been maintained in the original transcriptions.

With the exception of those categorized as “experts,” all quotations from respondents have been anonymized. A little bit of research on the part of the reader would doubtless reveal the people behind the quotations, but it was important here—particularly as it is such a small field—that the research results not be obscured by prior knowledge of the respondents. Therefore, wherever possible, respondents are described using relevant demographic or practical information, for example as “a young scholar,” “a graduate student,” or “a librarian.”

4.3.2 On-site Observation.

A total of 10 site visits were conducted over the course of the research, one for each of the principal embedded cases, plus five others. Only one case was local to the author in Oxford, UK, while the others were located in Cambridge, UK; New York City, US; the University of Virginia, US; Dharamsala, India; and Kathmandu, Nepal. The length of the site visits ranged from two hours to two days.

Table 3: Sites visited. The starred projects represent the embedded cases.

Site or Project Name	Host organization	Number of Interviews
*Tibetan Buddhist Resource Center (TBRC)	Rubin Museum of Art	3
*Digital Himalaya	University of Cambridge	3
*Tibetan and Himalayan Library (THL)	University of Virginia	3
*The Tibet Album	Pitt Rivers Museum	3
Library of Tibetan Works and Archives (LTWA)	Tibetan Government in Exile	3
Madan Puraskar Pustakalaya	N/A	1

(MPP)		
Schechen Monastery	N/A	2
Tibetan Mongolian Rare Books and MSS	University of Cambridge	1
Center for Buddhist Studies, Kathmandu University	Kathmandu University	1
*International Dunhuang Project (IDP)	British Library	2

Similar to the notes taken directly after interviews, extensive notes were taken both during and after the on-site observations. In the case of Dharamsala, India, and Kathmandu, Nepal, photography was also used to record the visit.⁴¹ Photography was particularly important in those cases as English was not the first language of the project staff. Being able to visually document the sites was helpful in supplementing the sometimes-limited understanding of questions and conversations. The added pressure of knowing returning to the site if something was forgotten was not an option, also added to the necessity of a second form of documentation and recording. The sites visits were most often scheduled at the time of one or more of the interviews. If an interview took place at the project site, the researcher would ask for a tour of the premises by one or more of the project staff. It was also important to use these site visits to get a sense of the environment in which the project staff worked. For example, did the entire team work on site together, or were they distributed across several workspaces? Were the imaging staff located nearby those doing the cataloguing and metadata? Was there a sense of a team working together toward a common goal? Or were there just individuals working on their assignments? Workspaces are inherently social spaces and the physical design, layout, and even the furnishings can tell a story about the networks that exist (or don't) within a workspace. Site visits were used

⁴¹ All photographs, unless otherwise credited, are courtesy and copyright of Robert Correia Jr.

above and beyond the interviews to witness both the social structure and the power dynamics in order to divine the influence of these on the success of a project. The visited sites included built for purpose spaces, generic office spaces, imaging labs, and library storage facilities, among others. Three of the embedded cases did not have defined “sites” as such. These projects had distributed the work across their university, for example to a dedicated digital imaging lab or even outsourced it to another country. The importance of the on-site observations, though, was to watch the scholars and project staff in their “native” workspaces. Visits to these workspaces were also central in revealing an institution’s commitment to a digital project or digitization programme, and often helped to generate an understanding of the larger professional and social network in which these projects existed.

Site visits were also important for revealing information from individuals that conversation alone could not illustrate. Frequently this revelation occurred while demonstrating a favourite digital collection or piece of software on their computers. Overall, the value of the on-site observations was to help separate the perceived from the real. It was common to see researchers, for example, who said that they don’t use digital collections often, or mention that they were not very technically savvy, but their actual actions belied this when they were viewed navigating digital collections with ease. As Yin points out, “if a case study is about a new technology, for instance, observations of the technology at work are invaluable aids for understanding the actual uses of the technology or potential problems being encountered” (2003, p. 92).

4.3.3 Document Analysis.

Another means of illuminating the relationships and networks within a project or a workplace is through the analysis of both internal and external documents. Each of the cases studied provided some documentation regarding their plans, intentions, and outcomes for their project. These often took the form of project proposals submitted to funders, or reports generated in the interim or at the end of a project. Public documents included annual reports of the organization, working

papers, articles and news items. In some cases, documentation was available as a download from the project web site. In all cases, some of these documents were available, although not all projects provided all of these documents, often because early reports and proposals had been lost when a computer was upgraded or crashed. When available, such documentation was pivotal in understanding the stated goals of the project creators and how they may or may not correspond to the stated goals mentioned by project staff in interviews.

4.4 Webometrics & Surveys

The methods used for gathering quantitative data included webometric techniques as well as a non-probabilistic survey. These data are intended primarily to illustrate project use and to provide some general information about project users.

Where the qualitative methods employed focus on the socio-technical aspects of a digitization project—working styles, staff and leadership, the decision-making process, the workplace, etc.—the quantitative methods focus on the output of the project: that is, the web based collection or web site that is seen and used. These methods are used in an attempt to quantify visits to and use of project web sites, as well as to try and provide objective data about the user experience.

Examined in conjunction with the data from individual users and project staff, the overall use patterns extrapolated from the quantitative data serves both to place the interviewee within the scope of the observed usage patterns, and as an important source for triangulation of data across the whole case.

While the objective nature of this data is of tremendous benefit to the research in providing a way of validating and understanding the discussions with project staff and scholars; the difficulty in these methods lies in the ability to gain access to the data. Once published, a web site is essentially broadcast, and looking for information about how people find or use an online resource is akin to looking for information about how people find a new radio station, or under what circumstances they listen to one station or another. The best source of data is often that

which can only be acquired by those with access to the server housing the project's web pages and database. These usually consist of extended log files or other analytic tools.

4.4.1 Analytics and web log file analysis.

Within the context of the web, analytics refers to the basic statistics that can be gathered about a web site regarding its visitors. These statistics can include the total number of visits, the number of unique and repeat visitors, the number of page views, the geographic location of the visitor, as well as basic information about the visitor's computer such as the web browser and operating system they used when visiting a site. Web analytics are time-based data, meaning a given dataset will cover a time period set by the reporter. Care needs to be taken in both analysing and comparing analytics data since variables such as the number of unique and repeat visitors will vary considerably based on the selected timeframe. For example, if a user comes to a site once a month, they will show up in a series of monthly reports as a unique or first time visitor, however, they will show up in a year-long report as a loyal repeat visitor. The particular software user to gather the analytic data can also affect the results and care should be taken to understand how different software define a "visit" for example, before making direct comparisons of data gathered with different software.

Web log files are still the most common means of gathering analytic data, but a particular web-based tool, Google Analytics (<http://www.google.com/analytics/>), is gaining significant ground in this area. Google Analytics requires the installation of a small piece of code onto each web page to be counted. Like the log file analytic software it provides data about user visits and behaviours across a web site.

If extended log files are generated on a server, or a web based analytics package is in place, close analysis of the data can help to generate a fairly sophisticated picture of both uses and users.

Referrer analysis,⁴² for example, can illustrate how many links exist to a page or web site from academic sites versus commercial sites. This information can then be used to identify use of a site or collection in course syllabi, or as a resource recommended by a library or within a course context (Meyer et. al., 2009).

Analytic data was requested from each of the embedded cases, but was available for only two of the five, with one case providing a series of monthly log file reports and the other allowing the author access to the project's Google Analytics account. While the primary project contacts for all the cases were very forthcoming with project planning documents and reports, in three of the cases, web log data was either not being generated, or not actively gathered and analysed by project staff. Failure to gain access to this data was not a matter of any apparent aversion to supplying it, but by a lack of understanding of how to get it or make it available to the researcher.

When available, web log data was used primarily to identify referring URLs and sites. Because of the overall scarcity of data, the analytics were not used to try and directly compare the numbers of visits or visitors to each site.

4.4.2 Inlink Analysis.

The difficulty in gaining access to web log data for all of the embedded projects means that information gathered using inlink analysis was the only source of comparable quantitative data that could potentially indicate use. Inlink analysis is a webometric technique⁴³ for tracking and evaluating the impact of a web site through a close examination of who is linking to a site and why. In this way, inlink analysis functions as a sort of bibliometric technique similar to citation analysis, but is considered by some to be more reliable for web sites. Due to its universal

⁴² Referrer analysis is a term coined for use in the Toolkit for the Impact of Digitised Scholarly Resources. It was defined here as “a process by which you can determine more specifically how a digital resource is being used. You can find out, for example, if a collection or site is being used in a taught course or if a resource recommended by an academic library. Referrer analysis makes use of several webometric methods, including web log analysis and link analysis” (Meyer et al., 2009).

⁴³ For more information on webometrics and link analysis, see the Toolkit for the Impact of Digitised Scholarly Resources (<http://microsites.oii.ox.ac.uk/tidsr/kb/webometrics>) (Thelwall, 2009).

availability,⁴⁴ comparative inlink analysis can provide some context of how links to one site compare to other sites similar in scope and purpose. Precisely because inlink analysis can be performed without any special access to a web site, it can be an important means of gaining insight into use of online collections.

The goal of the link analysis in this research was three-fold:

1. To conduct a comparative analysis of the web sites for the embedded cases and relevant comparable sites;
2. To determine if any visible pattern or perceptible social network emerged from the linking patterns between these sites; and
3. To evaluate the link analysis data within the overall context of each case in order to facilitate a greater understanding of relative success and characteristics of success of each site.

Link analysis as a means of inferring impact relies on the basic assumption that a link from page A to page B is a recommendation of page B by the author of page A (Henzinger, 2000). It is, of course, not difficult to find exceptions to this, but for this purposes of this project it will be generally accepted as valid—or at least as true as in traditional citation analysis and bibliometric endeavours. In this way, link analysis owes any authority it has to the work that preceded it in citation analysis. The success of citation analysis recognizes that there is a chance that someone has cited an article as an example of “what not to do,” but relies on the assumption that if an article is very heavily cited, it can be considered successful or authoritative.

Two pieces of software were used to generate the inlink data, both tested during the earlier pilot study (Madsen, 2008b): LexiURL Searcher⁴⁵ and Yahoo! Site Explorer (<https://siteexplorer.search.yahoo.com>). The benefit of LexiURL is its ability to automate the gathering of inlink data from a list of domains or URLs. Yahoo! Site Explorer, on the other hand,

⁴⁴ In other words, link analysis data is available for any site on the public Web, unlike bibliometric techniques, which require specific behavior and standards.

⁴⁵ The use of LexiURL Seacher for this research was gratefully provided by Mike Thelwall.

requires each URL to be copied from a list and pasted into the interface by hand. There are then several subsequent steps needed to specify that you are looking only for inlinks and to limit the list of links to those coming from all domains except that of the site being “explored.” While theoretically using the same search engine, the quality of data produced by each piece of software can vary, so data from both were used to correlate the results.

On a bi-monthly basis, Yahoo!SiteExplorer was used to gather inlink data about a set of twenty-two web sites (Figure 4). These sites included each of the web-based projects associated with the embedded cases, but in order to provide comparative data, a number of other digitization projects as well—both within the scope of Tibetan and Himalayan studies and outside of it—were included in the inlink data set.

There were relatively few problems in gathering inlink data, but interpreting the number of inlinks proved very difficult. Mike Thelwall (2006) has done extensive work with link analysis and outlined some of the difficulties in analyzing inlink data. He argues that the difficulty in making sense of inlink data comes in large part from trying to understand *why* one site links to another. He divides the sources of knowledge about these links into “direct” and “indirect,” but find shortcomings with both methods:

None of the above sources of knowledge about links are ideal for the reasons mentioned. The direct sources are problematic because of (a) the practical problems in obtaining a large enough sample size, (b) web dynamics rendering the results of any given sample of temporal interest, (c) the rich get richer linking phenomenon creating fundamental problems with using inferential statistics to interpret factors underlying link counts, and (d) the problem that the reason for high link counts can be completely different to the average reason for link creation... (p. 9).

In employing link analysis methods to the group of digitization projects studied here, it was hoped that a clear picture of a network would emerge, illustrating the strong and weak ties between projects as reflected on the web. To begin with, though, the scale of the available data

for the target projects was relatively small, which as mentioned in point (a) above, proved difficult for being able to understand web links as direct citation sources.

As a result of the overall failing of the link analysis data to prove or disprove the presence of any sort of web network between these projects, the inlink data was used in only the following ways. First, the monthly reports were regularly monitored to identify sudden spikes in the numbers of inlinks. This information was then used as an extension of the referrer analysis procedure mentioned above. When dramatic increases in inlinks were observed, an attempt was made to correlate these to a particular event. This was done through a closer analysis of the referring URLs that are generated as part of the Yahoo!SiteExplorer dataset. These lists were manually scanned for news items, links from large or popular blog sites, or from course. If found, these news stories, reports, or syllabi were downloaded and retained for document analysis.

The second use of the inlink data was to provide a visualisation of a) how the cases compared to one another for inlinks, and b) where the case projects fell in relation to the comparators. The number of inlinks reported in Yahoo!SiteExplorer was recorded onto a spreadsheet and these numbers were graphed as a simple histogram (Figures 4 and 5). Because of the overall lack of confidence in this data, the focus of the interpretation of the inlinks was on the relative number of inlinks to an individual project. This information was used to provide context and background to the author going into the site visits and interviews. It was clear early on that substantive claims could not be made about these digitization project based on the inlink data, but observing that one project had inlinks orders of magnitude greater than another provided a useful and immediate understanding of the relative scale of each one's user base.

Figure 4: The number of inlinks to 22 projects over an eighteen-month period.

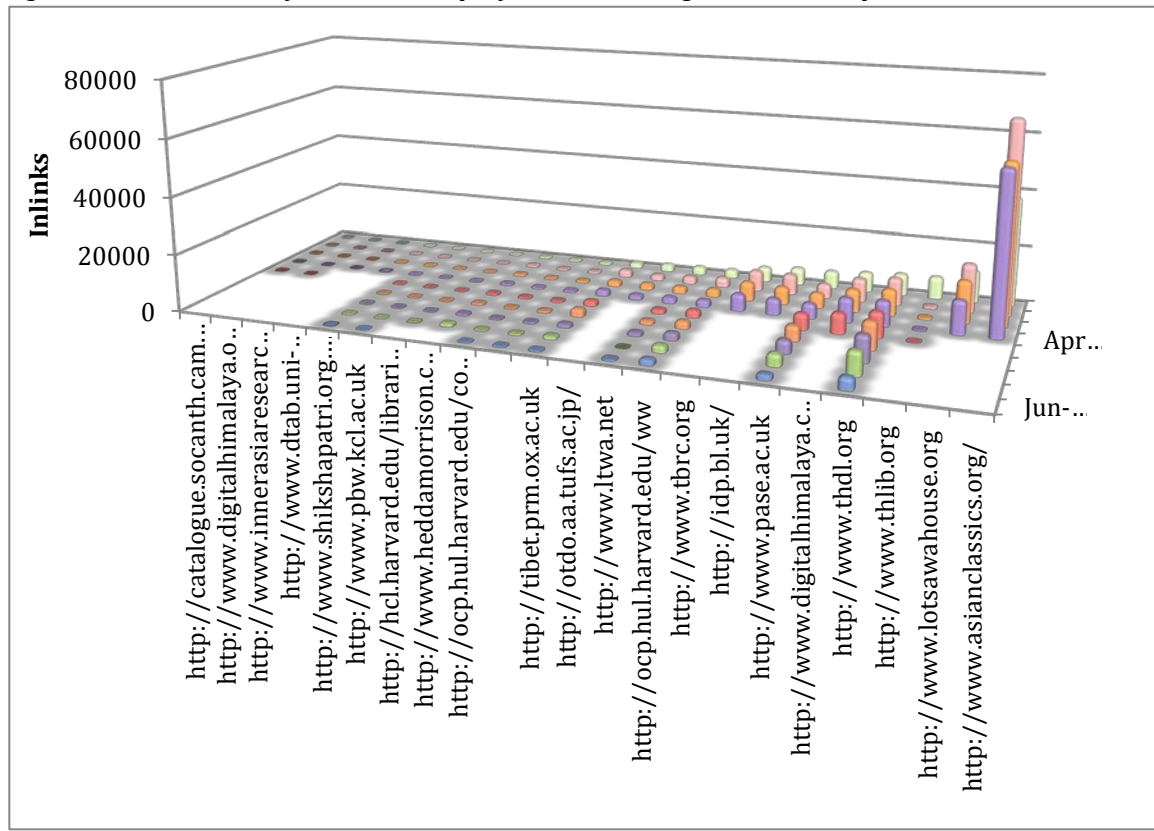
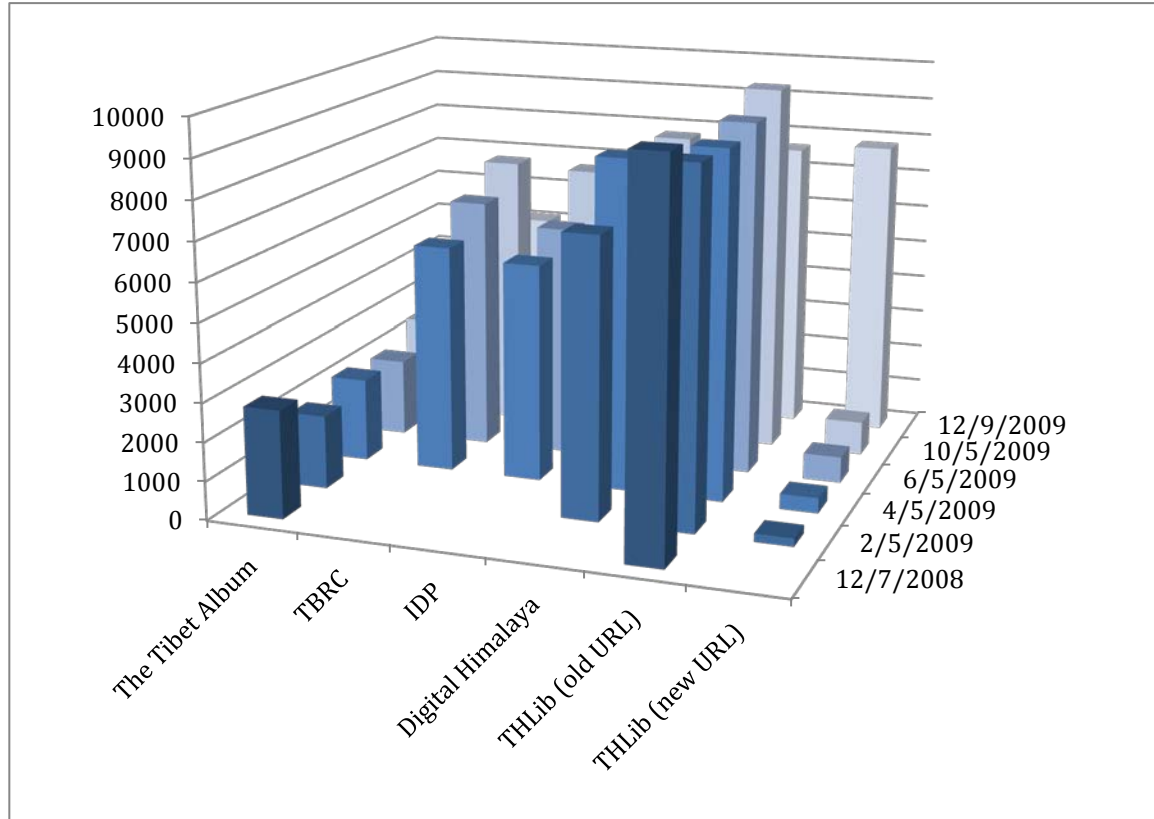


Figure 5: The number of inlinks to the web pages of the embedded cases over a twelve-month period.



4.4.3 Survey.

In November and December of 2009 an online survey was conducted targeting known scholars in the field of Tibetan and Himalayan studies. The survey was intended to provide another perspective on the use of digitization projects and electronic texts in the case of Tibetan and Himalayan studies as well as to understand how the scholars and potential users of these projects are currently using ICTs more generally. The survey provided an opportunity to ask questions not easily asked in interviews, but also created a larger context in which to understand the impact of the specific digitization projects being studied.

The survey consisted of 54 questions and was designed to take approximately 15 minutes to complete. The questions fell into four major categories:

1. General Working Styles and Habits

This section contained questions designed to discover how much of the respondents' general working style and habits currently involve ICTs. That is, do they work primarily online, offline, or a mix?

2. About Specific Resources

These questions were aimed at gathering data about respondents overall awareness of and attitudes toward the specific digitization projects from the cases as well as to understand the level of awareness of the case projects within the larger field of such projects.

3. Other Resources Used by Scholars

This section provided respondents with an opportunity to provide information on resources that they use and like beyond those asked about in the survey.

4. General Demographic Questions

These questions gathered data about the respondents such as age, gender, place of work, job title, and field.

The survey was fielded using LimeSurvey,⁴⁶ an open source survey tool, hosted on the Oxford Internet Institute's web server. This was an opportunistic survey, with responses requested via several topic-based listservs and email lists. A total of 63 responses were recorded, with 41 completed in full (65%). The target number of responses was set at 10% of the population of the community being studied, with the community of Tibetan and Himalayan studies estimated to be approximately 600 scholars.⁴⁷ When this target was reached, the survey was taken down.

Data was exported from LimeSurvey and imported directly into SPSS. Here the data was cleaned (with incomplete or illegible answers removed) and the software used to develop tables.

Microsoft Excel was used to generate the charts and graphs. Due to the overall small number of responses, there was no sub-setting of the data (e.g., comparing use behaviours based on demographic variables). A full listing of the data from the survey can be found in Appendix 2.

There were two models for this survey, the experience and outcomes of which were used to shape the formation of the questions and the analysis of the data. The first was a survey of over 500

⁴⁶ For information and downloads see the Lime Survey web site (<http://www.limesurvey.org>).

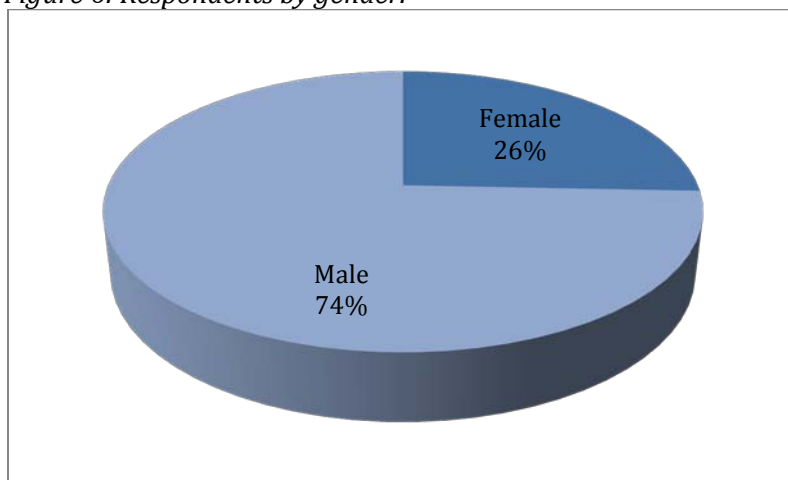
⁴⁷ This number was initially mentioned by several of the more senior interviewed scholars.

philosophy scholars conducted by the author in the spring of 2008 as part of the European project Discovery (Madsen, 2008a).⁴⁸ This survey was funded by the European eContentplus programme. The second model was the survey conducted as part of the TIDSR project (Meyer et al., 2009) and funded by JISC. Data from this latter survey is used throughout this research to provide a point of comparison of Tibetan and Himalayan studies with the broader humanities.

4.4.3.1 Summary of survey respondents.

Of the 63 respondents, 74% were male, 26% female (Figure 6). The average (mean) age of respondents was 42, the median age 41 (Figure 7). 55% of respondents fell between the ages of 40 and 59, with 19% over the age of 50. While this indicates a slight skew towards older respondents, the vast majority (77%) have earned their last degree since 2000 (Figure 8).

Figure 6: Respondents by gender.



⁴⁸ For more on the Discover Project see their web site (<http://www.discovery-project.eu>).

Figure 7: Respondents by age

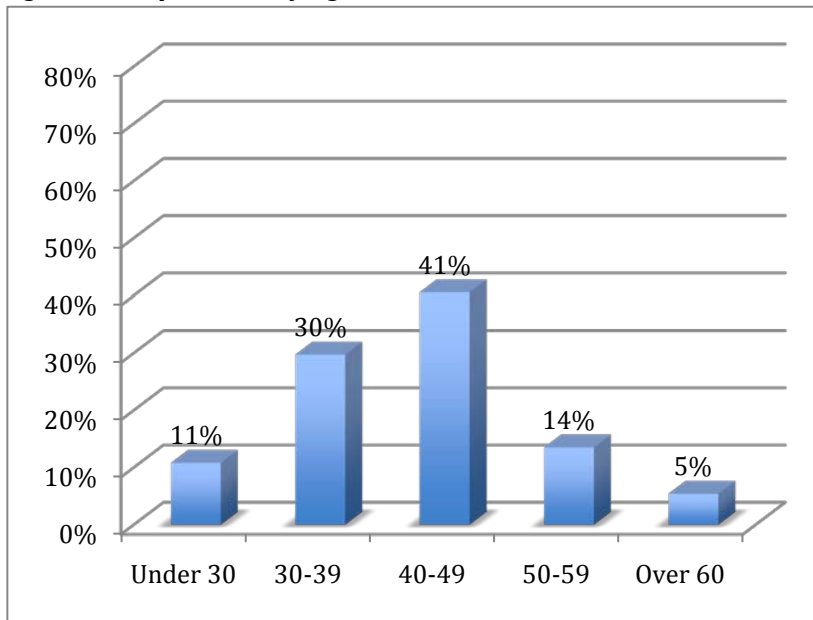
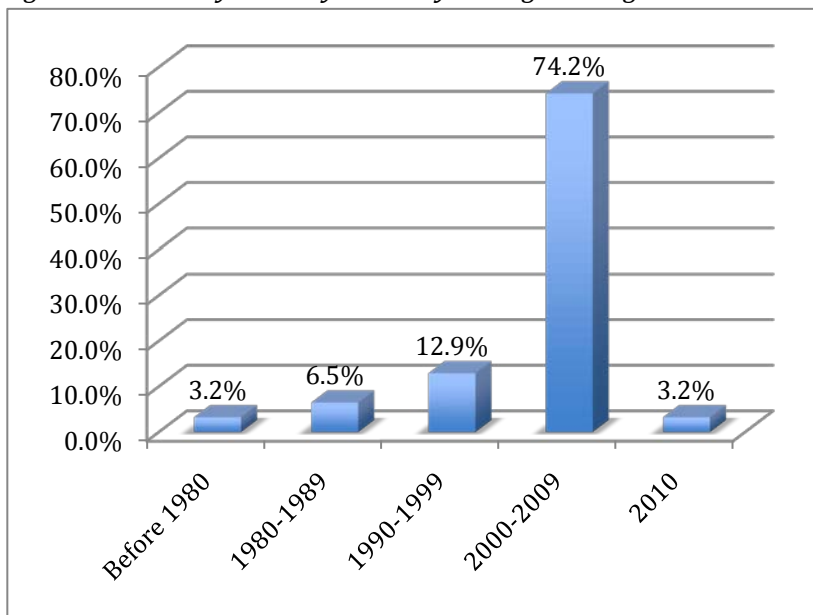
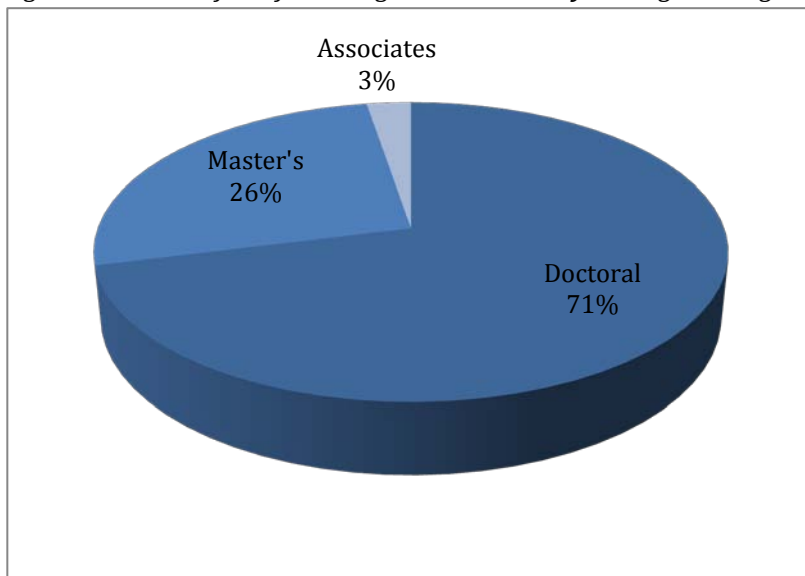


Figure 8: In what year did you earn your highest degree?



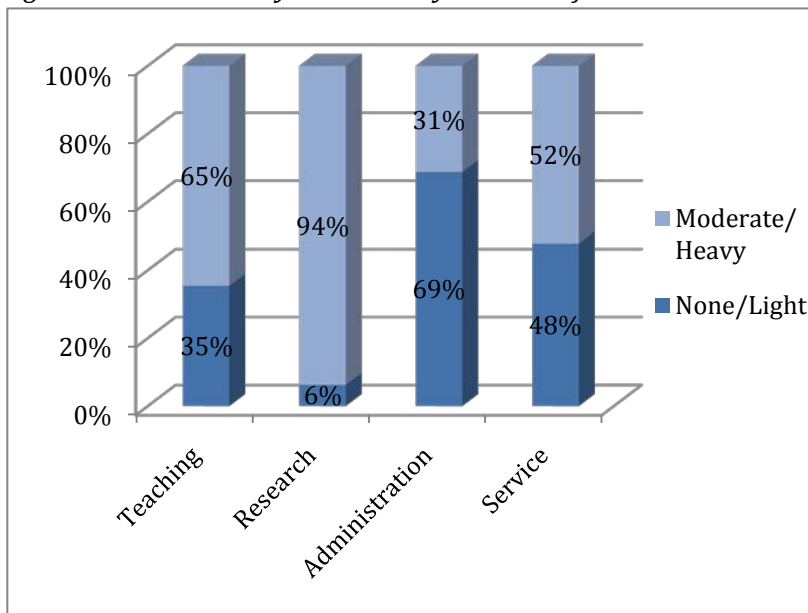
71% of participants hold a doctoral degree, with an overwhelming 97% holding an advanced professional degree of some sort (Figure 9). This is a much higher percentage than was found in the TIDSR survey of the general humanities (Meyer et al., 2009) where 50% held a doctoral degree and 85% an advanced degree.

Figure 9: Which of the following best describes your highest degree earned?



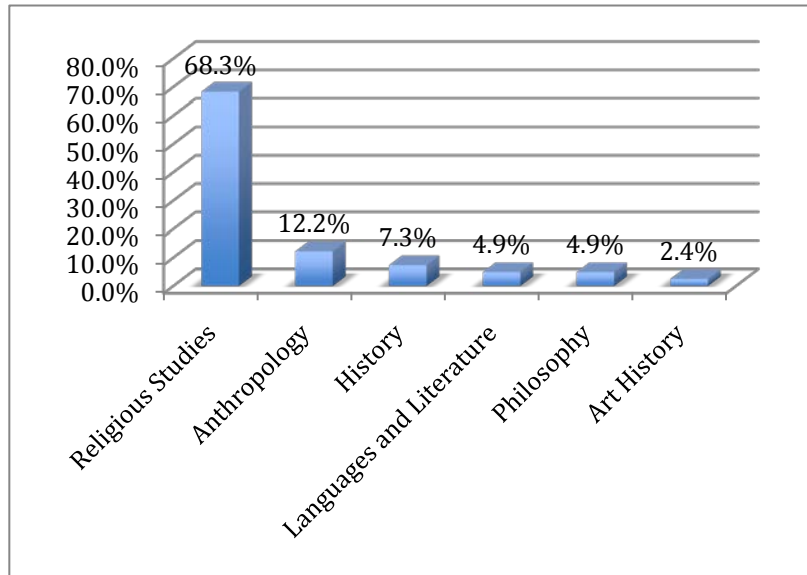
More than 75% of the respondents were employed in academia, (22% were students), with research being by far the most common activity, followed by teaching (Figure 10). The emphasis on research echoes the results of the TIDSR survey (Meyer et al., 2009) (90% heavily engaged in research, 51% in teaching).

Figure 10: How would you describe your level of involvement in the following activities?



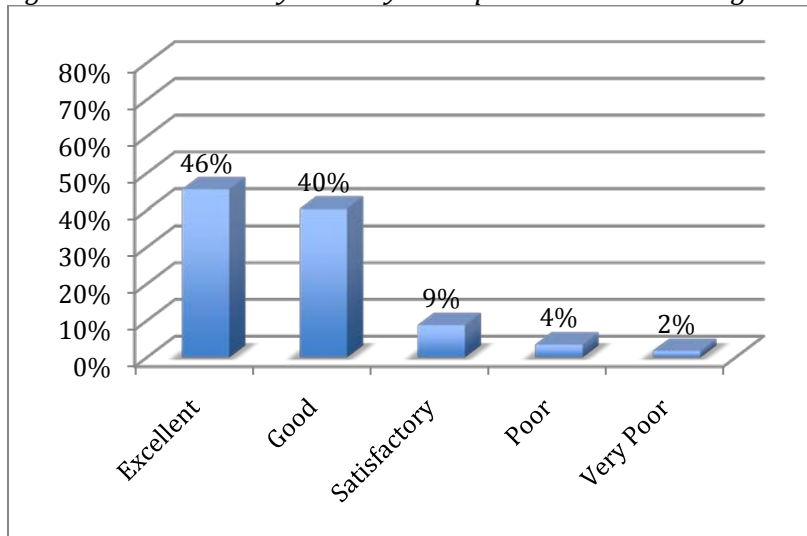
The most common field of the respondents was religious studies (Figure 11), with many respondents indicating their field specifically as “Buddhist Studies.” Responses were gathered from 11 different countries, with the majority, 66%, from the US and the UK.

Figure 11: What is your field of specialization?



Just under half of respondents feel that they have “excellent” ICT skills, with 15% indicating only satisfactory or below (Figure 12). This set of respondents was slightly more pessimistic about their ICT skills than the rest of the humanities as found in the TIDSR survey (Meyer et al., 2009), where 93% of respondents considered their ICT skills to be “excellent” or “good.”

Figure 12: How would you rate your expertise with technologies like the Internet and e-mail?



4.5 Data Organization and Analysis

Data from this research (field notes, transcribed interviews, photographs, survey data) were maintained in simple journaling software called Journler (v. 2.5.5). Journler is an inexpensive, commercial software built using several open source technologies. While it is limited in some ways, Journler helps with the organization of the qualitative data by allowing the import and playback of audio files, text documents and web pages. It also allows tagging of a journal entry, which facilitates the retrieval of a select set of entries.

Experiments were conducted with formal coding of all of the collected qualitative data, but discarded as the quantitative tendencies of coding (counting numbers of codes, etc.) was considered distracting from the qualitative nature of the research. The actual filtering of the data into useful themes for writing the narrative analysis involved manual manipulation and analysis of the data (Creswell, 2007). Tags representing the core themes of the research questions were assigned to each of the Journler entries, and important sections of the interview highlighted. Key quotations and themes were bolded. The one exception to this very manual technique was the use of Woordle (<http://www.wordle.net/>) a simple web-based tool for generating tag clouds, which was used as a visual aid to quickly represent the most common themes of the interviews and documents.

therefore, could not be done in a vacuum, but rather should be seen as part of an interlinked whole that together described or reflects the system. Each embedded case—each digitization project—was also seen as complex socio-technical system, but understood to be part of the larger system that is the field of Tibetan and Himalayan studies. This tangle of systems and hierarchies necessitated a dynamic approach to the analysis of the data—moving from the narrow and individual view of a single interviewee to an overview of the survey data, then back down into the middle regions of the document analysis.

Chapter 5: The Case of Digitization in Tibetan and Himalayan Studies

In order to address the first research question, “what is the impact of the digitization of rare materials on scholarship in the humanities?” the scope of the research was narrowed to the field of Tibetan and Himalayan studies. This step was taken in order to allow for a suitable depth of analysis in the research and to avoid surface generalizations about the whole of the humanities.

In addition to this research, other studies have attempted to answer this question through various means of scoping. The Fondren Library at Rice University focused on “American literature and culture,” for example, in their work on “The Impact of Digital Resources on Humanities Research” (Spiro & Segal, 2007). The LARIAH Project (Warwick et al., 2008) looked broadly across the humanities by analyzing traffic on three of the large portal sites for the arts and humanities. The Berkeley Digital Resource Study on “Use and Users of Digital Resources” (Harley et al., 2006) avoided narrowing the topic of their project by approaching the question of impact from the users’ side, focusing mainly on teaching activities. Each of these projects has something valuable to offer about the impact of digitization, but their breadth resulted in a necessary shallowness. Several studies have indeed confirmed that “in studies of scholars’ information practices, units of analysis must be narrower than the often used “humanities research” (Talja & Maula, 2003, p. 686). This activity of narrowing the scope of the humanities was what Burchard accomplished in his informal observations in 1965 (see section 2.2) and Case (1991), Tibbo (1994), and others have since substantiated.

Therefore, the scope of this research is intentionally limited to a single discipline within the humanities to realize a suitable depth. There are at least two options that could have been taken to accomplish this narrowing: either a selection of projects could have been chosen from across the humanities or a single discipline could have been selected and an analysis conducted of projects within the discipline. Since the goal of scoping was to favour depth over breadth, the researcher chose the latter approach. One of the primary benefits of this approach is that it negates the need

to look at individual projects at all, allowing instead the research to focus on the use of digitization and digital technologies throughout the discipline, regardless of whether it culminates in a neatly packaged, easily defined digitization project.

Another benefit of this approach is that it allowed the researcher to find a field in which a “critical mass” of resources has been digitized. One of the greatest difficulties with areas such as American literature and history is that authors still need to function in a fully hybrid world. The primary resources on any given topic, for example, are likely to be only partially digitized. By necessity, researchers therefore work from a mix of print and electronic materials. In a hybrid workspace, the impact of digitization on user’s working habits or outputs are going to be limited. Thus, efforts were made to select a field or discipline where a critical mass of materials might be available in electronic form.

5.1 Why Tibetan and Himalayan Studies?

The decision to select Tibetan and Himalayan studies as the central case in this research came about relatively early in the planning process. Two key projects—the *Tibetan Buddhist Resource Center* and the *Tibetan and Himalayan Library*—were already considered as potentially important and heavily used resources in the humanities, not just within their discipline. While participating in a conference at the University of Cambridge,⁴⁹ the researcher attended two presentations about other projects in this field and spoke with the project directors. It was clear from both presentations that working with digitized primary resources is not only common for scholars of Tibetan and Himalayan studies, but is central to both the quality and quantity of work being done in the discipline. One of the presenters at the conference that day, Hildegaard Diemberger, said,

Tibetan and Mongolian texts are being rediscovered, catalogued and scanned in libraries, museums and monasteries around the world. Taking place in different social and cultural contexts, these activities aim to explore new forms of archiving and retrieval, to improve

⁴⁹ The conference was, “Building a Virtual Humanities Collaboratory.” For more information see the conference web site (<http://www.crassh.cam.ac.uk/events/751/>).

access, and to reconstitute collections, volumes and texts that have been broken up and dispersed; they also form part of the revival of Tibetan Buddhism and the preservation of cultural heritage, often after political disruption and religious persecution. New digital technologies, by facilitating the reproduction and distribution of texts, have had an enormous impact in this process with significant cognitive, cultural and political consequences.⁵⁰

Diemberger's convictions about the significance of digitization were a clear indication that the case of Tibetan and Himalayan studies might fill a series of requirements that would make it both a useful and interesting case.

The field has a number of significant qualities and characteristics that makes it an appropriate case for this research, the first of which—as Diemberger points out—is the prevalence of digitization within the field. For the number of scholars in the field—estimated to be between approximately 500 and 700⁵¹—there are a large number of ongoing and completed digitization projects. Intute (<http://www.intute.ac.uk>) the UK directory of scholarly web sites, lists 179 sites that focus on Tibet, 19 of which are collections of primary resources. Persia and Persian studies, by contrast has five sites in Intute.⁵² Given the sheer number of projects and their cumulative total of digitized resources, it seemed likely that this was not only a field with potentially a “critical mass” of digitized resources, but also a field where both digitization and working with digital texts is very well embedded within the practice of scholarship. Because of this opportunity for heavy saturation of digital resources and well-rooted practice, the chances of finding digitization projects that can be defined as “successful” seemed higher. This was an important factor for answering the second research question, “what are the factors that determine the success of digitization projects that involve rare and closely guarded materials?”

The digitization projects and other incidences of digitization within Tibetan and Himalayan studies also cover a large part of the typography of digitization projects (Table 1). Within this

⁵⁰ Diemberger's conference paper is unpublished, but was in part based on an earlier paper, the online abstract from which this quotation was taken (<http://vectors.usc.edu/thoughtmesh/publish/12.php#hildegarddiemberger>) (Diemberger and Hugh-Jones, 2008).

⁵¹ This number was provided to the researcher by several of the interviewed scholars.

⁵² This data was gathered from the Intute web site (<http://www.intute.ac.uk/>) on May 12, 2010.

single discipline, a large variety of inputs from the typology—at least twelve—are represented, including: text based projects and image-based projects; those with and without full text available (only images of pages). Importantly, there are also projects that are created and housed within many different administrative units including museums, libraries, monasteries, and academic departments. This diffusion was particularly important in helping to analyse the third research question, “what is the impact of the changing relationship between humanities scholars and rare primary resources on libraries?” The overall variety in inputs and outputs also allowed the researcher to consider a number of variables for success, which is important for answering research question two, “what are the factors that determine the success of digitization projects that involve rare and closely guarded materials?”

The scoping of this research down to a single discipline also removes—to a large extent—the subject matter of the content as a variable in answering each of the research questions. One of the difficulties in gauging the impact of digitization is in matching up the content of specific projects with the scholars to whom they are of interest. Is a project deemed a failure, for example, because of the structure or design of the interface, because the project was not well marketed and therefore not found by potential users, or simply because the content was of little or no interest to scholars? In the 2009 TIDSR survey, an average of 13% of 550 respondents were occasional or regular users of the specific resources being analysed. For most of these projects, an additional 20-35% of respondents were aware of one or more of the projects, but did not use it because the content was not in their subject area. In short, much of non-use of digitized resources simply comes down to a low demand for the resources that have been digitised. The often (and rightly) criticized “if we build it they will come” attitude towards many of these projects causes difficulty in separating the success or failure of the project’s idea, execution, or infrastructure from a disinterest in the content. Michael (2005) explains the origins and pitfalls of this attitude:

Often an archivist cannot understand why a truly wonderful and rich collection which has been painstakingly arranged and described, a finding aid produced, perhaps encoded and

available on the web, has not attracted much use. The logical next step is to believe that researchers that should be using this collection would use it if only the collection itself were available online so the idea of digitizing the collection is planted. It is a logical argument, which follows the classical philosophical principal, “If we build it they will come.” This has been a guiding principle behind much archival and special collections thinking about their collections. That the value of their collections is so inherent, so critical an aspect of our cultural heritage that if people were only aware of the existence of such resources they would flock to us as magi following the star to Bethlehem. Our job was to create the guiding star, and if they in their blindness cannot find the start we will transport the manger virtually to their doorstep. (p. 386)

By creating a case study of a single academic discipline, the “if we build it they will come” factor is effectively removed. There is already a known correspondence between the broad scope of the subject matter and the potential audience for the materials.

5.2 Background on Tibetan and Himalayan Studies

Tibetan and Himalayan studies is at once a conglomeration of several disciplines as well as a discipline in its own right. Harvard University, for example, defines it as a field of study that incorporates, “...south Asian texts and text traditions, and the cultural, intellectual, and social practices that they inform.”⁵³ A brief discussion of the field is provided here in order to emphasize the commonalities in practice and approach of the scholars as the most important factor for this research, but also to describe the breadth, depth, and history of the discipline.

Tibetan and Himalayan studies is generally situated in the humanities, but also borrows from the social sciences. It employs methods from a number of textual and social disciplines. From Harvard again:

The department trains students to approach [...] textual traditions from a variety of disciplinary perspectives in the humanities including history, literature and literary theory, religious studies, theology, and philosophy. Students are encouraged to view their chosen texts and topics in their historical contexts, while also exploring their significance to South Asian traditions up to the present and contemporary issues in the humanities and social sciences. We emphasize both a rigorous philological approach to [...] Asian texts, and the multidisciplinary perspectives that are needed to study and write about them.⁵⁴

⁵³ This quotation is from the web site for the Sanskrit and Indian or Tibetan and Himalayan Studies web site (http://www.gsas.harvard.edu/programs_of_study/sanskrit_and_indian_or_tibetan_and_himalayan_studies.php) (President and Fellows of Harvard College, 2010b)

⁵⁴Ibid.

Harvard's description provides both an important sense of the geographic breadth of the field as well as the breadth of the methods and techniques it employs.

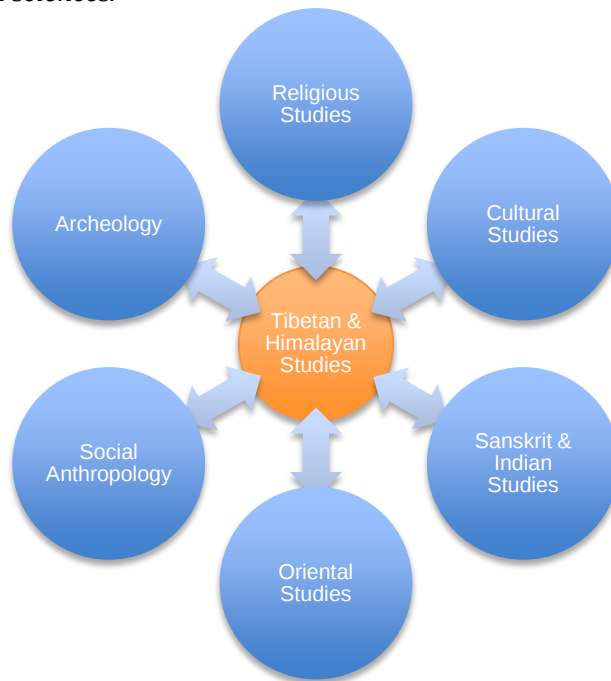
Administratively, the discipline is usually situated within other departments such as religious or cultural studies or within departments of languages and literature. At Harvard University, Tibetan and Himalayan studies is not a department, but a program of study situated in the Department of Sanskrit and Indian Studies. At the University of Oxford it is a taught MPhil course through the Faculty of Oriental Studies.⁵⁵ At the University of Cambridge, the nearest discipline is to be found in the Department of Social Anthropology Mongolia & Inner Asia Unit;⁵⁶ and at the University of Virginia it is an area of study in the graduate program of the Department of Religious Studies.⁵⁷ Others engaged in this work can also be found in the Department of Linguistics. At the School of Oriental and African Studies, scholars in Tibetan and Himalayan studies may be found in the departments of Anthropology & Sociology, Art & Archaeology, or Study of Religions.

⁵⁵ See the faculty of Oriental Studies web site (http://www.orinst.ox.ac.uk/isa/mp_h_tibetan.html).

⁵⁶ See the Department of Social Anthropology Mongolia & Inner Asia Unit's web site (<http://www.innerasiaresearch.org/>).

⁵⁷ See the University of Virginia's Department of Religious Studies' web site (<http://artsandsciences.virginia.edu/religiousstudies/graduate/index.html#a1>).

Figure 14: The relationship of Tibetan and Himalayan studies to similar disciplines in the humanities and social sciences.



While Tibet and the Tibetan Diaspora is most often the focus of those who work in this area, the discipline covers a much wider geographic area including Nepal, Mongolia, Bhutan, as well as parts of China and Northern India. These geographic regions are most frequently, from a scholarly perspective, associated with the Tibetan Diaspora (and for the sake of convenience may be referred to this way throughout this research), but it is important to note that there are many other cultures, languages and religions at play here. Nepal alone is composed of at least eight distinct language and cultural groups and while being the birthplace of Gautama Buddha, father of the Buddhist tradition, is known primarily as a country of strong Hindu practice.⁵⁸ For all of these reasons, the crafting of Tibetan and Himalayan studies is in many ways a matter of convenience; perhaps even to be thought of as a very Western way of grouping a disparate set of people into a coherent discipline. The important characteristics for this research are therefore as much those of the scholars that study it as of the people and cultures being studied.

⁵⁸ These statistics come from the CIA factbook web site (<https://www.cia.gov/library/publications/the-world-factbook/geos/np.html>).

As mentioned earlier, the field is estimated to contain between five hundred and seven hundred scholars, and by some accounts has grown tenfold over the last thirty years. Several of the senior scholars interviewed, when asked how their discipline has changed over the course of their career mentioned first the staggering rate of growth that they have seen.

Interviewer: How has the field changed over the course of your career?

It has just exploded. I was at the first young Tibetologists conference in 1977. I have a photograph somewhere. There were about 30 of us. It was a great conference. Good community feeling. These were Tibetologists from all over the world. The next one that was held was in Oxford, about 60 or 70 people. Now we have about 500 people at one of these conferences, three or four simultaneous sessions. It is too big.

Despite this rapid and significant growth, the discipline remains marginalized within the academy according to many of its practitioners. It was described by several as not well supported within their institution and by one tenured professor of religious studies as a constant “underdog”.

The opening of Tibet to visitors by China in the 1980’s may have been part of what allowed the field of Tibetan and Himalayan studies to flourish, but for many of its scholars the raw materials of their research remain difficult to access. This limited access has meant that researchers have long relied on technologies for copying the texts they are studying. At first, “copying” meant the manual transcription of texts, as mechanical reproduction was too expensive, but eventually photography, then digital photography became heavily used. Several of the senior scholars interviewed described their use of photography to take images of the texts they would study for the next several years. For example:

I did my PhD in the 1980’s and I couldn’t even afford to photograph things. Sometimes I would make small copies and look at it through a magnifying glass, but more often I did it the old fashioned way, which was to transcribe them. And of course, the scope for mistakes is enormous. That was how I started. Then, when it became less expensive, I switched to 35mm photography, which was a huge improvement. And then as soon as I had even heard of digital cameras I thought, this is going to change everything.

In the late 1980’s, at the same time E. Gene Smith was actively collecting and republishing Tibetan texts in his PL480 program in Delhi, the German Research Council funded a large-scale project to photograph archives in the Mustang region, on the borderlands of Tibet and Nepal. The

initial idea was to provide the texts either in very small print runs or to print them on demand. These photographs were later digitized and now form the core of a digital project now available from the University of Bonn called Documents, Records, and Letters concerning Tibetan History, (<http://www.dtab.uni-bonn.de/tibdoc/index1.htm>). This project, as well as the personal uses of photography (first analogue, then digital) to reproduce rare texts illustrates that the adoption of digital technologies in Tibetan and Himalayan studies appears to be more evolutionary than revolutionary. The reliance on working with surrogates that is necessitated by both the remoteness of and difficulty in accessing the primary resources as well as the cost of funding research travel seems to have eased the transition to working with digitized texts and may in fact help explain the prevalence of digitized materials in this field.

There are several reasons for spending the time here to describe and explicate the field of study that forms the main case in this research, the first and most obvious being to make the parameters on the scope of the research visible to the reader. The second reason, though, is to be able to set the groundwork for beginning to understand the role of digitization within the discipline. There are a number of reasons why digitization has taken hold in this field and while the focus of this research is on the changes brought about by use of digitization it is important to discuss how this evolution came about and more specifically *why* digitization has become so common in this field in order to recognize the impact it has had on the practices and outputs of the scholars in the field. To this end, some time will be spent here in explaining the relationship between the cultural practices, textual traditions, and technology that are found in both Tibetan and Himalayan studies and the cultural and religious practices in the Himalayan region, particularly Tibetan Buddhism.

5.3 Understanding the Role of Texts in the Tibetan Diaspora

There are two important relationships between people and text that need to be analysed here.

First, there is the relationship between the scholars in this area and the texts that are the object of their study. Second, there is the relationship between the indigenous peoples in the region and the

texts that form the core of their religious practice. They will both be discussed here briefly, as there is strong evidence that they not only inform one another, but have also influenced the uptake of digitization in the field.

To look at the first situation—that of scholars—we need to briefly revisit the traditional relationship between scholars of the humanities and their texts, for while Tibetan and Himalayan studies may borrow from the social sciences, in relation to texts and primary and secondary resources, it falls squarely within the humanities. In short, “[t]he value of the physical, printed book or journal is deeply embedded in the scholarly culture” (Rimmer et al. 2007, p. 1387). Rimmer, Burchard (1965), Stone (1982), and many since have provided a significant amount of evidence in this area to explain the relationship between humanities scholars and their primary resources. They elaborate, for example, humanists’ reliance on monographs over journals⁵⁹ and the long shelf life of their information resources. The library is also well established at this point as “the humanists laboratory” (Burchard, 1965; Langdell, 1887) and the text as their primary research object. In this way, Tibetan and Himalayan studies shares a great number of characteristics of practice with the broader humanities. Scholars are, for example, “accustomed to spending hours with textual materials, whatever the format, and required to do so by the methodologies of the humanities. Close reading of texts and a mastery of the contents of a large number of documents are necessities” (Jones, 1995, p. 34). This kind of relationship with primary resources indicates a deep reading of sources—what Greg Crane (2001) has referred to as “drudgery and deep thought”—as well as an intense relationship with the information search. Whereas in the scientific disciplines, hiring research assistants to do library and database searching has often been quite common, humanities scholars have maintained that they need to do their own searching and finding of resources. “Both humanists and historians see the search for information as being as important as the information itself” (Delgadillo & Lynch, 1999, p. 248).

⁵⁹ This point is made very commonly, but still contested by some. See for example Greenstein’s preface in Brockman et al 2001.

Running parallel to this general humanistic relationship with texts is the particular influence and symbolism of the book in Tibetan studies and Tibetan Buddhism. Much as with humanities scholars in other disciplines, the text in the practice of Tibetan Buddhism is not only resource, but symbol. For Western scholars in academia, the authored, published text is a symbol of scholarship, accomplishment, and in some respect, power. According to a recent study the humanities is still a solidly book-based field. The primary output is still the scholarly monograph, “ideally published by a prestigious scholarly press” (Harley et al., 2010, p. 389). Respondents interviewed in the course of this research verified that this holds true for Tibetan and Himalayan studies as well. Promotion to tenure almost always required the publication of monographs. An interesting twist here, though, is that for practitioners of Tibetan Buddhism there is a similar symbolic power in texts: the possession of books is “the symbol par excellence of the authority gained from a reputation for learning” (Schaeffer, 2009, p. 128).

The book is a particularly rich focal point in the study of Tibetan cultural history, for it is a nexus of intellectual, religious, social, artistic, and economic aspects of life. A physical instantiation of learned culture and tradition, the book serves as a principal point for debating culture and tradition, whether the role of libraries in religious institutions, the relative merits of oral and written teachings, or the price of translated literature. The study of this single yet immensely important object of materials culture, offers greater understanding of the cultural and social history of Tibet and of Buddhism. (Schaeffer, 2009, p. viii)

So the book is a symbol of learning and power that can be shared by humanists, scholars of Tibetan and Himalayan studies, and practitioners of Tibetan Buddhism alike. This relationship is so strong in the Tibetan diaspora that it is in fact possible that the profound nature of the book in the geographic and cultural areas they are studying is influencing the actual practice of Tibetan and Himalayan studies. Thus, this connection is worthy of further analysis. As Schaeffer explains:

The book in Tibet is variously the embodiment of the Buddha’s voice, a principal tool in education, a source of tradition and authority, an economic product, a finely crafted aesthetic object, a medium of Buddhist written culture, and a symbol of the religion itself. From the earliest examples of Tibetan writing upon the imperial stele to the mass production of printed canons a thousand years later, Tibetan scribes, scholars, and kings

have explicitly made reference to the importance of books and the written word in areas of life from social authority to soteriology. Tibetan scholars of the five traditionally classified forms of knowledge (arts and crafts, medicine, language, logic, and the “inner art” of Buddhism) have exhibited passionate involvement with written culture—editorial theory; translation practices; forging authoritative transmissions of knowledge, practice and lineage. Yet relatively little is known about the specific contours of the culture of the book in Tibet, such as the roles of patronage in the production of texts, the economic and social implications of producing massive canons of Buddhist literature on the Himalayan plateau, the position of the scribe in society and the working life in a Buddhist scriptorium (2009, p. vii).

While the sacredness of texts is most often associated with two parts that make up the canon of Tibetan Buddhism known as the Kanjur and the Tenjur,⁶⁰ all forms of text are treated in a way that an outside observer might consider “sacred.” As one of the interviewed scholars said, “you wouldn’t just throw a grocery list away.” It is only recently, though, that scholars like Schaeffer have started to look closely at the relationship between Tibetan culture and the textual medium, but it is a relationship that intentionally or unintentionally has informed the scholarship in the field.

Reverence for text is both apparent and ubiquitous in the geographic areas of the Tibetan Diaspora. This reverence was confirmed in this research as much through the fieldwork as through a traditional study of the extant literature. In Dharamsala, India and the Boudhanath section of Kathmandu,⁶¹ text is visible everywhere—prayer flags contain written texts, rocks are carved with prayers and mantras, books are placed on altars, and images in temples often contain scenes of reading and studying (Figures 15, 16, & 17).

⁶⁰ The Kanjur (or Kangyur) is the words of Buddha. It is composed of 108 volumes, each of which contains many works. The Tenjur (or Tengyur) is the commentaries and treatises on the words of Buddha. It contains 224 volumes and 3,626 texts. For more information, the Wikipedia entry is fairly accurate and concise: <http://en.wikipedia.org/wiki/Kangyur>

⁶¹ Boudhanath is a section of Northeast Kathmandu that is famous for its giant stupa. Located on the traditional trade route from Tibet to the Kathmandu valley, it has been a pilgrimage site for Tibetan Buddhists since at least 450BCE, before Kathmandu was established. It is now home to at least 50 Tibetan Buddhist monasteries. <http://en.wikipedia.org/wiki/Boudhanath>

Figure 15: Stones carved with prayers, Tsugladkhang Temple complex, Dharamsala, India.



Figure 16: Wall painting of a monk reading, Norbulingka Institute, Sihdpur, India.



Figure 17: Top: Prayer flags, Boudhanath stupa, Kathmandu, Nepal. Bottom: Prayer flags, detail.



Step outside the walls of Boudhanath and into the Hindu sections of Nepal and the texts disappear.

Beyond the visible, the reverence for text continues further still—practitioners circumambulate the library (Figure 18), prayer wheels contain strips of written mantras and prayers repeated thousands of times (Figure 19), and library collections often house small shrines as well as texts, blurring the line between library and temple (Figure 20).

Figure 18: Tibetan Buddhists circumambulating the Library of Tibetan Works and Archives, Dharamsala, India. Note: Each carries in their left hand a mala, or string of prayer beads.



Figure 19: The inside of all prayer wheels contains strips of paper with written or printed mantras and prayers.⁶²



⁶² This photograph is courtesy of Flickr user tdiemu. <http://www.flickr.com/photos/reisgekki/3014610163/>

Figure 20: Blurring the lines between library and temple. Top: Library in the Temple at the Norbulingka Institute, Sihdpur, India. Bottom: Shrine in the stack room of the Library of Tibetan Works and Archives, Dharamsala, India.



Figure 21: Top: Monks turning prayer wheels at the Tsuglagkhang Temple complex, Dharamsala, India. Bottom: Giant prayer wheel, Dharamsala, India.



While this sort of deep cultural and spiritual relationship with text is only beginning to be studied and understood by Western scholars, it is apparent and striking in even the shortest visit to areas of the Tibetan diaspora. The landscape, social, and cultural lives of the people are saturated with text. This integration of text into the physical and non-physical surroundings of practitioners are said to be methods of integrating prayers into daily life. Monks and lay people walk past these texts routinely. It becomes habit to spin prayer wheels when passing by them (Figure 21, top). Each of these movements and acts is said to bring the textual prayers to life.

While the saturation of texts into one's surroundings is thought to be a means of quotidian integration, there are also particular activities that serve to emphasise a special engagement with text. The act of copying out texts, in particular, has long been considered a good or meritorious deed and is indeed tied to some of the earliest teachings of the Buddha. The *Lotus Sutra*, which is often quoted in Tibetan Buddhism in defence of the worship of textual scriptures, says:

If a good man or good woman shall receive and keep, read and recite, explain or copy in writing a simple phrase of the *Scripture of the Dharma Blossom*... that person is to be looked up to and exalted by all the worlds, [and] showered with offerings fit for a Buddha.... Let it be known that that person is a great bodhisattva (Schaeffer, 2009, p.5).

So strongly associated are texts and writing with good deeds that both the act and the medium are considered both economically important and sacred. Printing on water—where the characters of prayers and mantras are slapped out on the water—and printing on the sky are both practiced as well as being the centre of important Tibetan legends.⁶³ Great value is placed on learning to read at a young age (Schaeffer, 2009) and paper has always been an important economic commodity.

Such reverence for text and textual practices is not limited to the immediate geography of Tibet, but is spread throughout the Tibetan Diaspora. Vesna Wallace writes particularly about Mongolia:

⁶³ *The Boy Who Wrote Sutras on the Sky* is a centuries-old story of a boy who heard of the great merit that comes from writing out the Diamond Cutter Sutra. Too poor to afford paper and pen, he eventually writes the Sutra on the sky. “Then, in the space of the outline that he had fashioned, the rough grass became soft, the flowers had a sweet fragrance, and in neither day nor night was there frost, hail, wind, or rain—all through the blessing power of writing the holy object (Schaeffer, 2009, p. 147).

Buddhist manuscripts have been preserved in part due to Mongolia's dry climate and in part due to the Mongols' reverence for books. In the Mongolian language, the word *nom* [...] designates both the Buddha Dharma and a book, implying the Mongols' non-differentiating view of the two. The second line in the opening, salutary words found at the beginning of many Mongolian Buddhist texts, which reads: "I pay homage to Dharma (*nom*)," implies one's homage to both, Dharma and the book. The Mongols' reverence for Buddhist scriptures is also expressed in their texts of dedication to different Buddhist sutras and in texts prescribing the methods of worshipping the sutras, making offerings to them, and giving them alms as if they were living sagely ascetics (2009, p. 90).

Wallace also mentions another factor in the reverence for texts that is important to note here, that not only the act of copying out a text, but also the act of commissioning it that holds merit for the actor. She says, "...a practice of copying texts by hand continued to flourish especially among Mongolian literate lamas in the countryside, as printeries and printed books were not easily accessible and affordable to nomads. Likewise, copying a text by hand or commissioning such a text has been valued as a greatly meritorious, religious practice" (Wallace in Berkwitz et. al., p. 84).

The result of this combination of reverence for text and a practice based in copying is that ancient Tibet has the highest per capita output of texts per capita of any culture. As one of the interviewed scholars said:

We have a huge amount of material to deal with. Some people don't realize that what we have of the Greeks and the Romans is relatively small—more than one hundred times of what was created in ancient Greek and Rome combined is what we have in Sanskrit. And we have more extant materials too. And Tibetans have probably the largest literary output per capita in recorded history. Just a few million Tibetans producing thousands and thousands of books; and not just romance novels, but incredibly refined, educational discourse.

5.4 Understanding the Role of Technology in Tibetan Buddhism

While Wallace mentioned in particular the act of copying out a text by hand, the meritorious qualities of this act have never been limited to manual reproduction. In addition to engaging with a text through manual writing, the act of printing by mechanical means has always been considered meritorious as well. Although not readily apparent, the link between the role of text in the Tibetan Diaspora and the uptake of technology is both closely linked and significant to this research. Just as the use of text is heavily embedded in the culture and practice of the Tibetan

Diaspora, so too is the use of technology; and one of the first and longest associations of the diaspora with technology is through the mechanical reproduction of texts.

If in Tibetan Buddhism, to copy a text is to do a good deed and to earn merit, then to automate the copying of that text is to do the same, only faster and more efficiently. This notion often seems counterintuitive to westerners who are inclined to romanticize Tibet as pure and untainted by modern technologies, but the truth is that Tibet has long had a love affair with automating the reproduction of texts. Block printing is known to have existed in Tibet and China from the ninth or tenth century,⁶⁴ with the first major commissions for larger texts (under the patronage of the Mongols) in place by the 13th century. There is also some evidence that the Tibetans were using an early form of moveable type as early as the 13th century⁶⁵ for the mass production of prayer flags (Palmieri, 1991). By the end of the thirteenth and beginning of the fourteenth centuries, the mass printing of the Kanjur and Tenjur was in full production in most major institutions, “with massive economic resources poured into their making” (Shaeffer, 2009, p. 62).

This view of how technology has been used to automate the reproduction of texts illustrates the beginning of an ongoing affinity for combining technology and text. The next steps in technological automation are closely aligned with the significance of recitation of prayers and mantras in Tibetan Buddhist practice. Like writing or copying out the sutras, recitation is seen as another means of engaging with text that produces meritorious results. When speaking about the recitation of the mantra “oh mani padme hum” for example, Lama Thupten Zopa Rinpoche said”

If you recite ten malas⁶⁶—a thousand mantras—a day, then when you go to wash in the

⁶⁴ The earliest known printed book in the world, is in fact a Buddhist sutra, or teaching. The Diamond Sutra (<http://www.bl.uk/onlinegallery/hightours/diamsutra/>) is a central teaching of Indian Buddhism and was first translated from Sanskrit into Chinese in about 400 AD. This copy of the Diamond Sutra was found in the caves of Dunhuang and is the earliest block print to contain a date: 11 May 868.

⁶⁵ This article by Palmieri looks at the case of three blocks for printing lungta (prayer flags) that used a set of interchangeable “keys” for setting in alternate texts. Palmieri argues that this was an early form of combining wood block printing with moveable type.

⁶⁶ A mala is a string of beads (usually 108) used, like a Catholic Rosary, for reciting and counting prayers. To recite a mala, therefore, means to say a prayer or mantra for each of the beads in the mala. To recite ten malas is simply to do this ten times.

river or at the beach, all the water becomes blessed. Because your body is blessed by the mantra, all the water becomes blessed as it touches your body, and so the water purifies all the animals who live in the water, who drink the water, and those who touch the water (Lopa & Zadner p. xii).

This statement indicates the extreme power imbued to the recitation of simple prayers or mantras in Tibetan Buddhism. It is important here in illustrating both the qualities with which these prayers are infused, but more importantly, the power ascribed to the quantity of repetition. Like with the reproduction of text, if more mantras means more merit, to automate the recitation of mantras makes good sense. Prayer flags (Figure 17) are one form of such automation. Prayers are printed onto thin and loosely woven squares of cloth, which are hung outside. As the wind passes through and around the flags, it is said to release the prayers printed on them into the wind and to bless anyone passing by (Wise & Thurman, 2001). If reciting a mantra or prayer releases it, then prayer flags can in some way be thought of as automating this process.

While prayer flags perform the recitation of a mantra or prayer through wind power, prayer wheels (as shown in Figures 19 & 21) are able to automate the recitation of thousands of mantra in only a few seconds. Prayer wheels appear as metal cylinders inscribed or painted with a mantra around the outside and set atop a dowel or turning mechanism (see Figures 21 & 22). Inside all of them are mantras (most commonly “om mani padme hum”) written or printed hundreds or thousands of times on scrolls of paper wound tightly into the centre of the wheel (as shown in Figure 19). The size of prayer wheels varies from a few inches to many feet. Small prayer wheels are perched atop a handle and contain a weighted lanyard to provide momentum and assist in the spinning of the wheel; they are carried by practitioners who spin them in a clockwise direction as they walk—also always clockwise—around a sacred space such as a temple, monastery, or library. Larger prayer wheels are affixed to walls, while the largest (several feet in height) are placed in small rooms by themselves. These wheels are turned by passing practitioners as they follow circumambulation trails (Figures 21 & 22).

Figure 22: Two kinds of prayer wheels.⁶⁷



Just as prayers are released onto the wind from flags (as can be seen in Figure 17), mantras inside of prayer wheels are said to be released through the rotation of the wheel. To spin a prayer wheel is the equivalent of reciting each of the mantras written inside. In the words of the Amitabha Buddha, “anyone who recites the six syllables while turning the Dharma wheel at the same time is equal in fortune to the Thousand Buddhas” (Lopa & Zadner, p. vii). In this way the prayer wheel can be seen as a powerful means of automating the recitation of mantras.

Most prayer wheels are turned by hand, and can be seen as a common form of technology used to deliver more mantras than could be read or recited manually. Taking the notion of automation one

⁶⁷ Photography courtesy of Flickr user “Noelle's Cottages”:
<http://www.flickr.com/photos/noellescottages/4264665886/>

step further, the prayer wheels themselves are frequently automated. Some are turned by water, others by the warmth of a lamp or even a light bulb.

If books are receptacles of the Buddha's words, these words can be activated, released and made to speak by various means – not just by reading but also by being set in motion through prayer beads, prayer flags and various kinds of prayer wheels powered by wind, water, human hands or the hot air from burning butter lamps. The whirling drums of prayer wheels have a mantra written or embossed on the outside; inside are many meters of text on a scroll tightly rolled round a spindle inscribed with yet more words. Motion also comes from circumambulation as pilgrims carrying prayer-wheels and prayer beads walk clockwise round temples containing books, round mani walls with stones inscribed with mantras, and round books themselves. In each case the principle is one of reduplication and repetition – as many words, as many revolutions, and as many repetitions of the same text as possible. (“Textual Transformations,” n.d.)

Given this long and productive history of automating the reproduction and recitation of text, it should come as no surprise, then, that the adoption of digital texts in this diaspora has been so common. If the goal is quantity, then digital media have some tremendous benefits.

Digital media have many advantages over the older materials and techniques used to store, catalogue, and disseminate the written word. They are smaller and more compact; more easily stored and searched; and can be used to disseminate copies of texts to a much wider audience, faster, more cheaply and without damage to the originals. (“Textual Transformations,” n.d.)

Early forms of digital media even share the same spinning quality of prayer wheels, even the same clockwise direction. “They have the advantage of yet more text and even higher speeds, a point that has also crossed the minds of many in the Buddhist world” (“Textual Transformations,” n.d.). Taking this to the next step, rumours abound on the Internet that the Dalai Lama himself has said that having a digital prayer wheel—or even just the text of the mantra “om mani padme hum” on your spinning hard drive is the same using a traditional prayer wheel.⁶⁸ From this idea, copious animated gifs, computer applets, gadgets, and widgets have appeared to fulfil the practice of setting text into motion with the greatest ease. Figure 23 shows an example of an animated prayer wheel.

⁶⁸ This quote appears on a number of web sites including Digital Prayer Wheels (<http://www.dharma-haven.org/tibetan/digital-wheels.htm>) but could not be substantiated in any of the Dalai Lamas writings or teachings.

Figure 23: An animated illustration of a prayer wheel, which if opened in a browser will spin in a clockwise direction.



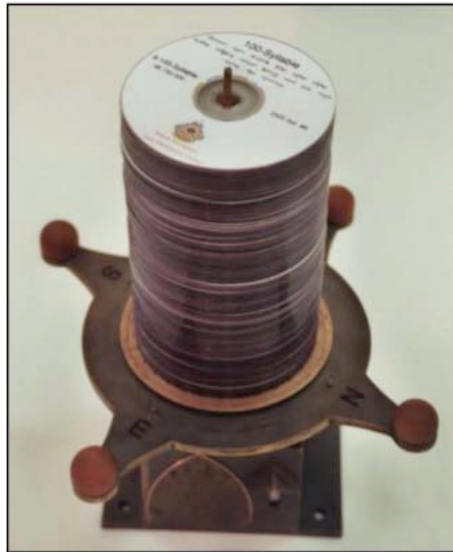
As shown in Figure 24, some Western practitioners of Tibetan Buddhism have taken this notion of digital prayer wheels to an extreme through the manufacture of prayer wheels filled with DVDs each containing millions of mantras.

Figure 24: From the sales brochure for the Tibet-Tech Prayer Wheel.

Tibet-Tech™ Prayer Wheels
The Most Powerful Tibetan Prayer Wheels in the World



Outside of the Tibet-Tech Prayer Wheel



Inside of the Tibet-Tech Prayer Wheel

Each prayer wheel contains 128 DVDs, for a total of over 1.8 trillion prayers.⁶⁹ While not typical of the Tibetan Diaspora, when viewed in the context of the long affinity of the Tibetan Buddhists

⁶⁹ The Tibet-Tech Prayer Wheel is available from the Earth Sanctuary web site (<http://www.earthsanctuary.org/sacredSpacesPrayerWheel.php>).

with automating the repetition and reproduction of texts, the Tibet-Tech™ Prayer Wheel does not seem incongruous.

If prayer flags, prayer wheels and printed and carved mantras are all ways of integrating text into daily life, the adoption of digital technologies can also be seen as an extension of this principle. Daily life for many around the world now takes place in front of a computer, so does it not make sense for that space to contain these same integrations? Considered from this perspective, the leap from stone to paper to digital bits does not seem inconsistent and may provide a reason for the early adoption and widespread uptake of digitized texts in this field. The close relationship between text, scholarship, and daily life contributes to suitability of Tibetan and Himalayan studies as the central case for this research.

5.5 The Politics and Popularity of Tibet

One of the questions asked of all of the respondents interviewed in this research was “why do you think there are so many digitization projects that have to do with the Tibetan and Himalayan region?” Some provided several responses, but each interviewee in some way touched upon the general infatuation in popular culture and the media with Tibet. To discuss Tibetan and Himalayan studies—and particularly how it intersects with the Internet—one must therefore also look at the popular rhetoric and images that abound through popular culture. At the centre of Tibetan and Himalayan studies is, of course, Tibet—a politically charged topic that is a dynamic force in popular media. A search on Google of the exact phrase “free Tibet,” for example results in 1,130,000 results.⁷⁰ The first page of results shows at least a dozen different organizations actively engaged in “raising awareness” about the oppression of Tibetans under Chinese rule. The boards of directors of these foundations include wealthy and notable Hollywood stars and regularly host expensive dinners and fundraisers for their cause. Celebrity presence in Dharamsala, India for the fortieth anniversary of the Tibetan uprising against Chinese rule even

⁷⁰ Search performed on 19 April, 2010.

For most of the late twentieth century, Tibet remained a distant and remote “Shangri-la” as China kept out foreign visitors. When opened back up to visitors in the 1980s, Western fascination with old, romanticised notions of Tibet were reawakened.

Pieces on Tibet were beginning to pop up everywhere in the media; Tibetan Buddhist monasteries were springing up all across the country; support groups for the Dalai Lama’s exile movement were proliferating; and the entertainment industry were being drawn into the vogue, sponsoring political events, fundraising banquets, concerts for “Tibetan Freedom” and even “major motion pictures.”⁷¹ (Schell, 2000, p. 11)

In addition to its scholarly roots, firmly planted in the social sciences, linguistics, and religious studies, the field Tibetan and Himalayan studies must also be seen in this context. Although the vast majority of those who support a “free Tibet” never learn Tibetan, study the Kanjur or the Tenjur or practice Tibetan Buddhism, there is undoubtedly a popular magnetism that draws some people to the subject. Although difficult to correlate specifically to the success of particular digitization projects, there is nonetheless an advantage that comes from being the public eye. While often marginalized within the academy or within their departments, Tibetan scholars agree that the popular infatuation with Tibet helps them to both perform and fund their work. A project director who has been particularly successful at raising money explains:

The field of Tibetan studies is absolutely extraordinary and perhaps unique in terms of the intensity of the global interest in it and the absolutely low number of people that we are talking about. Six million people is nothing. It is a huge area of the world, it is strategically important, environmentally very important, the land mass is massive, but very few people. So can you cite me any other academic field that is focused on so few people and has so much global intense interest? Forget the academic field, just any other people in the world with such intense interest and such small demographics. Because of Buddhism, because of the Himalayas and because of the Dalai Lama. And of course China, because of what is happening with China. So that constitutes a very unusual academic field. Relatively small numbers, manageable scope, and yet a lot of energy and interest and potentially resources devoted to it. Knowing that there is that public interest also helps drive these things.

⁷¹ In 1997, both *Seven Years in Tibet* and *Kundun* were released by major U.S. studios. Both depict different parts of the life of the Tenzin Gyatso, the 14th and current Dalai Lama.

Chapter 6: Findings Related to the Impact of Digitization on Scholarship in the Humanities

Part One: Changes in the *Inputs* of Scholarship

To date, the digital technology used by humanities scholars has focused almost exclusively on methods of sorting, accessing, and disseminating large bodies of materials. In this respect the work has not engaged the central questions and concerns of the disciplines. It is largely seen as technical and pre-critical, the occupation of librarians, and archivists, and editors. The general field of humanities education and scholarship will not take up the use of digital technology in any significant way until one can clearly demonstrate that these tools have important contributions to make to the exploration and explanation of aesthetic works. (McGann, n.d., para. 1)

6.1 Introduction

Alan MacFarlane is Emeritus Professor of Anthropological Science at the University of Cambridge and a Life Fellow of King's College, Cambridge. At sixty-nine years old he certainly doesn't qualify as a digital native,⁷² but Macfarlane's YouTube channel "ayabaya" (<http://www.youtube.com/user/ayabaya>) has 2,411 subscribers and over three million total views.⁷³ He has been making films and videos related to his work for over forty years and started uploading them to YouTube in October of 2006. MacFarlane has also done extensive research on the impact and use of these videos—counting the number of hits and views, researching the reasons that some have been viewed more than others or received large spikes in viewers, and comparing the means and methods of use between YouTube and his academic web site (MacFarlane, 2007). Is this an example of a Cambridge professor's hobby, or is this evidence of substantive change in the way he and his colleagues produce and disseminate their work?

MacFarlane's explorations on YouTube illustrate precisely the conundrum of current research about digitization. To truly understand the impacts of digitization, and make meaningful decisions about its future directions, we need real evidence, rather than anecdotes. Or, as McGann states above, to "demonstrate that these tools have important contributions to make to the exploration and explanation of aesthetic works" (n.d., para. 1). The three research questions presented in

⁷² The term digital native usually refers to those people who have grown up (or are growing up) immersed in digital technologies, that is, those "for whom a life fully integrated with digital devices is the norm." For more information see the Digital Natives web site (<http://www.digitalnative.org/>)

⁷³ Usage statistics taken on 30 May 2010 from: <http://www.youtube.com/user/ayabaya>.

Chapter 1 were used to frame and guide the data gathering throughout this work. These next five chapters will be used to answer each of the questions in turn, using data gathered for this research to illustrate the findings.

The first research question, “what is the impact of the digitization of rare and closely guarded materials on scholarship in the humanities?” is critical to establishing first that digitization is indeed having an impact on scholarship in the humanities and second to understanding the nature of that impact. Towards these ends, the question has been broken down into three sub-questions. For the purposes of clarity, humanities scholarship as manifest in the field of Tibetan and Himalayan studies will be analysed from the perspective of three components: inputs, practice, and outputs and the first three of the findings chapters will be dedicated to each of these in turn.

Table 4: Research question one: The impact of digitization on scholarship in the humanities

1. What is the impact of the digitization of rare and closely guarded materials on scholarship in the humanities?
 - a. Are these digitization projects affecting the inputs of humanities scholarship?
 - i. *Are scholars increasingly using digitized resources?*
 - ii. *Are there more scholars citing electronic/digital versions?*
 - iii. *Do scholars now cite things they haven't seen in person?*
 - b. Is the practice of humanities scholarship changing?
 - i. *Is there more teamwork and/or collaboration?*
 - ii. *Is there less travel by scholars to view library materials?*
 - iii. *Are scholars sharing their work earlier (e.g., sharing pre-prints or annotations)?*
 - c. Are the outputs of humanities scholarship changing?
 - i. *Is there more work being produced about rare/obscure works?*
 - ii. *Are scholars doing things with these works that they couldn't before (e.g., changing page sequence, text mining, etc.)*
 - iii. *Is the quality of their work changing?*

6.2 Changes in the Inputs of Scholarship

For the purpose of this research, the inputs of scholarship are defined as the resources used by the scholars in their research and writing. While this use can include reference materials, secondary sources such as journals, visual resources, and primary resources, the focus of this research is

primary resources—rare and difficult to access materials in particular. It is well established that researchers are using electronic journals and that this has changed the ways in which they seek and access information as well as the outputs of their work (Schonfeld & Housewright, 2010; Harley et al., 2010), but use of digitized primary resources is less well known.

The difficulty in gathering data to answer this question is tied to scholars' habits regarding citing electronic resources. A deeply embedded practice of citing analogue resources even when the electronic has been consulted means that bibliometric techniques could not be used to answer this question (see section 4.2 for further discussion). Findings reported in this section instead draw upon data collected in three ways: an online survey of 63 Tibetan and Himalayan scholars (see Appendix 2), the interviews of 40 Tibetan and Himalayan scholars (including librarians) and project managers and ethnographic observation of the workspaces of digitization projects. The 15 interviews with “experts” in the creation of digitization projects as well as the broad survey of humanities scholars referred to here as the “TIDSR survey” (Meyer et al., 2009) are used throughout these next chapters to understand the answers to these research questions within the context of the broader humanities.

6.2.1 General use of digitized resources by Tibetan and Himalayan scholars.

6.2.1.1 Are scholars increasingly using digitized resources?

Data gathered from the online survey of Tibetan and Himalayan scholars in 2009 indicates that 71% of respondents access primary resources for their work both online and in print. A further 7% reported solely using online resources (Figure 26). A majority of respondents (63%) in the same survey said they regularly or frequently use electronic facsimiles of primary materials (Figure 27). Overall, use of digital content (audio, video, maps, blogs) was on average much lower for the group of Tibetan and Himalayan scholars than for the humanists surveyed in the TIDSR project (Figure 28), but use of online facsimiles of primary resources was 50% higher for the Tibetan and Himalayan scholars.

Figure 26: When you use the following sources in your work do you access them online, in print, both, or do you never use them? Answers from the Tibetan and Himalayan Studies survey.

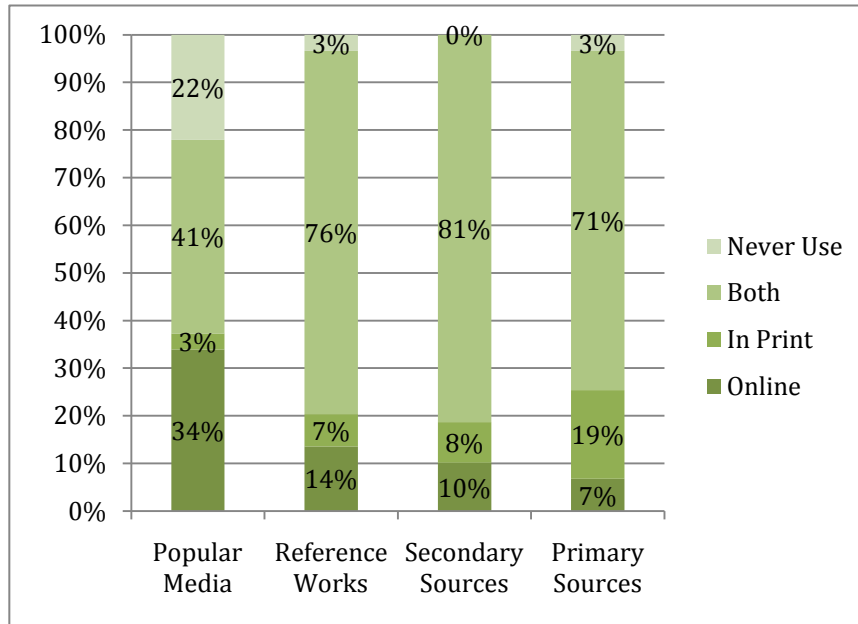


Figure 27: How often do you use the following in your work? Answers from the Tibetan and Himalayan Studies survey.

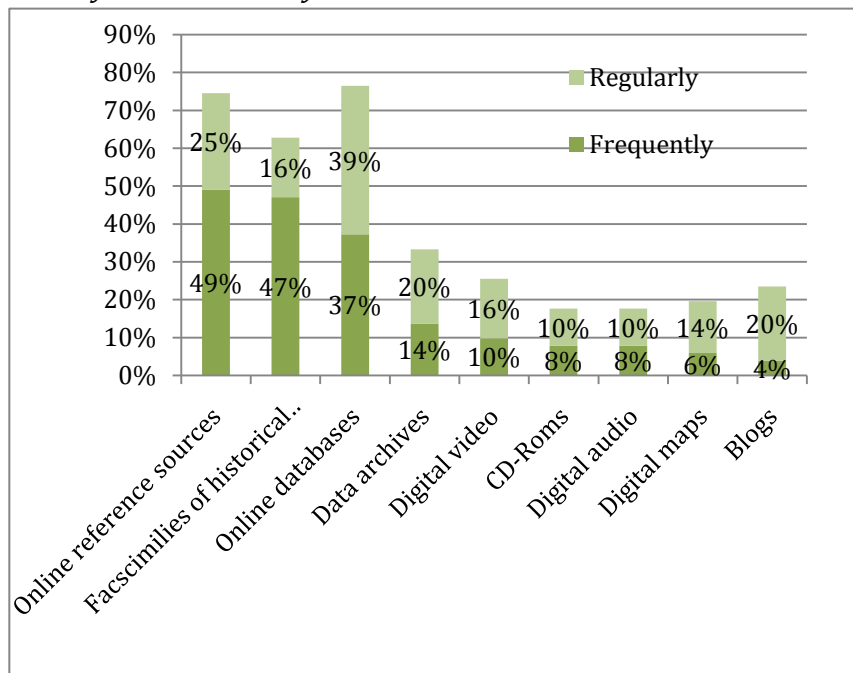
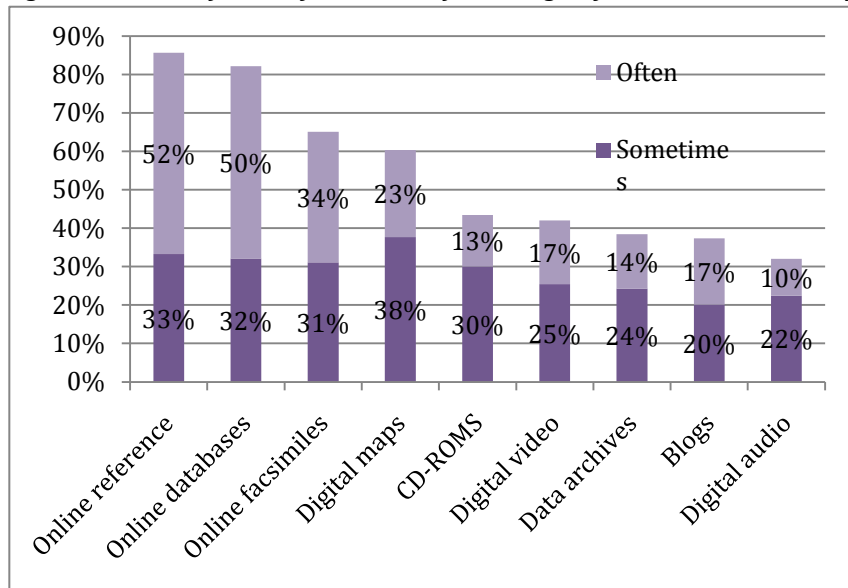


Figure 28: How often do you use the following in your work? Answers from the TIDSR survey.



So, in short, while overall use of online resources (including journals and other secondary sources) by scholars in Tibetan and Himalayan is lower than in the humanities more generally, use of digitized primary resources is higher. These findings are further supported by responses to the interviews, in which every participant reported using online primary resources, even if their preference was for print resources. Even those who considered themselves not technologically savvy, or those who worked primarily with printed publications, also made use of digitized resources.

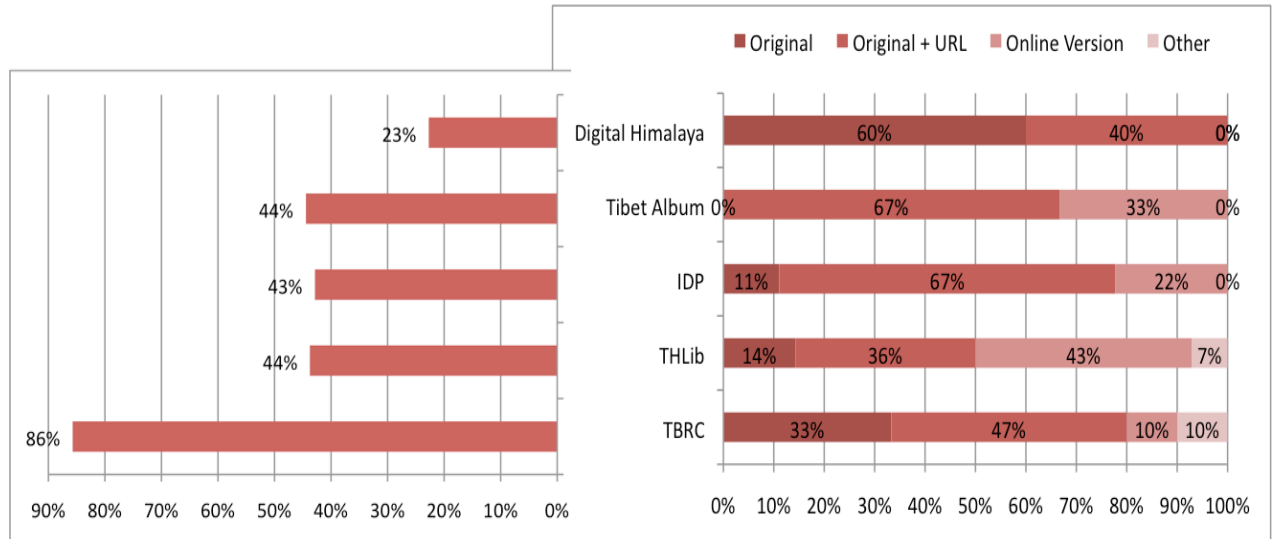
6.2.1.2 Are more scholars citing electronic/digital versions than they used to and do they cite things they have not seen in person?

While the use of digitized primary resources in Tibetan and Himalayan studies is pervasive, citation of these electronic resources is not. Although this practice was initially discussed within the context of the research methods used here (see section 4.2), it is important to note here as it essentially answers two of the three sub-questions, “are there more scholars citing electronic/digital versions?” and “do scholars now cite things they haven’t seen in person?”

Figure 29: Citation of electronic resources. Answers from the survey of Tibetan and Himalayan studies.

Have you ever created a piece of work for which you have used these electronic resources?

If yes, how did you cite the electronic version or the originals?



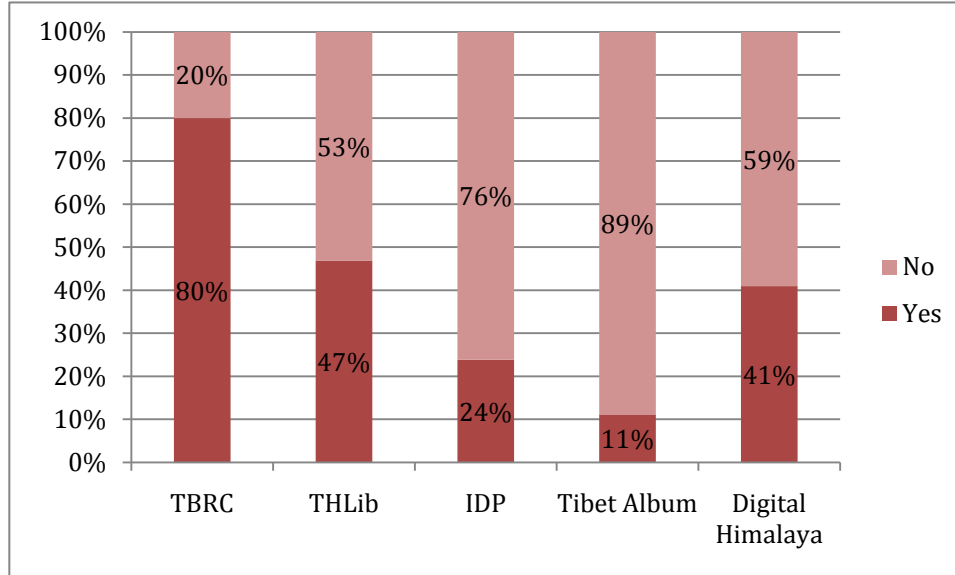
Most respondents to the survey of Tibetan and Himalayan scholars cited the original documents within these collections, although with the exception of *Digital Himalaya*, they usually included the URL. The *Tibetan and Himalayan Library* had the highest percentage of respondents who cited the online version only (43%), which may correspond the prominence of a “How to Cite” feature on their home page (Figure 30).

Figure 30: Homepage of the Tibetan and Himalayan Library indicating the prominent “How to Cite” feature.



Results from the survey of Tibetan and Himalayan scholars indicates mixed results regarding correspondence between use of original resources and citation of electronic versions. The high percentage of users who cite the original versions of the documents on the *Tibetan Buddhist Resource Center* (Figure 29, above) also corresponds with the fact that 80% have indeed used the originals (Figure 31). The average use of the original documents in these collections is 41%, which was similar to the findings in the TIDSR Survey (45%) (Meyer et al., 2009). With the exception of TBRC, though, where the “originals” are widely distributed around the world through the PL480 collection, the original materials in the other collections are much less commonly consulted (an average of 31%), indicating that they are rare or difficult to access.

Figure 31: Have you ever used the original version of the documents available on this site?



The first impact of the lack of citations to digitized primary resources was its influence on the methodological choices for this study. As mentioned in Chapter 4, this meant that citation or bibliographic analysis could not be used to determine use. Reliance on qualitative data, however, has ultimately allowed for a more nuanced understanding of the kinds of use being made by scholars in this case. Therefore, the focus of understanding how the *inputs* of scholarship in this area have changed will be on two unexpected conclusions that were revealed over the course of this research: the use of personal and local digital collections and fundamental changes to the way scholars are accessing and using digital information.

6.2.2 Use of personal and local digital collections.

As mentioned in section 5.2 about the practice of Tibetan and Himalayan studies, the use of photography for creating and storing personal collections of texts (or more specifically facsimiles of texts) has been common since photography became affordable enough to allow for heavy use of film and cameras. Just as art historians used to keep large collections of 35mm slides to use in their classes, scholars in Tibetan and Himalayan studies worked extensively in the 1970s and 1980s photographing the texts that would form the core of their next year, or several years, of research work. These scholars are therefore familiar with working from large local or personal

collections of texts reproduced on slides or film. Several of the interviewed scholars are still working from large collections of photographed texts taken over the last several decades. Frequently, though, these scholars mentioned a preference for working from digital images rather than analogue ones. Large local collections of slides and photographic prints are rapidly turning into local digital collections. As described by one senior lecturer in Tibetan and Himalayan studies:

My sabbatical work is working on a corpus of manuscripts that I photographed in a village—eight hundred folios. I am going to digitize them, I have the funding. It is so much easier to work on materials of this sort when it is on a computer, because you have everything on the screen in front of you. You don't need a paper text in one corner of your desk, a paper dictionary on the right hand side, a piece of paper to write on, it's all here. I have the text in front of me and I can blow it up if I need to. I have the online dictionary (not that a dictionary will help too much with these texts) and I open a word documents to write in and I have a recorder in front of me. I am working with a lama so he can give me a commentary. Everything is on one screen. It is just so much more convenient. And for communicating as well. You can just send a scan to your colleagues.

While the idea of personal and local collections are not new for these scholars, it does appear that it is more widespread in part because scholars no longer have to travel to amass personal collections. Prior to the availability of large online collections, personal collections had to be created through expensive and time-consuming fieldwork, often requiring sabbatical time as well as research funding. Digital collections that allow for the downloading of entire texts, however, make building a personal collection of primary resources easy and affordable. Scholars who are currently in their thirties studied for their advanced degrees in a post-photography age, where access to digital collections (primary and secondary) has almost been taken for granted. The collecting practices of young scholars in Tibetan and Himalayan studies seems to be converging around the creation of large personal collections. These scholars routinely collect more texts (primary and secondary) than they may ever need and keep them close at hand to enable instant access from anywhere. As one young, post-doctoral scholar noted:

More generally I find that everyone has their own pdf library of masses of articles. We travel around to Tibet and Asia with our laptops with enough material on them to fill up all

the shelves in my office. I don't think any of us ever read all of them. It is just a hording thing...you know it is sort of like iTunes for some people...you know, you get all the songs and albums and you think ok, this would be good for my collection so you download it, but you never listen to it.

This preference for downloaded texts and local collections is further supported by evidence from the survey of Tibetan and Himalayan scholars. Over 70% of respondents in Tibetan and Himalayan studies often download digitized materials to use offline (Figure 32). This compares with only 43% in the humanities more generally as was found in the TIDSR survey (Meyer et. al., 2009) (Figure 33).

Figure 32: Please describe how you generally use digitized resources. Answers from the Tibetan and Himalayan Studies survey.

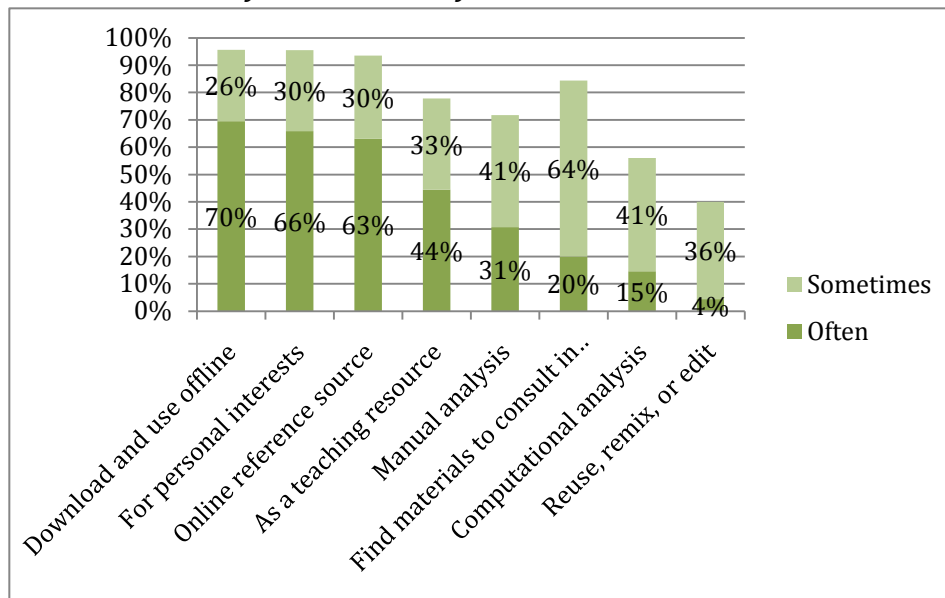
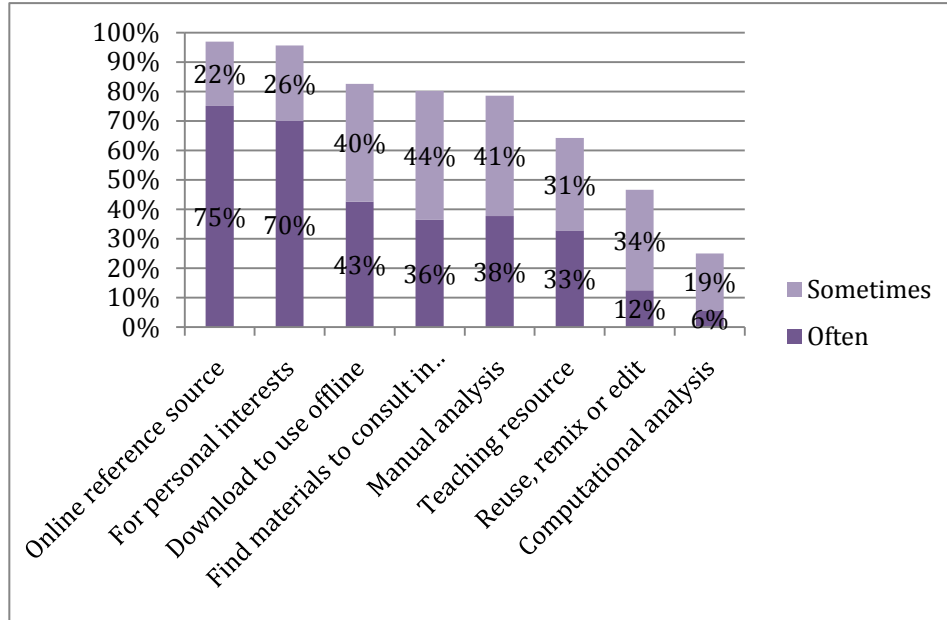


Figure 33: Please describe how you generally use digitized resources. Answers from the TIDSR survey.



This sort of “hording” behaviour points not only to habits in collecting texts, but in a fundamental change in the relationship with resources. In an interview with one of the digitization experts, Dale Flecker, Harvard’s Associate University Librarian for Information Systems, he noted the same behaviour in Harvard’s library users and in himself:

There is a phenomenon in the digital world that I think is real—I don’t keep paper copies anymore. My files grow by almost nothing at this point. Everything is online and I go back to it when I need it. I don’t keep my own copy. So what in the old days would have been me taking it, making my copy and putting it back is now multiple copies, because I keep going back to it whenever I need it. The way people use things has changed.

6.2.3 New ways of accessing information.

Flecker’s final comment above that, “the way people use things has changed” points to a common characteristic of current research regarding the practice of scholarship—that there is a sense of change, but little solid evidence about what defines or characterized this change. So if the evidence presented thus far in this chapter establishes that scholars of Tibetan and Himalayan studies are increasingly making use of digitized primary resources (both online and offline), what remains is to understand whether this indicates any substantive change to the inputs of

scholarship *beyond a simple increase in numbers*. In other words, is there something new about the way scholars are using digitized materials, or are there simply more scholars using them?

One way of understanding the change in inputs is to look at *how* scholars are accessing information. There are two kinds of access that are relevant to the relationship between scholars and their resources—access *to* something and access *within* it. Access *to* resources can (and does) get faster over time and with the adoption of technologies (electronic and otherwise), but this sort of access does not really change *how* or *what* people access, only that they access it more readily. This kind of access is most often represented by the search or information seeking process and will be discussed in greater detail in Chapter 7 that deals with the research practice as a whole. Access *to* the intellectual content of a resource on the other hand—to the parts of the book that are not the physical book itself—can be transformed and transmuted through digital technologies. This kind of access—*within* a resource or text—will be the discussed here in regard to its relevance as an input of scholarship.

6.2.3.1 Magnification.

The simplest sort of transformation provided by digitization is magnification. When digitized to a high standard,⁷⁴ digital images can provide a level of access beyond what can be seen by the unaided human eye. This was not the most commonly cited benefit of digitization, but it did come up in at least one interview. For example:

International Dunhuang Project has its limits but I have been using it for a while. I can call up a large image and look at the letters or the ornamentation. Because before this I would work from microfiche, or photographic reproductions, black and white A4 plates. But there is color in this text black ink and vermillion ink and it is difficult to make that out in a black and white reproduction.

It is preferable always to go to the library and have the object in your hand itself and I do that. But, more and more I am doing that only to look at the quality of the paper, to sort out how the panels have been glued together.

Interviewer: So for the text you rely pretty heavily on reproductions?

⁷⁴ High production standards for digital images are most often correlated to high-resolution images, but lighting, accurate color balance and focus are just as important in creating a high quality image.

Yeah, because I can zoom in more than the human eye on this thing so in that sense trying to make a reading of the sentence and to get the grammar it is probably even better to work from my desktop than it is to go to the library. So that has changed radically how I do my work. I would have had to go to the library a lot more before these were up online.

A second scholar mentioned the importance of having high quality digitized images for his fieldwork, where he engages in photo elicitation⁷⁵ with communities in Nepal and northern India. “Quality is very important for the fieldwork. Beforehand, people like me who tried to do fieldwork in these areas, only had low quality images copied from books.”

6.2.3.2 Searchability.

Although the magnification allowed by high quality digital images provides an added benefit for some users, it was by no means the most important kind of access enhancement cited by users. Without fail, every scholar interviewed mentioned the significance of being able to access fully searchable texts and the impact that it has had on their work. While fully searchable texts may facilitate the location of a relevant text from within a larger corpus, each of the interviewed scholars also understood the significance of searchability as a new and expanded kind of access to text.

When a scholar works with a textual resource, that resource becomes an input of a scholar’s work most commonly through the process of reading and understanding. Once read, the text can provide the basis for a new understanding of a research question or can provide direct (often in the form of quotations) or indirect evidence to support a theory. It used to be taken for granted that in order to make use of a textual resource—that is in order for it to become an input of that scholar’s work—the resource had to be read and understood.⁷⁶

⁷⁵ Photo elicitation is at its simplest the process of inserting photographs into the interview process (Harper, 2002). It has been used by anthropologists to gather evidence and information about the subject of the photographs.

⁷⁶ This is in no way intended to imply that scholars have always read all of the resources that they have quoted or cited, or that they have always read them entirely or carefully. The central point here is that reading was the primary method of interacting with a text for humanities scholars.

One notable exception to this has been those fields of study that deal primarily with language and the structure of language, such as philology and linguistics. For these disciplines, the act of looking at and comprehending a text (e.g., reading) is sometimes less important than the simple frequency of words or the use of one word rather than another. It is not surprising then that these were the first humanistic disciplines to make use of computers to look at and analyze bodies of text. Humanists first made use of computers in the 1950's and by the 1970's a few notable projects began to appear.⁷⁷ Uptake of computers was slow for these purposes because early texts had to be hand keyed—typed into the computer manually. Once input, users could search within texts for words or phrases or across several texts. This was the beginning of a new kind of access to texts. It meant that for the first time, scholars could find words or phrases in a text without reading it. By the 1980's Optical Character Recognition (OCR) software that allowed for the automatic transcription of images of text to machine encoded text was beginning to make searchable texts more common. The result was that many more scholars began to have the same kind of search-based access to texts that was previously only available to specialists. This feature was first available on a large scale in the journal literature as database companies such as LexisNexis were the first to make use of OCR.⁷⁸ Until the late 1990's the cost of OCR software was prohibitive and the technology was not good enough to be useful in small projects that involved texts in multiple languages and fonts.

The searchability of digital texts in English and most western languages is now taken for granted, though, and there is evidence that this kind of access—to the fully searchable text of a work—is perhaps the single biggest impact that digitization is having on scholarship in the humanities. In other words, making a collection of texts fully keyword searchable seems to be the single most important factor for impact in that it is actually changing the way in which scholars interact with

⁷⁷ The Oxford Text Archive (<http://ota.ahds.ac.uk/>), for example, was established in 1976.

⁷⁸ For more information see the Optical Character Recognition entry in Wikipedia (http://en.wikipedia.org/wiki/Optical_character_recognition#History).

resources. The number of respondents to the survey of Tibetan and Himalayan scholars who perform complex computational analysis of online texts is relatively low—and average of 16%, with the highest percentage from the users of the Tibetan Buddhist Resource Center at 30%. Nonetheless, it is the aspect that over and over again was mentioned by the respondents in this research as the feature of digitization projects that is changing their work or their colleagues’—and in ways more substantial than simply accelerating the process of finding texts.

Full text searchability is changing the *intellectual* access that scholars have to texts. Clearly, searching is much more a part of how resources are located and how passages and words are found within texts, but searchability is also changing the scholar’s relationship to a resource and therefore the actual inputs of that scholarship. When asked if there were any resources that they would like to see digitized and made available online, 51% of the respondents in the survey of Tibetan and Himalayan scholars mentioned that they would like more access to fully searchable texts. Beyond simply wanting more resources, though, the interview data reveals that the scholars understand how searchability is providing a new kind of intellectual access to textual materials. A senior Tibetologist who is on the board of advisors of several digitization projects first spoke about how the most basic kind of access—images of a text presented on a screen—is useful for his students:

I think for teaching purposes, particularly in the undergraduate and graduate, post-graduate this is a very useful development. Because when I talk about Buddhist literature, let’s say, I can give them a sense of what these things actually look like and we can go to a web site. I still do my tours at the British Library or elsewhere, to show them the real McCoy, the genuine objects, but it makes it much easier for them to get a sense of what much of the materials look like. They no longer have to work in the abstract and overall that is a positive.

As the interview continued, this same scholar revealed how access to the intellectual content of a collection of text changes once it is made searchable. Speaking about a particular collection of digital texts that are not searchable, he said [emphasis added]:

...And those texts are basically scans that can be downloaded so they are not searchable materials, which is one of the main drawbacks of this type of project. The second project has been started, having the Tibetan Kanjur and Tenjur input. The main difference is the edition we have created—or are in the process of creating—is fully searchable. Which makes it of course, a great deal more interesting. I know that Gene Smith and others have produced scans of this same material but if you have a scan you can't search it. It is only good because if you don't have access to the original or you can carry the whole thing on a small hard drive so it is a step forward but **it doesn't really give us complete control or access to the materials** so looking at them you still have to read them line by line whereas with a searchable corpus this has changed.

Interviewer: So have you used the searchable version?

Yeah, yeah. We have sent this to five or six people for testing. Scholars. Everybody is over the moon and we have only done the first round of inputting and we are now doing the second round of inputting then and compare the two to fix the errors. But even so as **this is not claiming to replace the block prints but adding searching as a point of access to the material**. You can find terms, names, passages across the twenty five thousand pages of text.

It opens up whole new avenues of thought, really. Because initially when you look for a theme or a word or an event in a collection of texts you have to read the whole collection, many thousands of pages. **Now you can collate the data, you can ask different questions**, which in theory you could have asked before but it was wholly impractical to do so. Now if you want to find out how many times the term “x” appears in the whole Tenjur you can find that out very quickly and then you can extrapolate from that about the development of the Kanjur; about shared use of terminology; about the development of the sutras. You can see the overlap between various texts. All of this can then be analyzed for use in research papers.

As this scholar mentions, for he and his colleagues, searchability is no longer about finding a particular word or passage, it has created a new kind of access. As the more traditional forms of access—that is, being able to view and read a text—become ubiquitous, the theoretical bar is raised for what *access* actually means. Once the scholar has full text searchability to go back to simply viewing pages feels like a step down, or back—almost like not having access at all.

This perspective reveals a sort of irony in the community of projects for Tibetan and Himalayan studies. Although digitization projects in this field are both common and have been around for a long time, full text searchability is something new. A reliable system of Optical Character Recognition (OCR) does not yet exist for Tibetan scripts, and may never. Such software has been in use for western and roman scripts and fonts for many years and continues to improve (that is, to produce more accurate transcription). But scripts like Tibetan pose a particular problem for

OCR engines, as the small parts of characters such as small dots and lines are often read by the software as “noise” and removed. The continuity of the letters also poses a problem for OCR software because determining where one letter ends and the next begins is often difficult. What this means for Tibetan language projects is that the full text needs to be created by hand—typed in by people (see Figure 34). Usually it is typed in at least twice and the resulting versions compared for errors. This has slowed the progress of making Tibetan texts searchable. And while hand-encoded texts are prone to error rates similar to OCR, the hand-encoding process also opens up speculations about targeted tampering with texts (which will be discussed further in Chapter 9).

Figure 34: Monk creating a fully searchable version of a book. Shechen Monastery, Kathmandu Nepal.



This theme of searchability providing a new level and kind of access to text was resonant throughout most of the interviews with scholars. Although many respondents initially cited the availability of texts online as the most important impact of digitization on their work, when faced directly with a question about whether they are actually getting something new and different out of the text than they would have without having access to a digitized version, the importance of

fully searchable text came up time and again. For example in this interview with a doctoral student:

Interviewer: How is having access to digitized texts changing the work that you do?

It is just availability really, although it is beginning to change. Someone gave a lecture last year where he made use of the British Library's Kanjur (the British Library has typed in the whole Kanjur, not the Tenjur) and he had pre-access to it. And I can't remember the details of it, but it was basically just searching things, and you could see in a way the way you were orientating your research.

I am working on thirteenth century autobiography, then in the fourteenth, fifteenth, and sixteenth century people have just lifted—cut and pasted—entire parts of the earlier biographies into theirs. And it is so easy to find it. It takes me five minutes maybe to find the section and relate it into that. I think that is—not only is it going to make things faster—it is going to change the way things are done. You know you get a mobile phone and suddenly your social life changes, the way it is conducted.

Having the ability to search texts has in fact become so important for this scholar that he has hand-keyed texts himself and is currently paying others for the same services:

... I have done a number of texts now, typed them all in and it is a bit of a pain, but once you have got it, it makes it so much easier. And you can correlate things so quickly. Rather than having to look for ages for something you might have seen but are missing it. And that is very good with the Old Tibetan Documents Online⁷⁹ project and if there is a word that you think is probably old and you are finding a meaning for it. Then you can see the context.

[...] I am trying to negotiate right now having someone in India type out eight books, and I might have to do some of it myself, because it is just so valuable.

The interview prompted this scholar to think not only about the importance of searchability for his work, but about the changes in both *quality* and *kinds* of access searchability is bringing to his work:

Interviewer: Do you think you can then work with a larger number of texts? Or do you go more deeply into a single text?

That is a good question, and I don't think that will be known for a while. Let's say I am working on an autobiography, then in the old days I would more or less know it by heart. The number of times you've got to read through it and look through it. And I won't. I am only now starting to recognize phrases and incidence a bit. I won't have that familiarity at all. It is that thing of feeling the paper. And with the screen, you don't touch the book.

[...] The real change will happen when it is input. At the moment it is just scans and it is a substitute for paper. And it is just convenience. And I don't think that will affect how you work, because you have more access to more things, easier and quicker but when you've

⁷⁹ The Old Tibetan Documents Online web site (<http://otdo.aa.tufs.ac.jp/>)

got it input—that’s what I am finding—it is just so fast.

As the number of fully searchable texts in Tibetan and Himalayan studies increases, so do the expectations of the researchers. As another doctoral student explains [emphasis added]:

The better this gets, the better my field will be able to deal with this material. We have a huge amount of material to deal with. [...] The Buddhist canon is huge, thousands of volumes. **And so when you make a statement about the canon you need to be able to search through an entire section of the canon and know what is there.**

6.2.3.3 The impact of searchability across the broader humanities.

An interview in the early stages of this research with American Historian Laurel Thatcher Ulrich, current president of the American Historical Association, helped to reveal the importance of changing notions of access, and it also illustrated the significance of full text access across the broader humanities. For Ulrich, online searching of metadata (or catalogue searching) is not better and not worse than previous forms of searching and reading, it is just different. She is confident, however, that keyword searching is changing “the kind of work you can do in cultural history” and perhaps even creating two distinct kinds of access (personal communication, 12 September, 2008).

Interviews with digitization experts also indicate that all forms of searching—in catalogues and across full text databases—are on the rise in the humanities. With the accessibility brought about by full text searching, one expert expected searches of metadata in online public access catalogues (OPACs) to decline, but it hasn’t:

The second thing that is a little bit surprising is that catalogue use—OPAC use—hasn’t fallen. In fact it seems to be up a bit. Certainly a big phenomenon that is going on is that the total amount of searching going on is up dramatically, across all the systems. So we have the catalogue, which is going along like this [level]. And now that we have these other thousand places for you to look you would think that it would not go up but it still does. And so I think that the total amount of searching that is going on at an academic institution has doubled or tripled. Just a guess, based on no data. If you watched all that is going on, I would be amazed if that wasn’t true. (personal communication, 31 July, 2008)

The overall increase in searching across all systems and catalogues indicates that full text searching has not replaced metadata searches, but has amended it. Understanding this as an addition to searching, not a replacement, in turn supports the idea that it provided a wholly different kind of access, not to a text, but within it. It is that latter access that is having a dramatic impact on the work of Tibetan and Himalayan scholars.

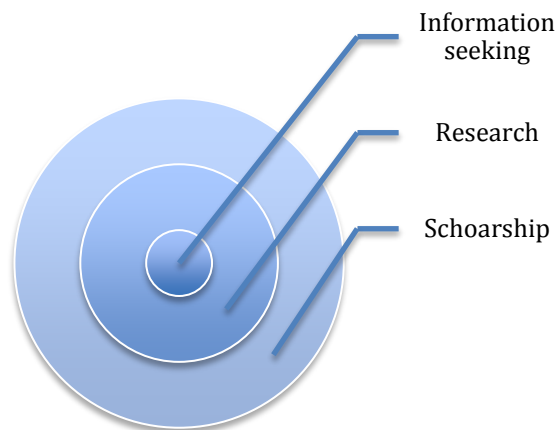
Chapter 7: Findings Related to the Impact of Digitization on Scholarship in the Humanities

Part Two: Changes in the *Practice* of Scholarship

7.1 Understanding the Research Process as Part of the Practice of Scholarship

The goal of this research is to uncover the impact of digitization on scholarship, not simply on the research or information seeking process. This chapter presents findings that illustrate changes in the practice of scholarship and it is therefore important to first understand how that practice is defined and understood here. Within the context of this research, information seeking is seen as part of the process of research, which is in turn, one part of the process of scholarship.

Figure 35: The place of information seeking within the process of scholarship.



Even though the ultimate goal is to understand changes to scholarship, it is important to summarize the existing understanding of the research and information seeking processes as found in the current literature in order to appreciate why the approach taken here is different. Although Tibetan and Himalayan studies is a conglomeration of several fields and methods, the practice of research for humanities scholars provides the majority of the context for understanding the process for the population studied here.

7.1.1 Information seeking as one part of research.

Research should be understood here to be the systematic investigation of a topic (as defined by the Oxford English Dictionary). While the process is inevitably going to vary from researcher to researcher, there are points in each person's research process that intersect with another's. The

research process can perhaps most effectively be thought of not as linear, but cyclical—with each person entering at a different point along the way depending on their discipline, topic, and core resources. Borrowing some principles and language from the information architecture literature can help define the kinds of searches that make up the research process, and perhaps more importantly, how it intersects with information seeking tools. There is a robust literature on information seeking patterns available today. Bates' work on particular forms of information retrieval such as "Berry picking" (2005) and more generally in constructing models for information seeking and searching (2002) has been significant. Numerous studies have also looked at the factors influencing information seeking behaviour such as expertise (Vakkari, 2001; Chu & Law, 2007) and domain knowledge (Vakkari, 2002; Kuhlthau, 2004). One of the most well-known applications of this literature to the web may be Rosenfeld & Morville's *Information Architecture for the World Wide Web: Designing Large-Scale Web Sites* (2002), but good summaries can also be readily found on the web (see, for example Spencer, 2006).

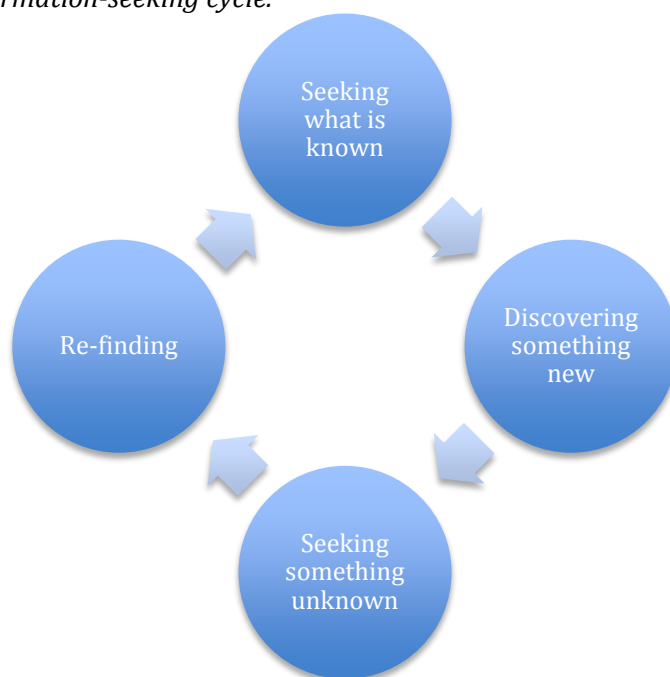
All of this literature is important for formulating a general understanding of the information seeking process, but as mentioned above the goal here is to introduce information seeking as one of several processes within the practice of scholarship. Therefore, the information seeking process will be summarized in order to move on to the more significant task of understanding its role within scholarship. There are commonly four kinds of information seeking behaviours:

- **Known-item Searching:** The user has an exact citation of a work, often found in someone else's work. This person often has either a well-formed research question or a narrow topic (e.g., a specific author or body of work).
- **Discovery / Browsing:** The user has some sense of what they are looking for, but doesn't know exactly what exists. For example, they may be looking for primary resources related to the history of the radio, but don't know about the Marconi archive. This researcher, for example, may have a well-formed research question and is looking for primary resources to support it.
- **Seeking:** This user doesn't know yet what it is that they need to find. They may have a vague sense of topic (e.g., they are looking for collections related to the creation and dissemination of new technologies) but don't yet have a grasp of names or subject

headings. This user's research question will likely be shaped by the primary resources they are able to find early in their search process.

- **Re-finding:** This user is looking for something that they have looked at before, but can't remember precisely when or where.

Figure 36: The information-seeking cycle.



Information seeking is perhaps the most widely studied and understood part of the research process and much work has been done to update the current understanding of the information seeking and research process for the digital age. For example, in 2003 Tibbo reported that “for many historians, the traditional methodologies for locating primary materials remain the most utilized. Ninety-eight percent of the historians indicated that they found materials by following leads and citations printed in sources” (p. 19-20). The myth of the humanities scholar as luddite has also long-since been debunked. According even to a 2001 report, “humanities scholars have adapted well to rapid technological change” (Brockman et al., 2001, p.vi). The same report found that “humanities scholars are used to, and in some cases even prefer, information that is delivered to their desktops” (p. vii). Yet there was recognition their use of technology at that point was an extension of existing behaviours and not necessarily something new. “...scholars are able to

harness information technologies to tried, tested, and somewhat traditional research functions” (p. vii).

7.1.2 Why understanding information seeking alone is insufficient.

These studies of information retrieval are important, but it is equally important to understand that they provide only part of the larger picture of research and scholarship. A more significant method of understanding can come from looking back to the paper presented by John Burchard in 1965 and discussed in Chapter 2 of this thesis. In describing how humanists use the library, Burchard summarized the ontological activities of the humanities scholar [emphasis in the original].

1. a humanist spends a good deal of time **and pleurably and productively** in studying a work which **may** contain something nobody has discovered before or suggest to him a new insight. The **search** for information itself is a major part of his task. It is in this sense that the library for the humanist is truly his laboratory
2. he rarely, if ever, works under the time pressure of the contemporary scientist or engineer, real or fancied.
3. he usually does not possess a battery of research assistants or even secretaries to do work and he would not trust them to do it if he had them (there have been notable exceptions).
4. the current document, apparently unlike the documents of science and engineering, is not **prima facie** of more importance than an earlier one; indeed it will often be less important.
5. except perhaps in the technical criticism of literature, the humanist has to examine products of many disciplines – perhaps, for the reason only, the literature of literature is better organized than that of most other disciplines.
6. usually, though not always, the pressure for use of any given document is felt from a small constituency.
7. frequency of use of many of the most important works is low. To remove them on the basis of such frequency would destroy humanistic libraries. This includes historians of science.
8. the humanist is strongly dependent upon browsing as a scholarly, serendipitous device. This might be less so if his library resources were more systematically organized but we can only guess.
9. **even if he could tap into every existing monograph**, the monographic literature available to him is full of holes.
10. present subject analysis is completely inadequate for him as a specialist. (p.222-223)

Some of the practices and traits that Burchard describes deal with information seeking and research and these remain a strong influence on current scholarship in this area. Yet, Burchard's characterisation remains relevant and significant today not only for its insight, but for its holistic approach to understanding the process of research. Most recent research tends to focus exclusively on the information seeking process, which in Burchard's description is only a part of the practice of research. Stone and others, for example, focus on the types of resources favoured by humanists—monographs versus journal articles; primary resources over secondary; historical materials as relevant as contemporary ones—while Burchard focuses more on upon the integral properties of how humanities scholars discover, understand, and make use of pertinent information and how these resources affect working style. Ellis' early work (1993) to bring a more qualitative or mixed method approach to the study of information seeking can be seen as a recognition of that the information seeking literature is failing to capture the research process, but while the introduction of grounded theory broadens the researcher's understanding of information seeking, it still fails to appropriately situate the these activities within the broader practice of research. A 2006 paper by Natalya Godbold takes Ellis' work further towards this goal by combining it with the models of Wilson and Dervin. Godbold's accurately identifies the shortcomings of the IR and IS literature as not taking into account other modes of behaviour, but for the purposes of this research such a model still falls short of understanding the whole of the research process, even in its most literal sense as a systematic investigation.

This research seeks to understand how digitization has changed the practice of creating new scholarship within the humanities and therefore it is important to understand that this covers the whole of the scholarship process. Burchard's work is therefore relied upon heavily to contextualizing the activities that will be described in the next several chapters with the presentation of the findings. For example, in Chapter 6, the findings detailed a definite increase in use of digitized primary resources, but more importantly uncovered a significant change in the

inputs of scholarship. Digitization, in other words, has allowed scholars faster and more convenient access to texts, but it has also changed their relationship with them. The time was taken here to illustrate in more detail the research process—and the practice of scholarship—in order to answer a similar question of novelty in regard to the practice of scholarship—is the increase in use of digitized resources simply an extension of what scholars already do, only faster and more convenient? Or is there something truly new in the practice of scholarship?

7.2 Speed, Travel, and Convenience

All of the interviewed Tibetan and Himalayan scholars first mentioned speed and convenience as two of the most important characteristics of using digitized primary resources. These changes can be seen as relatively non-transformative compared to those that will be discussed later, but are nonetheless significant.

7.2.1 Speed.

When those scholars who have spent a good deal of their career without access to digitized resources were asked about whether it had changed their work or their scholarship, the speed with which they could accomplish their research was forefront in their responses. A senior professor:

I am able to access materials much quicker than I could before. Before I had to go the library and check things out myself. And now I can do it online. One of the downsides of this is of course that I have gained weight because I don't move as much. [Laughs] So convenience, obviously. I don't use that much actually. The web is getting more and more filled with materials so that if I can't find something right away I just Google it and see what happens. But I am still sort of in between. I'm still a bit more old school than new school.

Even for younger scholars—in this case a post-graduate—the acceleration of the traditional research process was an important factor in how digitization had changed their work practice:

Interviewer: You said that this has changed the way that you work. Do you think it has changed the work that you do? Would you be asking different questions? if you didn't have access to these projects? Or is it just a matter of convenience and speed and access?

No, the latter, convenience and speed. I don't think it has changed the work. I guess the only way that it could change what I do, would be maybe in the sense that in the past if I was to go to the library in Paris I would be looking to make sense of a reading that I

couldn't see well in the photographs or the microfiche and now I have the luxury of doing more paleographic work and looking at the paper and the ink and thinking about how this was put together and maybe I wouldn't have the luxury of doing that before. I wouldn't have the time.

A doctoral student in Buddhist Studies also saw how access to full text reproductions of ancient texts could accelerate the pace of his thesis work. "I am going to be producing [a translated edition] myself, so the fact that it is half done and all I have to do is make corrections, makes it a whole lot easier."

7.2.1.1 Speed as a factor in the broader humanities.

The responses of Tibetan and Himalayan scholars seem typical in this area for those from across the humanities. Laurel Ulrich, for example, says she uses digital collections everyday—to access the rare and not so rare. The main thing it has changed in her work, she says, is the speed. She can accomplish what used to be three months' work in just a few days:

I was doing a project on Elizabeth Cady Stanton and I found a reference to her being introduced to a runaway slave in her brother, Garret Smith's attic. They referred to her as Harriet. Elsewhere I found reference to this slave as Harriet Powell. I looked her up online and found her life story from a small historical society in Upstate New York. That led me to a town in Toronto. I called the librarian [after looking her up online] and she sent me more information. That used to take me 3 months. (L. Ulrich, personal communication 12 September, 2008)

7.2.2 Travel.

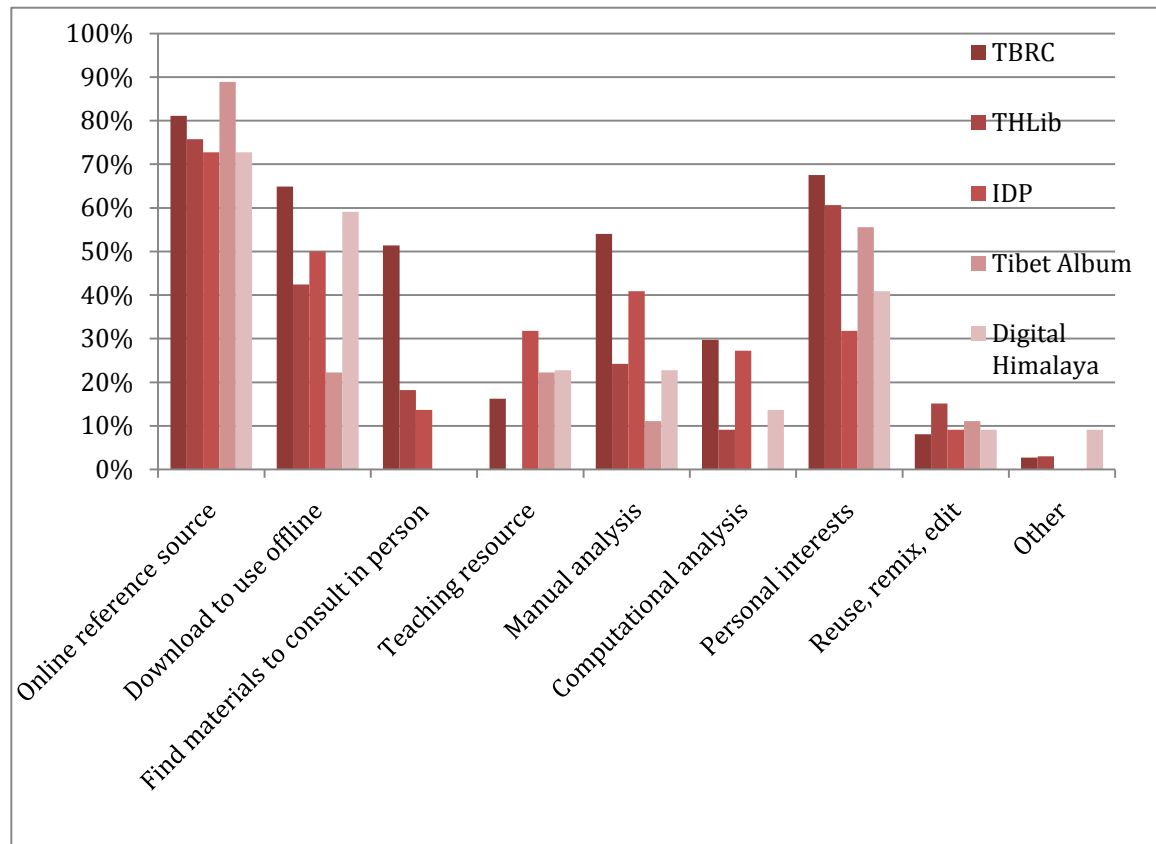
If scholars in the humanities rely on unique and rare primary resources to conduct original research, it seems logical that access to these materials online should decrease—or even stop—their need for travel. Several researchers did mention that electronic resources had changed their travel habits and patterns, although in no cases had it ceased altogether.

One senior professor, for example, felt that seeing the original work in person was essential to her understanding of it. "A really good digital copy can give you a lot," she said, but in many cases the smell and feel of a book is important to understanding how it was used. Well-worn or dirty pages can tell you which passages were most heavily read and clean ones can reveal lack of use.

The smell of a text can often illustrate the conditions under which a text was handled and read. A strong smell of incense, for example, might indicate use in a temple. Being able to view digital copies online, though, has significantly reduced the number of “wasted” research trips, according to all of the interviewed researchers. Digitization can help a scholar narrow down what they need to see in person and when an online copy or an analogue reproduction requested from the library will suffice.

Several researchers mentioned using digitized texts to target their fieldwork and research travel more precisely. Using digitized resources to “find materials to consult in person” was the third most common use amongst the scholars in the survey of Tibetan and Himalayan scholars (Figure 37), particularly for the collections that had clear text equivalents.

Figure 37: Please describe how you use these resources.



	TBRC	THL	IDP	Tibet Album	Digital Himalaya
Online reference	81%	76%	73%	89%	73%
Download & use offline	65%	42%	50%	22%	59%
Consult in person	51%	18%	14%	0%	0%
Teaching resource	16%	0%	32%	22%	23%
Manual analysis	54%	24%	41%	11%	23%
Computational analysis	30%	9%	27%	0%	14%
Personal interest	68%	61%	32%	56%	41%
Reuse, remix, edit	8%	15%	9%	11%	9%

Used in this way, the digital text is acting as an enhancement of the metadata—providing yet another kind of description. For these scholars, a digital copy was in no way a replacement of an analogue one—simply an enhancement of it, or a supplement.

Interviewer: Do you do much travelling to archives any more or can you get most of the primary resources you need online?

I find that I can get a sense of what is where but in the end I do go to archives. I don't belong to the people who think that digital replaces what is in the archives. So it is good that I can find what is where and that saves me some resources but in the end I still have to go to the library because the physical contact is not replaced by the electronic version.

Interviewer: Do you think your students will be the same? Or do you think there is a time when the digital version will be just as good to them?

Some will, some won't. It depends on what type of work you do. If you work with more conceptual content really, you might just be digital. But when it comes to the history of manuscripts or something that relates in one form or another to the actual documents than you still need to go to the library. So to a degree I think it depends on what they are using the manuscripts for. Then there is a practical question. You need to consult six or seven manuscripts and two are in Japan and three are in the United States, then I can't really encourage students to jump on a plane. So I encourage them to go see the ones that are within reach.

One interviewed professor even mentioned how digitization is changing the shape of his broader discipline—anthropology—particularly in regard to fieldwork.

My work in Nepal was “classical anthropology” I did two years of fieldwork, and then some archival work to broaden the scope, before writing the stuff up. So much anthropology now happens in the states. Half of all PhDs do their fieldwork in the United States and historically this was thought of as a discipline where you go to remote places to do your research.

Overall, digitization does not seem to have stopped scholars from travelling, but it has made their travel more efficient. “Remote repository behaviour” as Tibbo (2003) refers to the process of contacting a library or archive prior to a visit in order to insure the trip is worthwhile, is increasingly widespread. Digitization has facilitated this behaviour beyond access to bibliographic or other descriptive records. Overall, digitization has lessened the chance of a scholar showing up at a library only to find the resources were not really of use to his or her research. While digitization may have made research possible without travel (particularly for

students at the undergraduate and masters' level), it still seems that most choose to travel, and there is little sign of this stopping in the near future.

7.2.3 Convenience.

The sheer convenience of dealing with electronic files rather than paper books was also cited as a benefit of working with digitized texts—particularly by those who would otherwise have to work with multiple sutras or large format editions. This question of convenience may be magnified in Tibetan and Himalayan studies, as the analogue texts are often quite awkward and unwieldy. The Tibetan book form (both for historical and modern books), or *pecha*, is a series of long (often as long as two feet) and narrow, unbound leaves. The leaves are printed on both sides and placed between two stiff boards for storage. The size of the volumes means that a reader requires a large, flat surface to read and work with a book. The lack of binding means that the leaves can easily become disarranged or lost (Figure 38).

Figure 38: The Tibetan book form can be large and often unwieldy.



The convenience of not having to deal with these unwieldy objects was prevalent in users' responses. A doctoral student:

Interviewer: How has access to digitized resources changed your work?

It is kind of obvious really.

Interviewer: Why do you think it is obvious?

Who wants to carry books around, and paper, it is so much easier really. I was saying to [my boss] this morning. I have been working on a bit of translation the last month or two. Yesterday, I don't think I opened a book. Last year I worked for a fashion company, selling stuff. The boss was about my age, the rest were all under twenty-five. I looked around one day—this wasn't deliberate—but I looked around and there was no paper in the office, even the accounts. There was no paper. And it was just completely natural. It wasn't like well, let's try to keep down our paper use, there was just no paper. There were bins, but there was no shredder, it was only bins for sandwich bags and rubbish. It is quite funny.

Interviewer: Have you noticed a significant change from when you started your studies until now?

Yes, that has just happened. I started in 2003, so it is getting more and more so. Even at Harvard I had lots of books and I like books. But I just don't use them. It hasn't gotten to the point where I have started getting rid of them. But I knew someone at Harvard who was doing this very deliberately. You know scanning them one by one and getting rid of them. The translation business has ceased to be a book business really. Correlating is another. Let's say I am working with four texts and trying to correlate them from different centuries, I wouldn't do that now. I would just search them and with cut and paste you've got them, you can have them, whereas before you would have all these books laid out and going from one to the other. And that is great, I love doing that, but now it is so much faster.

For a new generation of students, working with digital texts seems to be easier and more intuitive than working from paper. For students in Kathmandu, Nepal at the Centre for Buddhist Studies, texts are cheap. They are printed in China and are readily and inexpensively available. But, the director of the centre says, it does not keep them from using the electronic versions available through the *Tibetan Buddhist Resource Center*. "The young students are a new generation," he says, "they prefer to use the digital."

A senior professor of Tibetan and Himalayan studies in Oxford also noted the same behaviour in his students:

The Bodleian is great. They buy access to the *Tibetan Buddhist Resource Center* and always keep it up to date, which costs 8000GBP every time there is an update. That means free access including downloads. Many of my students use this...They are an invaluable resource.

7.2.3.1 Transformation through convenience.

Although most of the examples mentioned above about the convenience and speed of working with digital texts are non-transformative, (that is, they accelerate, but do not fundamentally

change the kind of work or the methods of work that researchers are engaged in), some respondents did hint at how this acceleration itself is beginning to transform the work of a new generation of scholars. A lecturer:

Interviewer: Does this encourage your students to seek out and work with manuscripts more?

Yes, absolutely. Yeah, they get a feel for it. Because you know sometimes working with manuscripts can be a little bit scary. If you have never worked with that kind of thing (points to hand-written text) and you were used to block books for example, things in this kind of script for instance. Students don't usually learn this script, for instance, they learn the printed script, so this way they can much more familiar with a range of things and they tend not to be scared of them.

Early engagement with primary resources may be allaying students' worries about working from primary resources in foreign languages, but there are still some latent fears. Most of these have to do with the ability to find what is needed. An advanced doctoral student:

I definitely was scared of the whole research, resource, digital thing. [A friend of mine] does these huge searches and I am still a bit baffled. I knew it then as a fear, I didn't know how to use it. I still had to grow a bit and know what my particular interests were. Part of the problem when you begin...what is a library other than a place to get a book and what is research? So it is very hard and I certainly have learned a hell of a lot more about research as I have gone on. But I and even my professors—not all of them—feel this kind of fear about technology and the difficulty of finding things through this technology.

Interestingly, though, this same student felt that fears over finding what information online was actually less than fears of finding things in the pre-digital environment:

But there is even more fear about how to find things in a dusty old card catalogue in the corner of a room somewhere and the impossibility of that. This at least seems possible but there is still some paralysis with using all the resources because there is nobody really clear in your area to explain it to you. That is why when I first do things, the first thing I do is ask a friend. Or people who know how to do it. Technology is great, but we need to understand the need for human interpreters of that and not just generalized knowledge.

Each of these conveniences—speed of research and information seeking, minimization of travel, the discreteness of the electronic format—represents “improvements” upon the traditional information seeking process pictured in Figure 36, rather than fundamental changes or transformations to the characteristics or quality of the practice of research. These were also the

qualities that first came to researchers' minds when asked about their interactions with digital texts, but when questioned further each mentioned a way in which their scholarship had been transformed. For example, while discussions of full text searchability most often came up in the context of providing a new level of access to a text, one post-doctoral researcher did describe specifically how it had changed his research practice.

Interviewer: So are there any other collections that you use that are important to your work?

You are just looking at digitized text, right, as opposed to input or transliterated texts?

Interviewer: No, I am looking at all of them, actually.

Oh, that's even more important then, that changes everything, that has accelerated the pace of research more than the digitization of the manuscripts in my opinion. Old Tibetan Documents Online, for example. The most important thing about that for my work is that when I find a word that is not found in any dictionary, that has never been translated or has been translated five different ways depending on context...what I can do now is type that word in, in transliteration, and hit search and all of the texts—forty or fifty of them now—have been input in such a way that you can search.

Interviewer: Which site is this?

Old Tibetan Documents Online. Here I can show you. So, here is the text that I am working with now. So you see the whole thing transliterated. At the top it gives you references. So these are all the ones that have been input. The protocol is that you have two scholars in the library transliterating, not working from previous transliterations. The most exciting thing is the search function. It is the contextual concordance. So if I want to know about a word I just type it in there and hit search. [Respondent performs the search.] One hundred and five results. I can quickly see the context around it so I can tell if this reference is going to be useful or not.

What it does is lead to what I call a cul-de-sac method of research, where I want to find out the meaning of this word—say 'mu'—and then looking it up in context I find it is always occurring with this other word, 'cha.' So I think, ok to suss this out I need to find out what this other word means. So I put it in and the same thing happens. So it kind of lends itself to academic curiosity and building up a lexicon, a lexicon that has not been there before. And that has been the most important contribution to my work.

This is the first evidence we have seen in these findings that indicate a fundamental change in the research process—and one that likely would be too difficult and time consuming in an analogue research process. This essentially new method of information seeking is unique to the full text environment. It combines elements of known-item searching with browsing and discovery, but in other ways remains quite unique.

7.3 Collaboration

Section 2.2.1, above, provided a brief description of the current and past understandings of collaboration in the humanities. It is particularly important to look at this question of collaboration and communal work habits with these factors in mind, and accordingly to try and judge not whether digitization has suddenly brought about a social aspect to a formerly solitary discipline, but to understand that the baseline for collaboration and communication in humanities scholarship is set by the traditional forms of scholarly communication as enumerated by McCarty above and only then to make an assessment regarding the changes brought about by digitization.

With this in mind, the findings of this research can be seen to point first to a decrease in the amount of time between communications—rendering formerly asynchronous conversations virtually synchronous; and second to a perceived increase in cross-disciplinary collaboration.

The most blatant support of collaboration came from the *Tibetan and Himalayan Library* (THL), which has incorporated features to foster and support collaboration as a basic principle in the construction of both its tools and collections. About the distributed collaboration model of the *Tibetan and Himalayan Library's* Historical Tibetan dictionary

(<http://www.thlib.org/reference/dictionaries/tibetan-dictionary/>) (Tibetan and Himalayan Library, 2010b) the project's director says, "it allows humanists to work alone, but builds a collaboration of their work." In order to encourage collaboration, he points out, it is necessary to preserve the traditional structure of credit and reward and in his site's dictionary the user maintains access and control over their materials, but they are combined to make the end product stronger. "Give tools to users that they need, and you will encourage them to contribute," he says, and thus he has provided a method of work that mirrors McCarty's model of classic scholarly communication, but accelerates the conversation. Users work in the manner they are used to—alone or not—to create or contribute entries to an ontological and etymological dictionary of Tibetan words and phrases. In doing so, they are also contributing to a live web publication that immediately shares their

results with others. The speed of production and reward is something that is enabled by the digital networked technology, as is the number of contributions it allows. Traditionally, dictionaries are the work of one or several editors who write and compile entries.⁸⁰ Entries in dictionaries are not generally credited to individual authors. The THL dictionary transforms the speed of production as well as the power structure inherent in previous forms of production. The sense that this is a collaborative publication is apparent immediately in the interface of the dictionary, with small icons representing different authors (Figure 39, below).

Figure 39: An Entry in the Historical Tibetan Dictionary in the Tibetan and Himalayan Library. Each small person icon represents a contributor.



TERM: ཐོད་རག་ལ།

THL transliteration: thod rgal/
 THL transcription: tōgel

FUNCTION: Common Noun

THL DICTIONARY

 HIDE CONTRIBUTORS
  HIDE SOURCES



PRONUNCIATION: togel (THL Simplified Phonetics)  

ETYMOLOGY: Basic Syllabic Etymology - Literally "skull-traverse" or "crest-traverse," this syllabic meaning apparently indicates directly crossing the crest of a hill or mountain rather than the easier but more roundabout and gradual path of winding along the mountain stage-by-stage to gradually go through a pass. All of the various meanings of the term derive from that basic sense of directness vs. more gradual approaches.  

CLASSIFICATION: meditation

USAGE CONTEXTS: Literary (language context)
 Classical Literary (literary period)

1: A term for one of the two main contemplative systems in the Seminal Heart (snying thig) tradition of the Great Perfection (rdzogs chen), the other being "breakthrough" (khregs chod). It signifies a type of cultivated spontaneous imagery culminating in visions of maṇḍalas of Buddhas. It is described as a direct and quick path; hence, the etymological root of the term.  

TERM TRANSLATION: direct transcendence 

RELATIONSHIPS: ཐོད་རག་ཚེད་ (paired term) 

USAGE CONTEXTS: Colloquial and Literary (language context)

LITERARY QUOTATION:  ལམ་ཐོད་རག་ཏེ་དབང་པོ་རིམ་གྱིས་པ་རྒྱལ་ས་རྩ་རྒྱུད་གི་གནད་བཟུན་ནས་གྲོ་ལ་བར་བྱེད་པ་སྟེ། ཐོད་འགོ་གསུམ་དང་རྩལ་རྒྱུད་དབང་པོ་ལ་སོགས་པས་མཛད་སྒྲུབ་རང་གནད་ལ་འབེབས་པའི་བར་དུ་བྱས་ཏེ། ལུས་གནད་དང་། སྒྲིའི་གནད་དང་། རྩལ་གྱི་གནད་དང་། རྒྱུད་རིག་གི་གནད་བཟུན་ནས་ཉམས་སྒྲུབ་དང་སྒྲུབ་པས། རྒྱུད་བཟོད་དུ་ཕྱིན་ཏེ་གྲོ་ལ་བར་བཟུན་པ།  

⁸⁰ The Oxford English Dictionary (OED) is a notable exception of this where editors compiled entries submitted by numerous users.

In this way, this collaborative model from the THL seems unique in successfully pulling together authors from across the field of Tibetan and Himalayan Studies. The same use of digitization to foster and facilitate collaboration could not be found in the data gathered from interviews with digitization experts in the broader humanities. By most empirical accounts, for example, the *Decameron Web* (http://www.brown.edu/Departments/Italian_Studies/dweb/index.php) is a success—it has numerous inlinks, gets a steady and high rate of visits, and is regularly cited. Nonetheless, the project’s director sees it as a failure because his primary goal was to use the site as a platform for collaboration amongst his peers. Although officially there have been over twenty contributors to the *Decameron Web* most, the director admits, have been graduate students who have been asked (or paid) to contribute to the project. “Individual habits are changing slowly,” he says in regard to the use of web-based projects in Italian studies, “but collaboration is not changing—humanists still do not collaborate for the most part.” In this way, the examples from Tibetan and Himalayan studies seem to stand out significantly from the rest of the humanities.

Certainly the technology can facilitate collaboration, but as the *Decameron Web* example illustrates, technology alone cannot get people to collaborate or contribute to a communal project. This points to a second important characteristic of digitization projects in Tibetan and Himalayan studies with regard to collaboration—there is a pervasive commitment across the discipline to working collectively toward the good of a freely available resource. For some, there seems to be a general sense of obligation to work on and contribute to collaborative projects. There is a general moral obligation toward the work that they do. This manifests in many ways—with scholars speaking of a “moral calling” and a sense of duty (see section 9.2.2.5)—but in some cases the direct result is collaborations (i.e., scholars contributing their time and effort to a project that is not lead by them and often for which they will receive little or no credit or reward.) While the

theory put forth by the director of THL about needing to provide the means for recognition and reward in collaborative projects may ultimately prove true, for the time being these scholars seem to have a strong sense of community and communal responsibility regardless. Speaking of a collection of hand-keyed texts that is freely available online, one young scholar said:

I have been working with them a little bit, but not as much as I should, in terms of inputting texts so that I can use them and others can use them.

This scholar speaks frankly about contributing to this project as a duty or responsibility, as something he “should” do, despite it being tangential to his actual work. While this represents a deviation from the process of scholarship, this does not necessarily represent a novel process in scholarship. It is simply making something that a scholar would do for himself or herself available to others. The technology makes it possible for the results to be seen immediately, but it seems to be the communal responsibility that is inherent in Tibetan and Himalayan studies that makes it ultimately successful.

This sense of obligation to a larger community can be seen as holding the possibility of removing what many referred to as the strongly embedded “silos” of the humanities.⁸¹ Many see these “siloes” projects as a digital manifestation of traditional scholarly communications. One interviewed Tibetan scholar thinks these silos have emerged in digitization projects because they represent the strong sense of individualism, which still dominates the humanities.

Scholars and project staff in Tibetan and Himalayan studies are optimistic that change is on the horizon, but as of yet, there is little evidence of truly decentralized or collaborative projects. Each of the embedded cases studied here, for example, represents a discrete project. Two of the projects have shared grant funding in the past and still share content today. While this and the collaborative dictionary mentioned above can be seen as evidence of collaboration, for a field

⁸¹ Lisa Spiro, director of the Digital Media Center at Rice University’s Fondren Library reflects on the problem of silos in her blog (<http://digitalscholarship.wordpress.com/2009/06/01/examples-of-collaborative-digital-humanities-projects/>). “Too often digital resources reside in silos, as each library or archive puts up its own digital collection. As a result, researchers must spend more time identifying, searching, and figuring out how to use relevant digital collections” (Spiro, 2006).

where each of the project directors knows one another personally, the projects remain remarkably siloed. While each of the project directors who were interviewed saw the possibility for collaboration with another, their immediate goals were still to complete their own project, using their own methods. The curator of Tibetan collections at a major national library thinks that all of these projects will eventually come together. “There seems to be a strong sense of collaboration across the community,” he says. In the same breath, though, he also mentioned the difficulties and factions that impair such collaborations: that the *Tibetan and Himalayan Library* can, for example, do so easily what other people are applying for grants to do (preventing the smaller projects from being funded); and that the Buddhist scholarly community has a different approach than the Tibetanists. Still, there was some evidence of optimism, though. One project director believes that close-knit collaboration is just around the corner:

One [surprise I have found is] that in the academy we are dominated by disciplinarily and insularity, our primary sense of belonging being to these disciplinary departments, these guilds. And one thing that has surprised me about digital technology is how much it has created a place for free intellectual exchange across those boundaries. I don’t see it happening in a lot of other places.

7.4 Widening Audiences

In his description of the characteristics of scholarly communication in the humanities, Willard McCarty speaks of “the crucial importance of the audience” (2005, p.13) as being central to the humanist. Yet, the primary form of output for the humanist has for many years been the scholarly monograph and the journal, and with print runs small and prices of both often prohibitively high, certainly the expected audience for these works must be small. Even if scholars are working as McCarty states, “*non sibi sed omnibus*, ‘not for oneself but for all’” (p.13) the primary call and response of scholarly communications in the humanities has long been exclusively between scholars.

A fundamental change to the scope of intended audience becomes possible with publication on the web. This change is for the most part enabled by the large discrepancy in the cost relevant to

the size of audience. To make something freely available to the public on the Internet costs the same as making it available to a limited audience—online publishing removes both the notion and the associated costs of scaled print runs. So with the ability to make a project available to the world for the same cost as the making it available to a smaller audience, many digital project directors in Tibetan and Himalayan studies are eager to open their work and their collections to the world. A majority of the interviewed project managers and directors spoke of two audiences that prior to digital technologies would have been considered marginal or not considered at all—1) the general public and 2) the cultures from which these materials originate. For the first time, scholars are realizing that they can genuinely reach the “general public.” At least two project directors spoke directly of wanting their collections and tools to be widely used by a non-scholarly audience. While many digitization projects think of the general public as a sort of secondary or serendipitous audience, for the projects studied here, the needs of the general public were considered from the beginning. As one project director said, his site “is intended to be something of service to the broader public, it is not intended to be a specialized scholarly web site.” For this particular project, designation of this broad audience as a primary target has resulted in a significant investment in a technical infrastructure that could present parallel data to both a scholarly and non-scholarly audience:

One challenge is to deal with that complexity of academic expectations that no one else really gives a damn about. They just want to know what the name is. We want that, but we also want it to be presented in a form that would allow others to use it. [...] And then the third thing... transliteration of Tibetan words is unreadable. All these unpronounced prefixes and suffixes, but you need that for accuracy. So what we did was create these options in the textual materials and you can say I want a popular view or I want a scholarly view. And if you want a popular view it replaces the transliteration with transcription. A simple thing, but it means a lot of overhead.

While designating the “general public” as a core audience from the beginning will change the structure and output of a digital collection, it also has the opportunity to change the participants in the scholarly communication that surrounds those resources. To go back to McCarty’s notions of

scholarly communications, there was also a sense from several project directors that opening up to these wider audiences changed the very participants of these conversations.

... it allows us to visual communities and networks and space and this potentially encourages us all to think more in those terms than just our raw cognitive structure. We see these videos, we see people talking, we see the geographical diversity that we are working over. We see a social network of people and all these things just remind us that these are real people and diverse communities. I think for projects that are necessarily about social agenda or focused on a community there is this social side to computing. Especially with web 2.0, with people leaving comments, with soliciting feedback from an audience, which again is new. I don't think most academics were getting letters from the public and I was at a conference this weekend and someone was giving a critique of academic publishing and they said I can publish an article in a journal and I won't hear anything for the next five years, and I can put a blog online and forty minutes later I have gotten thirty emails about it. Why would I want to do the former if my goal is to get exposure and engagement?

While the awareness of being able to reach the general public through the web has manifest in particular "public-friendly" architectures for some of these projects, there is also a much more specific audience that has had an even wider influence over the structure and design of all of the projects in this field. Each of the projects in this area are making available primary resources from the Himalayan region, and every project director mentioned that they did this in part to give these materials back to the people from which they came. The issue of repatriation or "virtual repatriation" will be discussed in detail later on, but here will be analyzed in terms of understanding the indigenous cultures as a new audience for these works.

To understand how this new target audience is changing the work of Tibetan and Himalayan scholars, first it must be established that this audience is in fact something new. Anthropologists have long engaged in photo elicitation (whereby they bring early photographs back to an ethnic groups to elicit responses and gather data about the people in the photographs), but there has never been an expectation that the people of that culture would read the anthropologist's subsequent monograph describing their experiences and presenting their findings.⁸² There was never a sense that anthropologists were writing journal articles that intended to convey something

⁸² Which is not to say that they didn't, just that there wasn't the expectation.

back to the cultures that they were describing. Yet in the case of the digitization projects studied here, every project director and manager—without fail—mentioned making these materials available to the cultures from which they came. When asked about the audience for their project, one staff member said:

In terms of the audience, it was scholars who were interested in the material, the general public, and in particular the Tibetan exile community. [The project director] was in particular very keen to make this available to that community. So there was quite a lot of discussion of what platforms would be usable in Dharamsala and so on and on older operating systems.

The flip side to broader participation, of course, is a loss of control over how and when these scholarly outputs are used and interpreted. Many involved in digitization projects expressed some initial concern about opening up their projects to the public, particularly when they contained anthropological materials:

Interviewer: You said that your goal was to open this to the general public, did that influence the way you went about digitizing or putting together the web site?

I suppose it did. I mean the big psychological and social cultural challenge was the big leap from the usual scholarly production, which is to a confined and specified audience. And trying to imagine a generally audience—you don't know who they are and how they are going to interpret things and you can't expect any charity from them or any understanding of the content from them, or any background information. And this was brought home to be by a solitary story told to me by someone called [illegible]. He worked many years ago with Margaret Mead to do a big television series called *The Birth of Man*. It was gong to be used in primary schools. It was a many part series. He was an expert in Eskimos. And when they made it, this nearly closed down the National Science Foundation. And Margaret Mead was asked to come and answer questions before the Senate, because this was based on a sort of Darwinian interpretation of the history of man and in the Bible belt they didn't like it. So schools complained about the clubbing of seals and the killing of deer and showing it to seven and eight year olds was traumatizing. So he was summoned to answer questions as well. And so he told me, he warned me, he said you can say one thing in a lecture in Cambridge to students because you know how they will interpret it, so be very careful. So this was the main thing that [my project manager] and I had to face. There were other scare stories, stories of perfectly usual anthropological photographs of maidens in Africa not wearing much being taken in to pornographic sites and this kind of thing. And so many of my colleagues were very cautious.

While the concerns were common though, negative reactions or abuse of the content of online collections was rare. Most examples of project staff being asked to remove something from the web had nothing to do with the intellectual content within. For example:

So I do remember feeling rather nervous with my own web site as well as with [our project] that we would get a stream of people complaining about this or that. But never, about anything. We have had one person ask to take down an interview because they were being stalked, but out of one hundred and fifty interviews and I have now five hundred, maybe six hundred pieces on YouTube. Now YouTube is much more difficult. Academic web site you expect some context and background of the people who come and look at them, but I put most of my material up on YouTube and I've done a little bit of analysis of it which is on my web site. About one in twenty things that I get says you are a lunatic or something or this is a travesty or you don't know anything about Cambridge or your views on this are uninformed or whatever it is. Or about the technical quality of it or something, so you do get bits of abuse but ninety percent of it is constructive and thoughtful and I have had some really good comments.

Overall the consensus from project staff and scholars was that being able to open these collections to the general public—to the world—is a very positive thing.

So it reaches a much wider audience that I could ever have done in Cambridge, and that interests me. And I'm getting feedback—I went on Saturday to a reunion of all of the people I have worked with in Nepal—there are thousands of them over here. And a number of them came up to me and said they had been watching my YouTube videos, that they were from that village. They were in tears, they loved it and could I put up more stuff. And when I go there [to Nepal] I get a little bit of this although in Nepal, outside of Kathmandu, the Internet speed is still quite slow.

So I've never from the community itself—and I've got about 50 videos up on YouTube of this community—had anything except really favorable comments. We love this and we are in America now and the diaspora. We are creating an imagined diasporic cultural community for small ethnic minorities. It is definitely affected by this sort of materials because although they are putting up their own stuff ours is slightly richer and slightly different and more historically embedded.

Several scholars recognized immediately the novelty in opening up what were formerly considered resources only for academics to the general public.

I'm a little bit skeptical about scholars in a way because I think that much of scholarly production in anthropology in a way is increasingly removed from both the people from whom it originates, whether that be a tribal people in Nepal or the beer drinkers in Milton Keynes. Are they ever going to consume your research? No. And secondarily, I was interested by the mandate of anthropology, which is I suppose to document something and

explain something about the diversity of human experience but also make it accessible and also show in that diversity the common links. So I was delighted to see that we were getting more interest from the public—whatever that be—but non-scholarly people. Almost more interest from the public than from scholars. So that was interesting. When was the last time that someone from the public interested in another part of the world went to an academic web site? No, they went to the BBC, they went to Google, they went to Yahoo!

One of the early technical developments in this field that has made this wider audience possible for the text-based projects is the creation of a Tibetan Unicode font. This has made the encoding and display of Tibetan characters possible across multiple software packages, browsers, and systems. But while Unicode makes the display of Tibetan fonts possible, providing metadata in Tibetan still requires translation. With the Tibetan Diaspora in mind, the *Tibetan Buddhist Resource Center* provides metadata for all of its texts in transliteration (Extended Wylie) as well as in Tibetan. In order to provide both of these formats the data for each record needs to be encoded twice (Figure 40).

Figure 40: A TBRC record in Tibetan (left) and transliterated (right).

བཀའ་འགྱུར (མྱོག་ཕོ་བྲང) བེས་མ	bka' 'gyur (stog pho brang) bris ma
bka' 'gyur (stog pho brang) bris ma	bka' 'gyur (stog pho brang) bris ma
Outline created by paldor	Outline created by paldor
- འདུལ་བ (ཀ - ར) - འབྱུང (ཀ - མ) - ཕལ་ཆེན (ཀ - ཆ) - དཀོན་བརྟེན་པས (ཀ - ཆ) - volume 35, dkon brtsegs (ka) - volume 36, dkon brtsegs (kha) ▶ volume 37, dkon brtsegs (ga) - volume 37, dkon brtsegs (ga) - བྱང་ཆུབ་སེམས་དཔའི་སྡེ་སྒྲིལ་མཛོད་ - དགའ་བོ་མངལ་དུ་འཇུག་པ་བསྟན་པའི་མཛོད་ - གཞུང་མོ་དགའ་བོའི་མཛོད་	'dul ba (ka - na) 'bum (ka - ma) - phal chen (ka - cha) - dkon brtsegs (ka - cha) - volume 35, dkon brtsegs (ka) - volume 36, dkon brtsegs (kha) ▶ volume 37, dkon brtsegs (ga) - volume 37, dkon brtsegs (ga) - byang chub sems dpa'i sde snod kyi mdo - dga' bo mngal du 'jug pa bstan pa'i mdo - gcung mo dga' bo'i mdo - volume 38, dkon brtsegs (nga) - volume 39, dkon brtsegs (ca) - volume 40, dkon brtsegs (cha) - nyi khri (ka - nga) - khri brgyad stong pa (ka - ga) - khri pa (ka - kha)

Despite theoretically doubling his team's workload, the director of the project is committed to providing records in Tibetan because, "their goal is to make catalogue entries useful to Tibetan people." For the same reason, he feels that the project cannot commit to using the records created for the same materials by the Library of Congress. "[The Library of Congress] might put all one hundred volumes of something on one record, but that isn't helpful." So instead, the TBRC team have catalogued the canon, in detail, volume by volume. With the intention of making these materials available to the diaspora, there is also recognition that this has an impact on a scholarly audience. "This changes the way we do our studies," says the director, "these outlines allow us to easily make connections between topics and authors."

This sort of widening of audience is not necessarily new with the introduction of digitized texts, but is possibly accelerated by it. Without trying to analyze whether such movements are technologically or socially driven, the introduction of digital formats into libraries appears linked with a widening of audience. Interlibrary loan of materials represents the earliest steps towards reaching new audiences and while these services are well established, their reach has always been limited. Beginning in the 1970's, however, projects to microfilm parts of library collections became widespread. The easy replication of microfilm meant that libraries could purchase large sets of replicated collections to cover particular topic areas that needed support. One project director saw the widening of his audience in this tradition—as the extension of process that began with microfilming to support scholars around the United States.

If we take a longer run on that and look at the microform activities, it really was to support faculty in the states. [My home institution] never really factored in. As soon as the web made it possible, though, our audience grew to the whole world and we tried to remain conscious of that as we have taken new directions. For this new project, for example, we have tried to consult widely in the sub-continent, all over the world. The needs of the faculty here only come into play with the federal funding.

As pointed out by McCarty, humanities scholars have always felt their work to be *non sibi sed omnibus*, 'not for oneself but for all' (2005, p.13). What is different and new about the changes

brought about by web-based work is that for the first time this phrase can be considered literally. “All,” for the first time can mean that a global audience—the general public—can have direct access to the primary resources and the scholarship itself. One of the unique characteristics of the case of Tibetan and Himalayan studies seems to be the inclusion of this broad audience from the beginning of the digitization projects. This wide sense of audience has influenced the workflows and architectures of the projects, but also the self-reflexive nature of the scholars involved who no longer see only their colleagues as the audience for their work.

Chapter 8: Findings Related to the Impact of Digitization on Scholarship in the Humanities

Part Two: Changes in the *Outputs* of Scholarship

The third sub-question leading the enquiry into how digitization is changing scholarship in the humanities deals specifically with changes in the outputs of scholarship in Tibetan and Himalayan studies. Much could be said about the outputs of scholarship to begin with and this section will admittedly rely on some common generalizations (hopefully none of which are too controversial) in order to move this discussion forward. Recognizing that there are always exceptions, a baseline must also be set in order to establish any evidence of change. For the purposes of this research, the following assumptions have been made regarding the outputs of humanities scholarship:

1. That the work of humanities scholars has in the past been generally in a textual prose format. Monograph and journal articles are likely the most common, but humanists have also commonly produced bibliographies, catalogues, abstracts, translations, edited volumes and other forms of textual documentation.
2. That the published work of humanists takes the form of an argument, rather than a presentation of data or evidence. As McCarty summarizes, “to varying degrees within the humanities themselves, this argument is the locus of action: the research itself (e.g. in philosophy) or its synthesis into a disciplinary contribution (e.g. in history) takes place during the writing, in the essay or monograph, rather than in a non-verbal medium, such as a particle accelerator.” (2005, p.12)

These two ideas, admittedly over-generalized for the purposes of exposition, will be used to frame the analysis of changes in the output of scholars in the case at hand.

8.1 Formats

Taking the notion of textual outputs as the starting point or baseline in the humanities, this section will be used to illuminate changes in format. The description of the outputs of scholarship as of “textual formats” rather than books, monographs, journals, etcetera, was a deliberate attempt to move this discussion away from a focus on e-journals or e-monographs. These formats can be viewed as an extension of traditional publication methods and what this research aims to provide

is evidence of something truly new. In other words, it is important to separate out the new forms of scholarship from the replication of existing scholarship on the web. Digitization itself is the latter—replicating or copying something that already exists and distributing it on the web. What can be done with digital formats, however, holds the possibility for the former—a truly new kind of scholarship.

In a number of simple straightforward ways, there is strong evidence of changes in scholarly outputs within this case. As one faculty member mentioned, the early exposure to primary resources written in Tibetan has made his students far more comfortable writing in Tibetan themselves.

They tend to write in Tibetan font now, instead of transliterated roman. I realize how old fashioned I am because it feels slightly shocking to me to see them produce all of this stuff in Tibetan. There are some problems with that method, notably that the technology for representing complicated edits is not there yet. But there is no question that the use of Tibetan font is going to catch on.

In other cases, the functionality brought about by certain kinds of digitization (in this case the ability to search texts) has rendered some formats obsolete. For example, it no longer makes sense to assemble or print costly indices. These specialized publications have limited audiences to begin with, and the production of even small print runs seems impractical when print on demand is available, or even just electronic distribution. As a senior faculty member in Tibetan and Himalayan studies points out:

Once the stuff is searchable, then the possibilities take off completely. The effort of producing something like this [holds up the syllable index from a multi-volume work] is enormous, and it is just not that useful. You can get the same results in half a minute just by going on the computer.

Instead of making these ridiculous lists which are expensive and time consuming and so forth, you can find out an awful lot about the content of the material, so it is not just about the ease.

From the standpoint of format, there is no doubt that what is being produced and made available by many of the scholars in Tibetan and Himalayan studies is truly new. The examples above—of

more writing in Tibetan and fewer printed indices—are small but omnipresent examples. On the other hand, while not widespread, one of the most transformative examples of changes in format can be found in the *Tibetan and Himalayan Library*. It is a project that combines floor plans, still images, and videos to provide virtual tours of Tibetan monasteries (Figures 41 and 42). The project is the result of a collaboration between a Tibetan scholar and an architectural historian.

Figure 41: Interactive floor plans of Meru Nyingba monastery, Tibet. Embedded in the floor plans at left are panoramic images of the monastery, shown at right.

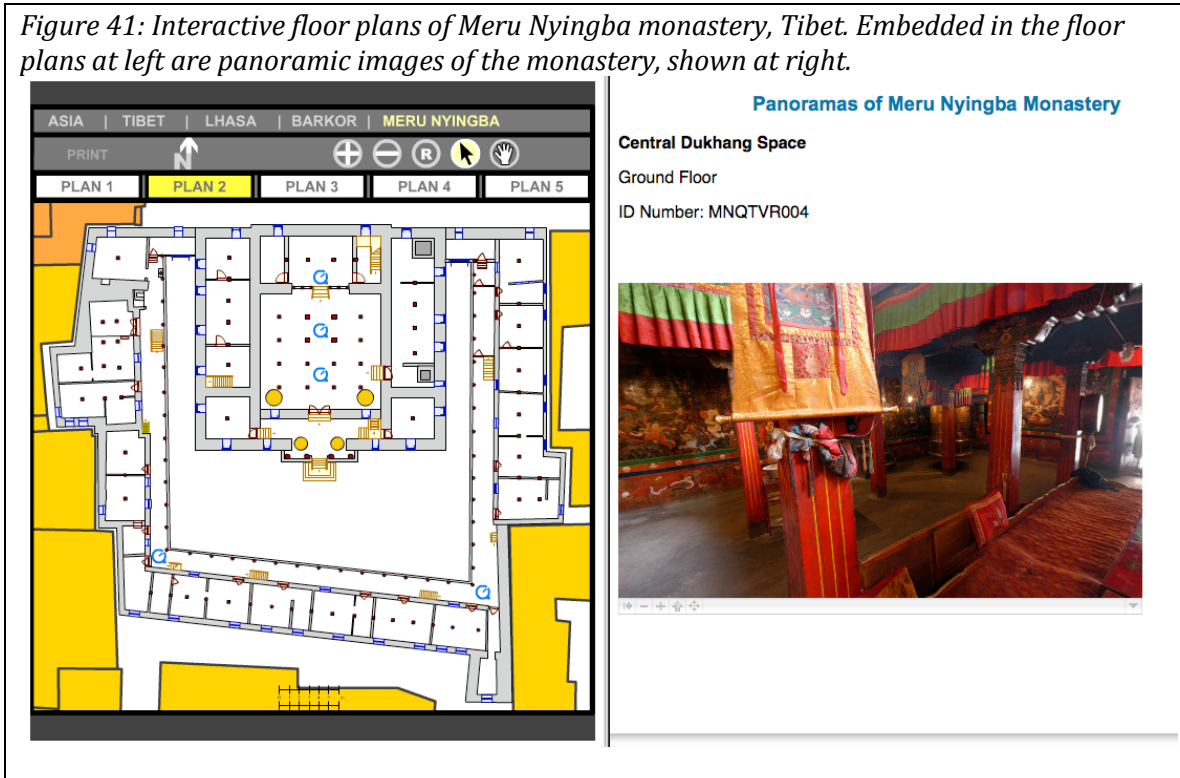
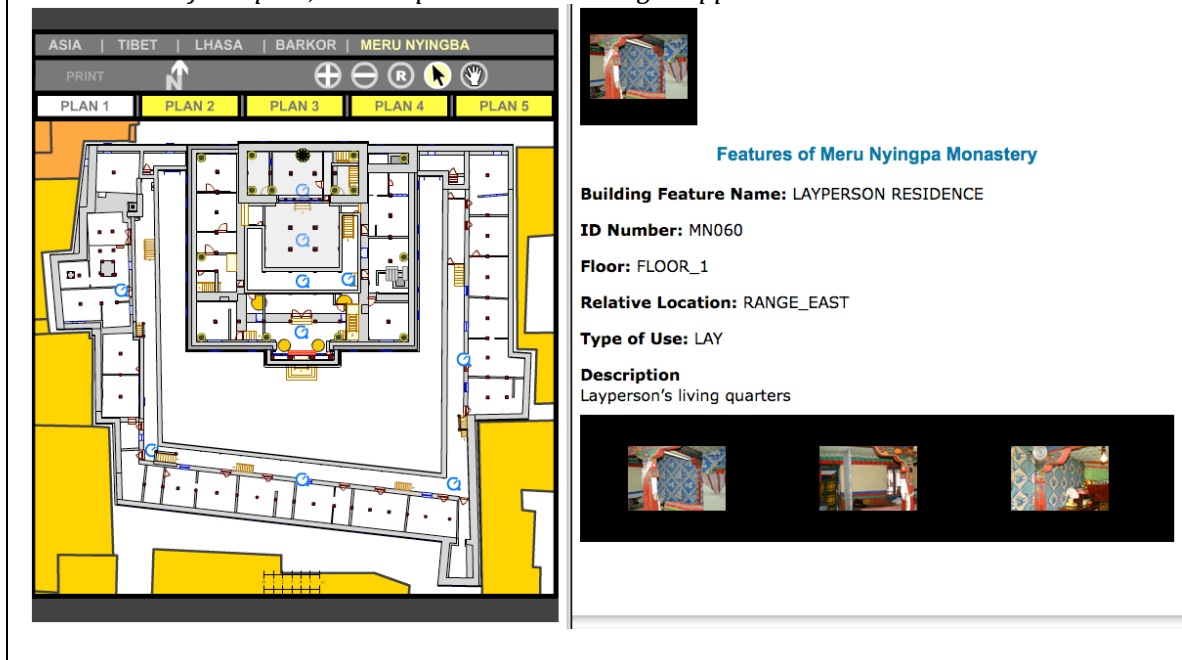


Figure 42: Interactive floor plans from Meru Nyingpa monastery, Tibet. When a user clicks on a room in the floor plan, a description and still images appear.



Several years ago, the Tibetan and Himalayan Digital Library rebranded itself as the *Tibetan and Himalayan Library*. As part of this process it shifted its mission from making content available to becoming a publisher and aggregator of projects. Project like the Meru Nyingba (University of Virginia, n.d.) (<http://ibot.lib.virginia.edu/~ibot/tibet/MeruNyingba/MeruPlans/>), above, became the focus of their work. One of the largest on the site is now the Sera Monastery project (Sera Monastery, n.d.). As described on their web site (<http://www.thlib.org/places/monasteries/sera/>), “[t]he Sera Project is a research and pedagogical initiative employing state-of-the-art digital technology in the service of creating the most comprehensive, interactive, multimedia database of a Tibetan Buddhist monastery ever attempted.” The site includes a book-length textual publication (much of it reprinted from an earlier publication), an interactive map of the monastery, and numerous panoramic images. The result is a highly interactive web site that serves as a resource about one of Tibet’s most historically important monasteries, but the site also serves as an example of a new form of scholarly output. While the Meru Nyingba site was used as

a resource for the creation of a traditional output (a master's thesis), the Sera site is seen by both its creator and publisher as a new form of scholarship.

Interviewer: Do you have examples of where your project has changed people's scholarship?

I think the Sera Monastery is a good example. That is really the expression of [the creator's] scholarly activity. A lot of people were involved with it but he really drove it. And here is a senior professor at the University of California who about six years ago was deciding what direction to go next and this project facilitated him taking this interest and going back to this monastery that he has this long relationship with. And the shape that it has taken—it is one of the bigger projects—and it isn't still just a partial expression of his vision and that is a good example of his work would never have taken this form—the incorporation of spatial studies and really thinking in detailed ways about the structure of a monastery and its different buildings and special layout and the use of visual information, architectural concerns. The way he has brought so many things in here I am sure would not have happened without digital technology, without digital publication.

Another if the sub-cases studied here, the Tibet Album, is similarly innovative in its format. The product of the work of several social anthropologists and museum curators, the Tibet Album presents a snapshot of a particular period of British colonial exploration in Tibet. From their web site (http://tibet.prm.ox.ac.uk/tibet_project_summary.html):

The period between 1920 and 1950 was marked by increasing warmth in Anglo-Tibetan relations and a greater ease of access to the country from the centres of colonial power in India. The photographs featured in this site therefore reflect the topography of the routes used by the British to reach the capital of Tibet (Lhasa) from the Indian side of the Himalayas and are concentrated in south and central Tibet. In many ways these photographs are the product of a particularly British engagement with Tibet at the height of colonialism. However, the time frame in which they were made documents an era when the influence of the British Empire was actually beginning to unravel in Asia: by 1947 India had gained its independence from Britain. Tibet's position on the fraying edge of the Empire meant that it was of significant interest for British trade and diplomacy but it was never colonized. However the country exerted a powerful fascination in the minds of many British subjects. This was fuelled by the photographs and publications of the privileged few who managed to enter Tibet and to live there for months at a time. The photographs contained in The Tibet Album reproduce the ways that Tibet was imagined by the British at a particular historical moment. They also offer profound commentary on what Tibet was and has become (Harris, 2006a).

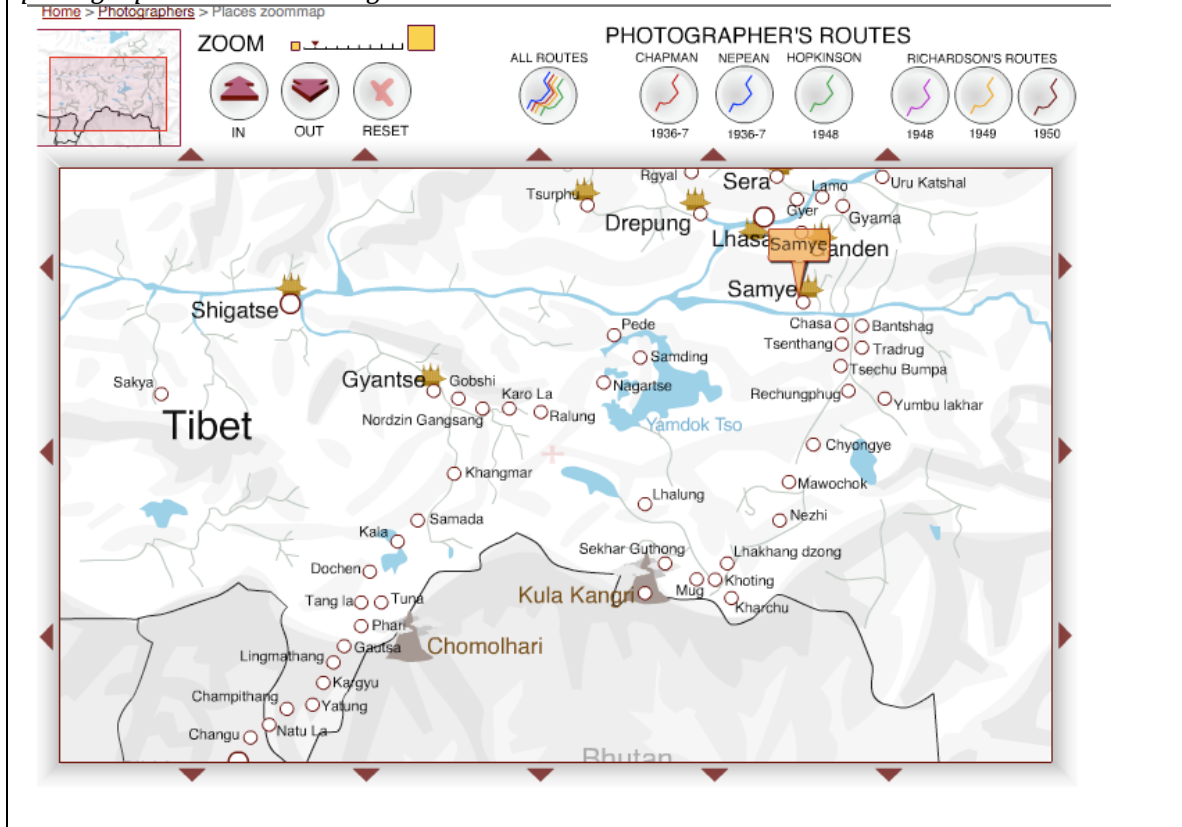
In this way, the Tibet Album is conceptually a very typical social-anthropological project. It is intended to portray and describe a particular time and place at the intersection of Tibetan and

British history. Yet its format is image based, which is not the typical output for this type of scholarship. As one of the project staff members describes:

I think the web site really caters to a very visually literate audience. I think this is [the director's] kind of ... this is what she wanted to do. And it was really based on [her predecessor's] work on the materiality of photography and that is where the web site really takes its logical conclusion to: what are the different material performances are of the same image? It is really sort of Edwardian theory in a web site.

In addition to its emphasis on visual information over textual, the Tibet Album is also a highly interactive environment. For example, an interactive map of Tibet that shows one or all of the photographers' exploration routes serves as one of the means of navigating the collection of images. Users can click on the name of a place or monastery and retrieve all of the associated images.

Figure 43: Navigating the Tibet Album photographs through an interactive map of the photographers' routes through Tibet.



Users can also effectively curate their own collection from within the presented photographs by selecting images and creating a virtual album. This “virtual album” function also allows users to create their own captions and annotations for each image as well as layout the images in the order they choose. By allowing users to remix the collection and not even requiring that they use the museum’s descriptions, the disruption to the “traditional” form of scholarship is twofold. Firstly, the speed of communication is accelerated—users no longer have to publish a response formally or wait for the publication to reply. Secondly, the very notion of the outputs of scholarship as being fixed is disrupted. Obviously the site itself does not change through the interaction of users, but the idea that a publication itself represents the fixing of a one or more scholars’ current thoughts and arguments is disrupted by being allowed to both reorganize and re-label the images in the Tibet Album. Scholars have always had some means of responding to their peers’ work be it by writing in the margins or publishing a formal response, but the immediacy of being able to reorganize someone else’s scholarship is new.

Library director and humanities scholar Robert Darnton confirms that this sort of interactivity is making inroads in the rest of the humanities. Such interactivity, he says goes beyond simply reconfiguring the outputs of scholarship, it actually gives the user a new kind of power in relationship to the scholarship. He describes his latest work:

My new book will also be published in paper and online. It is about the future of the book trade and publishing trade in France and French Switzerland, twenty years prior to the French Revolution. The raw materials of the research are fifty thousand unpublished letters. The online version will have much more materials than the print, and ideally users will be able to reconfigure it to their liking, based on their interests. These will then be published on demand. No two will be alike. This empowers the reader. (personal communication, 18 August, 2008)

Similar to the projects mentioned above that weave layers of content together—text, audio, video, and still images—Darnton also mentions making use of these same capabilities:

What has changed is that the communication of my works is now more electronic than it was before. For example, I gave the presidential address to the American Historical Society in the first year that the AHA Review went online. The address was about information

flows in Paris in 1750 through gossip and songs. The online version contained many layers including songs (contemporary recordings from old sheet music). This allows a directness and authenticity that is unprecedented (personal communication, 18 August, 2008).

If the outputs themselves are evidence of new forms of outputs for scholars, though, there is still an important lingering question about whether these new outputs really constitute new forms of scholarship. Many see these projects as making the raw materials of scholarship available online. It is exposing the inner workings of the scholars process, or creating a tool for answering a research question and making it available online, but to many it is not evident that these projects constitute scholarship in themselves. Two interviewed staff members whose jobs are to support the digital work of faculty members across the humanities were emphatic that these projects were not new scholarship in and of themselves. “[That digital project] was not a lot of new scholarship it was putting stuff online so that [the faculty member] could have the materials he needed for his book,” said one. The other presented a similar inclination—that he would like to see evidence that these projects enable new forms of scholarship, but as of yet the projects themselves are not that scholarship.

8.2 The Reward Systems

The question of whether these projects are actually scholarship or not may seem like a semantic debate, but the implications are very real for the scholars at the centre of the discussion. The reward systems of promotion and tenure in academic institutions around the world are predicated upon the production of recognized forms of scholarship. In the United States, tenure committees make decisions about awarding promotions based heavily on the outputs of the scholars—how many peer-reviewed publications has the candidate had and in which journals? Have they produced any monographs? In the United Kingdom the Research Assessment Exercise is used to determine the amount of funding that each institution will receive. It is similarly based on these same forms of output.

The result of the intersection of these digitization projects and the “traditional” reward system is a heated and growing debate between a) those who feel that digitization projects either constitute original scholarship or, if not original, are significant enough to warrant reward and recognition, such as an edited volume or a critical edition; and b) those that believe that the majority of digitization projects are not original scholarship, but rather tools that support the creation of original scholarship. Almost every interviewee in this research had a strong opinion on this subject and both sides were well represented.

From the directors of several projects in this case, emotions ran high in regard to their ability to continue their work on digitization projects and still maintain their jobs in the academy. There was a strong sense by many of their work not being appreciated, thereby requiring that it be done “on the side” of other academic work. One respondent describes his work with digitization projects and how it has affected his career:

I was a half time post and working night and day and what we were producing was of no interest to the academy. There was no CRASSH,⁸³ there was no digital humanities and if there was I didn’t know about it and I was a very junior person. And more to the point, the Research Assessment Exercise and all the powers that be in terms of scholarship—especially in terms of anthropological scholarship—thought this was, just as they had with poor old Von Fürer Heimendorf⁸⁴ fifty years ago, this is pedestrian, this is amateur, this is a hobby, this is fun, whatever you want to call it, it is not the nuts and bolts and the core of our discipline. And that has stayed with me, that feeling has stayed with me. Which is that shouldn’t you be doing this in the evening? Now Alan MacFarlane is a very senior professor of anthropology and has written twenty-five books and is a very senior person. He can afford to dabble, right? But as a junior scholar, just trying to get yourself established and that... I am thirty-five and many of the people that I have taught have positions senior to me now, because they have been committed to the production of scholarly knowledge. And I’m still just sort of... so this is not something for the traditional path. This is something that takes so much time to do and the results are many, many, many years later or from these unusual channels, which is these happy users from around the world who send you happy email and say this is great. So that is a frustration. I wouldn’t change it for a minute. I have no regrets about it because I am not interested in the conventional anthropological career. But that being said it means that if you are not going

⁸³ The respondent here is referring to the Centre for Research in the Arts, Social Sciences and Humanities at the University of Cambridge (<http://www.crassh.cam.ac.uk/>).

⁸⁴ Earlier in the interview the respondent recounted the story of anthropologist Von Furer Heimendorf, whose work was disparaged by other anthropologists at the time for not being theoretical enough. The respondent then remarked that Heimendorf is well read now, while most of his colleague’s books are long forgotten.

to go the scholar-producer route you've either got to be independently wealthy or not committed to a conventional career. Because what you are being assessed on are not things that you are producing. So that is one sort of ongoing concern. So that is one thing.

Amidst the frustration expressed by the interviewee here can be seen the struggle between accepting these digitization projects as “scholarship” and seeing them as “hobbies.” The respondent above admits that working in a digital medium has meant taking something other than “the conventional anthropological career,” but at the same time the frustration over not being rewarded for his work is palpable.

There were five explicit examples taken from the interviews in this research of faculty members who were denied promotion or tenure because (at least in the mind of the respondent) they produced too much digital scholarship and not enough “traditional” scholarship. Some of these examples were recounted by the person who had been denied the rewards, sometimes by a third party. As one respondent said, “We have had two non-tenured faculty who did projects [with us], then didn’t get tenure. The only one who ever has gotten tenure based on electronic work was [my colleague] and that was because he had connections in the English department.” Still, some have managed to balance their work on digitization projects with more traditional textual forms of scholarship. A mid-career professor of religious studies in the United States:

Interviewer: You referred to yourself as a book and prose writer. Do you feel pressure to stay along those lines rather than dabbling too much in digitization projects?

Well, yes, I just got full professor so I feel I have some leeway but I don’t think anyone is going to give me a raise for doing this. Raises are still centered on traditional scholarly production—articles and books. I just don’t see people getting raises for doing this kind of work. I would not tell anyone to do this off the bat. I just don’t think the systems of evaluation are in place yet. No one knows how to evaluate these things yet.

I think there is probably room now—and [PP1] will be a test case in this—he has been here longer than me and is one of the top grant getters and yet his salary is still relatively low. And he is probably going to go up to full based on his digital work. What that will mean is a chair that is really willing to advocate and to understand the contributions that [PP1] has made and argue for why that is valuable. Maybe that is not very far away.

A senior faculty member speaks about balancing digital activities with more traditional outputs of

scholarship and warns his junior colleagues about the perils of being involved in digitization projects:

I was lucky, just senior enough, just rash enough, and I had done enough of this, and self-confident enough, and also I had published enough books so I didn't need to worry about my distraction from academic promotion, because this gets you no brownie points at all. It's just a waste of space as far as your colleagues are concerned. In those days it certainly was. So it was just a hobby. As were or are most of the things that I do. It was just out of interest.

One of the clear results of this problem—regardless of whether these denials of rewards are real or perceived—is that many see the whole structure of the academy as broken. When asked about tenure and rewards in his department, one faculty member, for example, linked his situation to a general failure of the academy, stemming in part from the systems of publication and peer review.

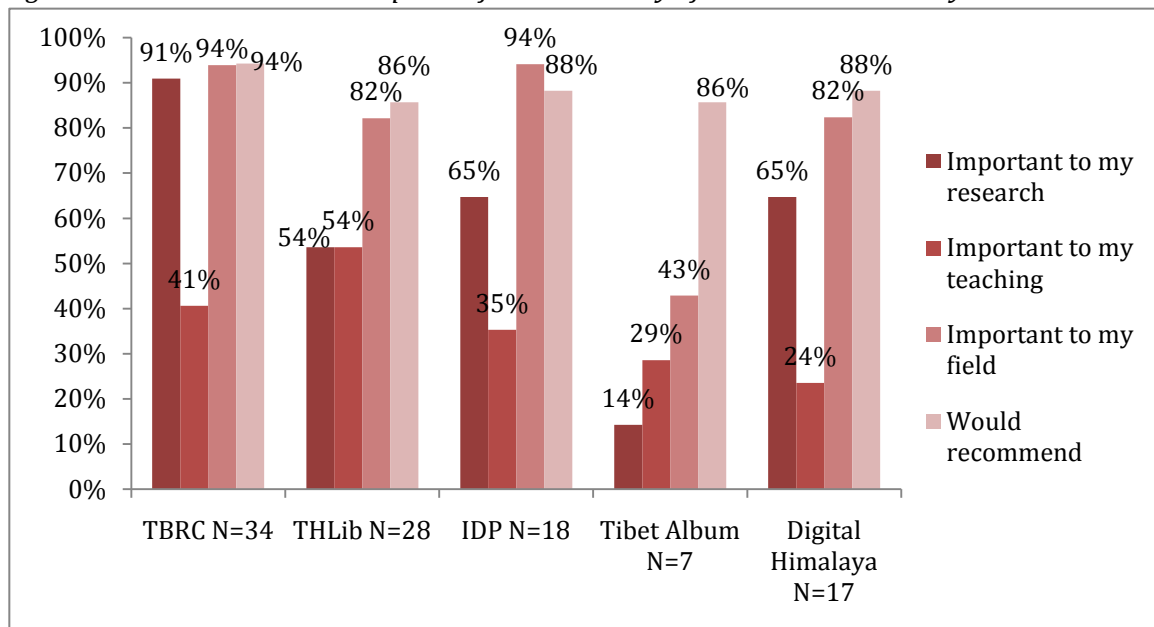
[T]he whole academic publishing industry doesn't make a lot of sense. If you ask what an academic publisher does for us, they don't do anything for us. What they do is they manage the peer review system, which they don't do, we do. And by doing that they get the whole promotion system the tenure committees a way to say he's good or she's not good by virtue of the fact that their name is somewhere; but when you look at what's behind that name it is usually one person who pushed you and got two friends to review your books. That's not inconsequential—at least you have two friends to review your book, but we can do that ourselves. And they end up charging us lots of money and they are not doing copy editing any more and so forth and so on. But all these things are locked together at the hip and we are at this stage where clearly the future of the world—the future of higher education—is going down this path but there is a lot of sociological changes that need to happen for it to really make sense.

While it was clear that many feel that reward systems are not changing in parallel with the methods of production in the humanities, still others showed strong feelings that these projects did not represent scholarly output worthy of tenure or promotion. As one respondent said, "I'm not interested in having these projects be "tenurable." It is the scholarship that comes on top of it that should be." He continued, "people who complain about the tenure thing aren't really doing scholarship. What needs to be done is to show how new scholarship is emerging from these projects." These responses came from a staff member whose job was to support the creation of these digitization projects across his university.

The outcome of these attitudes is twofold. First, those engaged in these projects are feeling that there is little support or rewards for digitization projects. As a result, young scholars are actively dissuaded from working on digitization projects. “We discourage non-tenured faculty from doing this because the work is not tenurable” says another project manager who supports the creation of digitization projects, but, he adds, “certain projects never were—like indices.”

Another manifestation of this tension can be seen in how the project directors and managers themselves refer to the projects on their own web sites and in their resumes, indicating a widespread confusion about how to describe these activities. The creator of the Sera Monastery web site mentioned above, for example, does not list the site under the publications section of his curriculum vitae (<http://www.religion.ucsb.edu/Faculty/cabazon.htm>) (The Regents of the University of California, n.d.), but refers to it as “an interdisciplinary digital initiative whose goal it is to document Buddhist monastic life in one of Tibet’s great monasteries.” These resources are clearly valued by their users. Very high numbers of respondents to the survey of Tibetan and Himalayan scholars cited these resources as important to their resources and an even higher number referred to them as important to their field.

Figure 44: This resource is... Responses from the survey of Tibetan and Himalayan scholars.



By contrast, though, only one of the five project directors from the embedded cases in this research mentioned their digital work in the publications sections of their curriculum vitas. Two mentioned such work under their research interests, and another two not at all. This epistemological conundrum is at once evidenced by these decisions as well as being evident in the larger reluctance of the scholars in this area (even the ones building digitization projects) to cite electronic resources (see section 4.2).

A recent report from U.C. Berkeley's Center for Studies in Higher Education indicates that this question of reward is widespread across parts of the humanities, such as history:

As a book-based field, the standard form of final publication in history is the scholarly monograph, ideally published by a prestigious scholarly press. Historians also produce peer-reviewed journal articles, chapters in books, documentary editions, and book reviews, which supplement, but do not replace, the monograph. In general, historians, especially those pre-tenure, appear to be quite conservative in terms of publication. Multimedia web sites, archival databases, and other digital activities are seen not as full-fledged scholarly products, but rather as methodologies that support or extended the monograph or formal articles. (Harley et al., 2010, p. 389)

Across the humanities, strategies for moving beyond this dilemma are beginning to be discussed.⁸⁵ As the discussion is refined, three separate strains of argument seem to be emerging. One approach is to try and convince the “powers that be” that digitization projects represent new forms of scholarship. A second, perhaps more subtle approach is to argue that while these projects might not be equivalent to writing a monograph, they are still worthy of recognition and reward (similar to the treatment of indices and bibliographies). And a third argument is to keep digitization projects separate from analogue ones—in effect to relegate them to the field of digital humanities.

⁸⁵ This theme was present at a conference at the University of Virginia about the future of the humanities. Again, both sides were represented, with many arguing for the recognition of digitization projects toward tenure, and others seeing these as projects on top of which scholarship should be built. The papers from the conference can be found on the conference web site (<http://shapeofthings.org/>).

8.3 Changes in Research Questions and Methods

Most of the changes to humanities scholarship described thus far are essentially aesthetic—they are changes in how scholarly output looks, feels, or behaves differently than in did in a pre-digital era. Another significant way of looking at changes in scholarly outputs, though, is to look at the questions that structure and drive the research to begin with. Are these questions changing? Are scholars both taking on and answering research questions today that would not have been possible to answer prior to these digitization projects?

Similar to the enquiry about research questions is an analysis of the methods being used to answer these questions. This is in some ways a simpler question to answer, as newer methods are easy to recognize. At a basic level, the overall computerization of Tibetan and Himalayan studies is enabling scholars to use computers to answer research questions. Access to personal computers has enabled this change and large text-based projects have equally so. On the surface, this is a very obvious—simplistic even—statement, but the long-term implications for the field are significant.

Although the percentage of respondents to the survey of Tibetan and Himalayan scholars who performed quantitative analysis on texts was relatively low (see Figure 32, above), several interviewed scholars did mention the use of computers to perform quantitative functions on textual materials, either by themselves or by a colleague. Such cases of text mining⁸⁶ first arose in the humanities in the 1980's with projects like the Oxford Text Archive. Most of these initial projects were in the areas of English Literature or Classics. Now, thirty years later, text mining techniques are increasingly common across the humanities. While the costs of personal computers has made them ubiquitous across the humanities, for Tibetan and Himalayan scholars access to a searchable corpus is relatively new. Yet, the interview data indicates that a substantial

⁸⁶ Text mining can be defined as “the process of analyzing text to extract information that is useful for particular purposes” (Witten, 2004). It is differentiated from simple full text searching in that it looks for patterns (often linguistic) across an entire corpus of text. As a result, data is generated about the text.

number of scholars in Tibetan and Himalayan studies are making use of quantitative methods in their work. One senior scholar, for example, mentioned a colleague who “applies mathematical models to assess the grammar of texts.” In this case, textual analysis is used to identify patterns that reveal inconsistencies in authorship in early Tibetan texts. An abstract from a 2007 conference, found on the conference web site (<http://www.britac.ac.uk/events/2007/dunhuang/abstracts/takeuchi.cfm>):

Thanks to the development of research projects, such as cataloguing, databasing and digitizing, we now have a much broader view of Old Tibetan texts as a whole. Extensive analyses of accumulated textual database are revealing chronologically and sociolinguistically diverse aspects of Old Tibetan texts: namely, many Old Tibetan texts were produced by non-Tibetans in post-imperial 10th c. in multiethnic social milieux. In this paper, I will attempt to introduce some of the recent findings obtained as a result of such ongoing researches (Takeuchi, 2007).

Quantitative analysis need not be limited to texts, though. One of the most methodologically innovative projects discovered over the course of this research involved the analysis of metadata. Using the bibliographic cataloguing records from the *Tibetan Buddhist Resource Center*, one scholar created a new method for understanding the physical and geographical diversity of Tibetan biographies and autobiographies. He explains:

The most technologically interesting use I have made—that has made a difference for how I have viewed Tibetan literary history—is to a collection of records of a particular genre. And by being able to look at the genre over a nine hundred year period—I did this for biography and autobiography. Doing a geo-referenced review in a way that wasn’t really possible before will give us this quick, rough and ready bird’s eye view of major trends. So I got them to give me all their records. They gave them to me in html and I dumped them into an Excel spreadsheet and started adding broad regional data to it, for central Tibet, etc. I wanted big spatial buckets to put them into. And then I really got dates down—death dates or published dates, printing versus manuscripts. And length of book. It was only a partial representation, but it was enough to show some broad trends. It was very easy to show, without even using GIS, I was able to establish some broad trends of literary production from central Tibet to the east, which wasn’t difficult to then connect with patronage from the Ch’ing government, and increased size of biographies. And next I would like to try and track style, which isn’t quite as easily quantifiable.

In addition to providing an example of novel methods, the project described by this scholar also

serves as a convenient transition to the question of whether these technologies are enabling new research questions to be answered. In this case, the scholar felt that this project clearly did enable something new in his research:

So I thought that was a pretty powerful way to look at the growth of a literature and it just would not have been possible without some pretty decent data in the TBRC records. Which also includes some biographical data in the records and a bit of place data. I just couldn't have imagined doing that prior to TBRC. And one of the things it helps, maybe psychologically, in terms of pushing the field in a little different direction... I was really interested in having people read widely, and read for generic issues, you know. What kind of structures are used, are there detailed table of contents... to be able to look broadly at lots of works rather than focusing on the great writers. You don't have to judge what is good and what isn't... you are letting the sum total of a genre define what kinds of data you will gate. Very broadly this is letting crude, quantitative analysis into the tradition. And I think that this is applicable to philosophical traditions... say looking at all Madhyamaka literature rather than just one lineage. So I think this has value for intellectual history more broadly.

This project in some way ties together many of the questions represented here. The scholar speaks of it changing the scope of what can be analysed over the course of a research project, but also how the project is allowing him and his students to look differently at the literature in the field—to look broadly rather than deeply. It in some way also serves as an example of how changes in methods and changes in research questions may be merging. Again, the point is not to determine the cause and/or effect, but simply to determine novelty; and while this kind of work may have been possible many years ago, it would entail so much manual labour as to be almost unfathomable to scholars today.

Several respondents mentioned that they or their students were now able to accomplish research projects and answer research questions that they wouldn't have dreamed possible without access to digitized texts. Looking more closely at *how* the research questions are changing, though, reveals that most of the difference seems to lie in the question of scope. Digitization enables access to a larger number of texts than scholars have ever had access to before. This has, in turn, allowed scholars to invent questions and projects that enable them to look for patterns across a

greater number of texts, rather than simply looking more deeply into one or a few. One senior professor explains the changes he has seen in his field over the course of his career.

In the past, Tibetan studies was still being conducted this way, in a fairly loose way. You would take a text, translate a portion of it—usually because the text was too long to do the whole thing—write an introduction and a few footnotes and boom, you have a dissertation. This is the way it was done at Virginia for example. [Now] it has changed. But before, it ran the gamut. Everyone I know who graduated from the place did a chapter of one book or another.

I've always been interested in looking at developments, how certain things developed over Tibetan history. And for that one has to read as broadly and as deeply as humanly possible. So I don't have students reading only religious texts, I also have them read biographies and chronicles of monasteries, family histories, treatises on poetics, or astrology. Because this is what people were reading. A learned Tibetan was reading all these different genres. Not so much family histories, but all the different genres of Tibetan Buddhism, they were reading, all the different genres of Tibetan literature they were reading. So I try to instill an awareness of all these different genres. So I hope my students get a broad idea of what is available in Tibetan letters. And this influences the way they write a dissertation and the way they do their work later on. With [one of my students], for instance, who started with me from scratch in Seattle, he is following this kind of pattern. To read as much as possible and out of that to distil a narrative that makes sense. Until something else comes along and then you just have to revise it.

Reading across many texts seems to be a growing trend in Tibetan and Himalayan studies as evidenced not just by the scholar above, but several of the interviewees. This movement seems to be linked to growing access to texts through digitization—regardless of whether it is access to page images or full text works. Further, there is evidence that the expectations of both instant and full text access have become so pervasive that it is changing the kind of research questions being answered within the context of a doctoral dissertation. Graduate students are attempting thesis topics that simply could not have been accomplished within reasonable time limits without full text searchability. For example, a sixth year doctoral student in Buddhist Studies is working on a project that involves finding all three existing copies of a very rare commentary about the most commonly reproduced text in the history of writing—the “Perfection of Wisdom” sutra. In validating the commentaries, he also needs to find and read as many disparate copies of the Perfection of Wisdom sutra as he can. He describes his conundrum:

Some scholars have a problem in that they can't really find a copy of their text. Others have the problem of having too much. I have both problems. I have the most available text on the planet, and one that is incredibly hard to find and that is the commentary. I have manuscript management issues.

His thesis project represents in some ways a blending of old and new methods of reading and processing texts. There are three extant copies of the commentary that is at the heart of his work and he needs access to all of them. For these he has had to contact the holding library or archive and travel to work with the text or obtain a copy.

This text is a commentary on the root text. The root text is the *Perfection of Wisdom*, it is like the Buddhist bible. This is the most influential text and because of that it is the most copied text in the history of hand copying ever. Literally hundreds, thousands of copies. I have to deal with this mass of this one root text. I have to find—electronically—copies of this text, I have to get copies of them, I have to store them on my hard drive, catalogue them, collate them, organize them. I look at the earliest versions. In the commentary, he suggests that there is a mistake in the original so my goal is to get as close to possible to the one that he was looking at.

Digitization means that for this scholar and many others, some of these texts are available over the Internet—freely or by institutional subscription. That does not mean that the search and information seeking process is interrupted, or even abbreviated; only that it is accelerated. In many cases, though, where texts are not available on the Internet, research is still being facilitated by scan on demand services. When asked how he went about locating and accessing the texts that were at the heart of his doctoral dissertation, the scholar above provided a detailed and lengthy account. Although the passage is quite long, it provides significant evidence of how the information seeking process stays the same as well as how it has changed.

I read in a book where these manuscripts were to be found. It turned out that the author of that book possessed copies of these... I tried to contact him, but he isn't giving up any copies, he wouldn't send them to me, so I had to go through all of the legwork myself. One of the places he said he got them from was in India so I searched online to see what had happened to it. So I just did Google search and would read articles and found they had closed their doors and sent their materials to Rome. Then I contacted Rome and never heard anything back. Same thing in Germany. There is a network online called H-Buddhism and I put out an open call asking for personal contact info for each of these places and I received three names and private emails and I pushed myself on them and all three responded. The German one—very organized—put them up on a site where I could download them almost immediately, like within two days. Fantastic experience. The Rome one—all bound up in politics—refused to do anything like that. They wanted to put them on a CD and mail them to me .. three months later. The other one, in Sikkim, it turns out

there is a Canadian woman—the only white citizen of Sikkim—who took pity on me. So she took some photos with her cell phone, just 5 or 6, and tried to send them to me. But her Internet was so bad she said, we are going to have to put this on the list of scans and I don't know when we will get to it. Five months later I planned a trip over there and two days before I arrived a CD arrived. When I finally get it, it is just a huge resource.

For the root text it is harder, because there are so many copies, and they aren't online. I had to drive to Cambridge and physically look at all of the 7 root texts copies they have there. And I have seen one of the copies we have here and I had to go through all of this—make appointments and stuff—just to look up one word, because it is philosophically important, to see if it is different. So that has been a slow process, and there are literally thousands. If they were all available online my research would be hugely facilitated and a piece of intellectual history would be made available. I have in mind the idea to get a grant—maybe a postdoc grant—to collage all the manuscripts in Sanskrit.

As recounted by this student, the information seeking process is not very different than it was in a pre-computerized era. In essence, he follows a very traditional version of the research model illustrated above. Yet, it is also evident that a range of digital technologies—from email to listservs to digitization—have allowed him access to a larger set of texts in a shorter amount of time than he could possibly have had access to prior to digitization. At the end of this recounting, this scholar also described where he sees his own skills with technology compared to his colleagues.

My friends—there are two types of friends—one they go through these things and they just sit there and flip through these things. The other, he combs through these catalogues like it was his Sunday morning comics reading. And one of his pastimes is to identify the manuscripts that are listed as unidentified in these catalogues. And he does this through a variety of means, but mainly through these complex electronic searches of his own database and matching the texts. So I don't have that level of sophistication and I don't think it would help with this project but I would love to know how to do that.

In this context, this scholar's work—while clearly enabled by access to web based technologies—represents the early stages of a transformation that is just beginning to happen and perhaps more importantly of which scholars are just becoming aware.

Interviewer: Do you think access to these things is or would change the actual kinds of questions that you ask, or just make your work go faster?

Definitely the fast part, yes. But of course it will make you change the questions you ask. When you don't know something you ask the most general questions. Faster means that you have more access and you can get to a more subtle level. You have a certain amount of time, if you have thirty days and you have to spend twenty nine of them getting the text and you only have one day to read the thing, then you are going to ask the most broad and general questions. But if you have the time to read the text a few times or go through it a

few times, you start to notice things that you wouldn't notice in a quick read. For instance, when I went to Cambridge, I sat down with one of these texts. There are seven of them and I thought I only have four hours so I am going to look up this one thing in all of them. But they all have a little bit different script. So in the beginning of one of them I started to read a little to get used to the script. That little beginning that I read has produced very, very, very interesting questions. There were some discrepancies that I found in there that raised interesting questions. I have wanted since then—that was three months ago—to go back and look further, to read through the whole thing but I haven't been able to. That shifted my entire theory. If I had just looked at the one point I would've had a completely different idea. The discrepancy between those two was so broad and so philosophically based. The fact that there is a discrepancy in this point means a dimension to my question that I didn't have before.

Specifically, I saw that this text was close to my commentator, and clearly not following him but on his side. Earlier they replaced a word that is on a philosophical point. But it replaced an ancient adjective with a modern one. So that was a clue that they are not just making philosophical changes, they are making changes to clarify things generally. So that gave me a huge clue not just about what kind of manuscript this was but about what kinds of manuscripts I need to look for.

Interviewer: But if you had the text online, might you have skipped straight to the point you wanted to go to and lost that important process?

No, I would have done the same thing, I would have still had to get used to the script. But if I'd had it online I would have read the whole first twelve pages, instead of just jumping to page twelve.

By removing the time constraints put on scholars who many have access to something only in a reading room, access to digitized texts—particularly those that can be endlessly revisited, or even downloaded for use offline—is changing the depth with which these texts can be read. Similarly, by accelerating the information seeking process, digitization is allowing a significant shift in the breadth and number of texts with which scholars can work.

When asked directly about how their research questions may have changed or be changing within the historical context of Tibetan and Himalayan studies, most younger scholars did indeed see their work as evidencing a change. Most—like the example above—mentioned being able to incorporate a greater number of primary resources into their work than would have otherwise been possible, thereby allowing them to take on broad and expansive research questions. Yet, when looking at their own work within the context of their teachers and predecessors, they saw their own methods and questions not as a break from tradition, but as a continuation of the work seeded by their teachers. One of the interviewed Tibetan scholars, who also serves as subject

librarian at his university's library, saw a similar continuum of practice, perceiving the changes in the research process as subtle and aggregate, but not revolutionary:

One of the big challenges has been trying to keep the new students connected with that traditional way of doing research while still teaching them to understand and use electronic resources. Some things haven't changes as much as I would have imagined.

And for many, the most significant changes can be seen in the outputs of their scholarship, not in the process:

The interest in literary and intellectual history came because of who I studied with. He is a first rate intellectual historian. Reads widely as a matter of course. For him it is more about building a network based on close readings, building a finely grained historical portrait. But I don't think there is any contrast between old style intellectual work and this stuff. His knowledge is his knowledge and it comes out in the form of articles. And collective knowledge comes out a lot more slowly in that area. With databases I think well have the ability to add cumulatively to our broad concerns, a particular genre, a particular place.

This quotation in many ways takes us back to the beginning of section 6.4, more specifically to McCarty's characterization of the humanities. As he says, for humanities, the argument has been "the locus of the action," unlike the physical sciences, for example, where the focus is on the outputs and measurements—in essence the data. By referencing databases here, this faculty member is pointing to one of the most significant changes in the outputs of humanities scholarship—that it is no longer simply about the argument, but now as much about the data. This is a more subtle shift than analyzing the formats of outputs or even the scope or research questions, but it has the possibility of profoundly changing the way the humanities as a whole are perceived.

8.4 Perception of Negative Impacts

The majority of the discussions with respondents in regard to changes in the practice and output of the humanities were neutral in character. A majority of the respondents were neither positive nor negative in their characterizations of how their work has changed with the increases in access to digital texts. Quite a few were positive and excited about these changes. Still, a significant

enough number of respondents discussed negative side effects that it is worth mentioning those responses here.

8.4.1 Changes in reading habits.

The greatest concern voiced by faculty members in regard to their students' work was that they no longer read the texts they encounter. They search them and skim them, but they do not read deeply and as a result may be missing the opportunity for deep thought [emphasis added].

And I see my students who don't read through the texts that I was able to and that I read through when I was their age. And they automatically go to Google or to a digitized set of books like the Asian Classics Input Project, without going through the whole book and I think that is a huge drawback.

Interviewer: So are they going through more texts just skimming them?

Absolutely. **And the information that they get is very ill digested. It is not at all digested.** So this is a big drawback and it makes them not go out and look for things, it is too easy. I think.

On the one hand, this response may be easy to discount as naïve or even as jealousy, as was addressed by one mid-career professor:

Interviewer: I have had some faculty members tell me that they think their students are getting lazy. What do you think?

I think that comes from envy also, really, because when we did our research we had to go to great lengths and now they have it on a silver platter really. But it can only be a good thing really.

8.4.2 Are more resources better?

Yet, in this case even this professor who initially revealed scepticism later conceded that the quality of his students work was changing because they were trying perhaps to work with too many texts [emphasis added]:

Interviewer: in other fields researchers are looking at more resources – approaching a dissertation differently, looking at more texts instead of going deeply into one. Do you find the same things?

I think that **the body of evidence becomes wider that people use.** One of my PhD students started working on one particular text and I said well why don't you look for similar passages in the rest of the Kanjur and she did and it threw up lots of other materials. The problem is processing all of that material. So **even though they can theoretically access that much material, whether they can be used is quite a different question.** One of the reasons someone would focus on one text is practical in some regard but it was also

because it was very difficult material and it is often not possible to understand thirty or forty sources within three years. So **there is a danger of research becoming diluted**. But then that is the job of the supervisor to spot that, huh?

These sorts of mixed feelings about their students having access to large quantities of digitized resources were evident in several of the interviews. One senior professor, for example, felt that because his students had access to primary resources at an earlier stage in their work, there was “much less chance of them overlooking something.” When asked if and how this is changing the quality of their work, he replied, “Yes, there is no question. Their work is more analytical earlier in the process and less descriptive.” He then spoke about how a student working on a thesis will pick a text and that text becomes the centre of their work—the most important thing to them—but that it is no longer the only thing. In general, this was seen as a positive development, the sense was that this broadening of literary horizons. Yet this same faculty member was concerned about his students’ abilities to process that much primary information.

But the fact of the presence of this quantity of digitized material does accomplish is to advise them immediately about the vast range of related materials so they immediately see the context of what they are working on. And I think that gives them—even if they can’t cope with the amount of material they can at least see that there is quite a lot of it out there that is related to their text and they are no longer working on islands—and I think that gives them a perspective and an approach which would not have been so easily got in the past. It is frightening and exhausting sometimes, but it creates a different mentality. You know you still have to go through the hard graft of making sense of this stuff but you do see the way in which the thing you are working on is connected with other works in the field.

In this case the concern is couched in a positive light—that overall the exposure to larger amounts of information provides a more thorough contextualizing, yet the concern about processing is there nonetheless.

This question of trading a deep understanding an analysis of a few resources for a broad overview of many resources—a sort of trading quality for quantity—was also voiced in regard to the publication of works in the field. Some saw this trade-off as not only a problem for students and young scholars, but a growing problem linked to the field as a whole:

Interviewer: Do you think that this is changing quality of work that your students is doing?

Oh yes.

Interviewer: For the better?

Oh no, for the worse. Well, no, with my students, I tell my students how I want it. So I take that back. But it has a funny effect. And this is the funny with Tibet studies. You have this whole Diaspora of very pious, very devout Tibetan Buddhists who know Tibetan reasonably well who are not trained in reading text critically and who are publishing these texts one after another—some with Snow Lion, some with Shambala,⁸⁷ And the result is there is a lot of crap on the market, there is no quality control. And they are all very pious books and they mean very well, but they create a lot of misinformation as well. That is something which you do not have in Medieval studies because reborn Christians don't go and learn Latin and Greek and Hebrew or Coptic. They are happy with the most recent commentary. But we have this odd situation in Tibetan studies where on the one hand you have a very slowly growing scholarly community and on the other hand you have this very large network of dharma centers and they all have their own translators who have learned at the feet of their lamas and some of them know Tibetan very well and can speak it very well, but they don't have the training that is necessary to translate these texts in a critical way. And so you end up with a lot of rubbish as well.

There was a definite sense from some that more resources was not always better, and that the facilitation of publication brought about by digital technologies is creating a problem across the publishing industry. "When I started we had three dictionaries and now we have ten. Sure, that's progress [sarcastically]."

When asked how he deals with the quality issues in digitized texts—particularly those inherent to texts that have been typed or "keyed" in, one faculty member admitted to having to teach his students not to depend on these works.

I think it is all positive as long as they realize it is still a working copy, it is not a final copy. I fully support it because it allows them to focus their resources where it matters. Of course, the pedagogic element of reading the text is lost and that throws up some problems. But still one has very often to work closely with the block print because the electronic version does not replace it. It is basically a point of access which we didn't have before. Over time that may change as the electronic version becomes better it may replace the paper version but most of my colleagues still work with the paper copy in the end.

Still, this same scholar admits to some areas of progress in the quality of publications.

And I was happy to buy some books that they published in Varanasi. Now I look at them and they just seem so quaint, they are useless. But at the time I got three or four of them and they were real treasures. I was in Canada, pretty far removed from everything so I was pretty happy to get them. So there has also been some qualitative increase in terms of the

⁸⁷ Snow Lion and Shambala are two of the most prolific publishers in Tibetan Buddhism.

quality of what is available and what is being made available through digitization.

Once again, this observation by a Tibetan and Himalayan studies scholar seems to parallel concerns that are being voiced more broadly across the humanities.

Pressures in the publication environment have grown alongside the expansion of subfields within the discipline. While some see the rising bar of tenure and promotion requirements as producing a “glut” of low-quality books in American or modern history, monographic publication has become increasingly difficult in smaller, specialized subfields. While the publication crisis might, in some cases, be in the “eye of the beholder,” there are concerns that publication challenges in specialized subfields may be driving scholars toward more readily marketable areas of scholarship. Experiments with electronic monograph production, such as Gutenberg-e and ACLS Humanities E-Book, have made inroads in combating the negative perceptions associated with electronic publication, but they remain outliers in the publishing landscape and are hard-pressed to compete with the prestige of well-regarded university presses. They also present great challenges to reviewers and review committees, especially among genres that present information in nonlinear and difficult-to-print formats. Similarly, despite an overall proliferation of specialized journals, publishing in nascent online-only journals carries much less prestige than the flagship print journals. (Harley et al., 2010, p. 389).

This question of quality control in the production of texts in the field also brings up one of the other negative implications of digitization—lack of control.

8.4.3 Loss of control.

With digitization, two types of control are lost. First, there is the loss over *who* has access to a text. Many of the most sacred texts in Tibetan Buddhism have for centuries only been accessed by the monks who have achieved a certain level of training. Digitization, in effect, removes that boundary. A senior professor of Tibetan studies:

This started in India, the Tibetan community there. Whether the publication of texts a, b, and c, since they were rare in Tibet—since they were esoteric texts—should they really be reprinted under the PL480 program. And this was a problem. For many, many years the Sakkyā tradition did not want to have one of their key texts for the tantric cycles reprinted. Because once it is reprinted it is out of your hands. It is anybody’s game. Before these texts were sealed, they were closed off to some degree. For Tibetans to gain access to these texts was almost impossible without going through a teacher. All of a sudden we have all of these texts available on your shelf in the library. So I think there is a problem there.

When digitization provides equal access to all texts for all Internet users, though, there is another loss—of *scale and context*. Providing access to a very rare or even unique text online means that

it is suddenly as easy to access as something that might have otherwise been quite common.

Several scholars mentioned the fact that the core of Buddhist texts, the canonical works known as the Tenjur and Kanjur, were not yet available online, while many more obscure texts are:

Now bizarrely, the Tibetan canon, which is about one hundred and eight volumes and about the same number of commentaries, hasn't been input to the best of my knowledge. The Bonpo's are a more obscure group than the Tibetan Buddhists and they are close to completing the input of their canon, of a similar size.⁸⁸ The more obscure areas want to take advantage of the digital technologies precisely because this is the best platform for them to become better known. So there does seem to be an inverse relationship between prominence of what you are doing and the scope for the dissemination of knowledge provided by the present technology.

For scholars who have never worked in a pre-digital environment, there is an important context that is lost through digitization. If something is easy to access online, it is quite easy to assume that it was easy to access offline. Texts are in a sense equalized—the sense of what is rare and what is not is lost and some scholars voiced concern about this loss.

⁸⁸ More about this project to input the Bon canon can be found on the project web site (<http://www.bonfoundation.org/bongoods.html>) (Bon Foundation, 2010).

Chapter 9: On the Success of Digitization and Digitization Projects

9.1 Introduction

Having presented evidence in the previous chapter that indicates that digitization is having an impact on scholarship in Tibetan and Himalayan studies, the goal in this chapter is to look more closely at the nature of that impact. More specifically, this chapter will address the question of success. The evidence presented will be structured around the second research question and its related sub-questions.

- What are the factors that determine the success of digitization projects that involve rare and closely guarded materials?
 - What are the key factors that influence use or non-use of digitization projects by scholars in Tibetan and Himalayan studies?
 - What are the key factors that influence the use and longevity of one particular project over another?

The sub-questions, above, represent two distinct and important facets of the question of success and both will be answered in turn. This chapter will present findings that have influenced the success of digitization as a whole—everything from large projects, to personal digital collections, to the one-off digitize on demand services—across the field of Tibetan and Himalayan studies. It will address the ways in which digitization has been successful in changing the way that scholars find, process, and output information. With a deeper understanding of why digitization as a whole has been successful across the field, this chapter will then present findings about why some projects are more successful than others and more precisely, what the characteristics of success look like. The majority of the findings in this chapter will focus on three themes that emerged over the course of this research as the dominant factors for the success of digitization: critical mass, community, and understanding and supporting various levels of innovation.

9.2 The Successful Integration of Digitization into Tibetan and Himalayan Studies

If we look at digitization in all of its forms broadly across the field of Tibetan and Himalayan studies, its success as a tool or resource needs first to be validated. Only 3% of the 65 scholars

surveyed in this research reported that they never use primary resources online. Not surprisingly, 63% of the Tibetan and Himalayan scholars participating in the same online survey reported regular or frequent use digitized historical resources (See Figure 27, above). Every scholar interviewed over the course of this research reported some use of digitized texts, either for reference or to incorporate more directly into their work. Analyzed in terms of sheer numbers, digitization and digitization projects seem to be successfully integrated into the work practices of most Tibetan and Himalayan scholars. The findings in the previous chapter illustrate a particular kind of success, illustrating that digitization is not only used by, and present in the work of, scholars in this field, but that their work and expectations are actually changing as a result of long term use of digitization projects. If the success of digitization can be defined as a matter of commitment from a target audience, then the qualitative and quantitative information here is clear evidence of achievement. What remains, then, is to understand *why* digitization has been successful in this field.

9.2.1 The importance of critical mass.

Access to a few, or a proportionately small number of resources does not have the same impact on an individual scholar's work or on a field as access to a proportionately large number of resources. Having a "critical mass" of resources available online significantly increases the likelihood of widespread adoption and use of digital resources. The significance of "critical mass" in regard to the success of individual projects will be discussed later in this chapter, but it is important to take some time here to understand the relationship between the quantity of available materials in the field as a whole and overall use of digitized resources by its scholars.

The concept of critical mass comes from physics. It refers to the minimum amount of atomic material needed to maintain a nuclear chain reaction.⁸⁹ The term has been widely used in reference to digitization projects to illustrate the point at which users will switch from working

⁸⁹ The *OED Online* defines critical mass as, "in Nuclear Physics, the minimum mass or size of fissile material required in a nuclear reactor, bomb, etc., to sustain a chain reaction."

primarily with offline and analogue materials to using primarily online and digitized resources. In her seminal paper *Why Digitize?* Abby Smith (1999) called for libraries to coordinate their efforts in order to create a critical mass:

We also need to ensure that libraries are working collaboratively in their efforts to digitize materials so that together they create a critical mass of research sources that are complementary and not duplicative, and that begin to fulfill the promise of coordinated digital collection building. (Para. 28)

The point of critical mass for digitization cannot be specifically quantified and is not easy to identify; and it may be different for each scholar or discipline. In this way, says Dale Flecker of the Harvard University Library, digitization proposes a problem of both scale and adequacy. “So for the foreseeable future in most domains you have got to use both physical and digital resources. So the idea of starting this separate little bucket over here which has its own existence, separated from the huge mass of extant collections is a disservice rather than a service” (personal communication, July 31, 2008). With regard to the use of electronic journals, he went on to describe the point at which he saw Sidney Verba, University Professor of Social Sciences and then head of the Harvard University Library, make the switch from analogue to digital:

I watched Sid with the growth of JSTOR and one day he said, I don’t need journals in my office any more. So what was the critical mass, when was the tip? (D. Flecker, personal communication, July 31, 2008)

The consequence of critical mass is strongly tied to the scholarly research process. On a broad scale, the information seeking cycle (Figure 36) represents the work of searching for information in many different places and using many different tools. On a smaller scale, however, this process needs to be repeated within every possible search mechanism. Therefore, the fewer places to search, the better. If a majority of resources can be found by searching a library’s online union catalogue, why should a scholar spend the time to look elsewhere? Or conversely, if there are few

online resources known to be of use to a scholar, searching online for digitized resources is not an efficient use of time.⁹⁰

One of the key reasons that digitization has been so successful in Tibetan and Himalayan studies is that it has achieved that critical mass, both on a broad level—for the field as a whole, and for most of the individual scholars. Collectively, the projects in Tibetan and Himalayan studies represent a large enough pool of resources that scholars feel that their time spent searching for digitized materials is well spent. Tibetan and Himalayan studies seem relatively unique in this respect, as the same cannot be said for many fields in humanities.

For a professor of Buddhist Studies in Kathmandu, Nepal, where access to historical primary resources can be difficult for students, the importance of reaching this critical mass is essential for the survival of his department.

It is great because the masters' students can pick any topic, they aren't limited in what they study. The Tibetan Buddhist Resource Centre, combined with a JSTOR subscription really open up possibilities.

This professor's students are particularly dependent upon digital collections since the department is still in the process of building and developing their library. Without the critical mass provided by the combination of JSTOR for secondary resources and the *Tibetan Buddhist Resource Center* for primary resources, his students would be very limited in what they could study.

The presence of a critical mass was an important factor for selecting Tibetan and Himalayan studies as the case at the centre of this research, because adequate resource availability is deeply tied to the ability to measure impact. Without having reached critical mass, scholars would still be working primarily with analogue resources and perhaps supplementing them with digital. In such a scenario, where the digital makes up such a small part of the overall resources, the impact of the digital would be minimized. For the field as a whole, the presence of a critical mass means that a

⁹⁰ This problem is in part responsible for the view of humanists as luddites as they would often continue to use card catalogs long after online systems were available because the card catalogs were more complete. In other words, until all of the information in the card catalog was transferred to the online catalog, the latter was not useful because it did not facilitate their search process.

significant amount of work can be accomplished by scholars and students using only resources available online. For the professor above, for example, it means that his students studying for master's degrees can do all or most of their research online.

If a critical mass of digital resources is not present in a field, there is evidence that the digital resources need to be very tightly integrated with the analogue resources—in other words, there needs to be a seamless means of access between print and digital resources. One librarian and textual scholar explained this elegantly, when describing why a digital project in Islamic studies was not as successful as she thought it might be:

The *Book of Curiosities* is a wonderful project, but we have the feeling that embedding with the mainstream Islamic scholars hasn't happened. I was speaking with the faculty member who was doing this and she has a contract with Brill to do a more conventional book and we were wondering why is it not embedded and one of the things that we came up with is that it stands alone. And if you are going to do your research in a traditional way, most of your resources are in printed books. And you sit down with your papers and books and you spread them all around you and you flick through them, and one digital resource—even if you've got wireless—just doesn't fit in there. You know, if it was one of many, people's research habits might be changing, but it is just a loan article out there.

This explains precisely the kind of situation that Tibetan and Himalayan studies has been able to surmount. Scholars in this field go online regularly because they are confident that it is time well spent, they know that there will be resources there that they can use.

The field has achieved this critical mass of digitized content in part because of the particular nature of its primary resources. At the heart of much of the original research in this area is rare and difficult to access texts. Most scholars in Tibetan and Himalayan studies work with materials that are difficult to access due to their rarity (i.e., there are restrictions put in place by the holding library or archive), to their physical location (e.g., they are far away or in difficult to access locales), or to their obscurity (e.g., they are part of un-catalogued or poorly described collections). Looking at this within the context of the principle of simple usefulness introduced above (see section 2.4.4), the relative rarity of texts in this field in some way sets the bar quite low for digitization projects. Simply by providing online access to these texts, digitization projects are

meeting a basic need of these scholars—facilitating use of materials that are otherwise difficult to access.

9.2.2 The community of Tibetan and Himalayan scholars.

A 2007 report from Rice University's Fondren Library (Spiro & Segal, 2007) correlated the likelihood of use of digitized resources to the rarity of the materials being provided. The 2009 study by Meyer et al., confirmed these findings, and further emphasized the delicate balance between the rarity of materials and the existence of an extant scholarly community:

...digitizing hard to access materials is more likely to attract users to the digital version of a resource than digitizing a relatively easy to access set of materials, such as writings on and by a popular author. This of course is a Catch-22: if materials are too difficult to access, it is less likely that much of a scholarly community has developed around those materials. If there isn't an extant scholarly community, the resource will rely on scholars moving into that area of study, which is relatively difficult to inspire given established disciplinary habits. Thus, building a digital collection with a broad impact requires a delicate balance between finding materials that are highly desired, but relatively difficult to gain access to (Meyer et al., 2009, p. 14).

The presence of a community is significant because the act of digitizing and making something publicly available is essentially an act of sharing. When choosing to do so as an author, digitization means taking your efforts, your work, and sharing it with your colleagues or with the general public. As Hellqvist (2010) points out, in much of the humanities, the border between the research and the output of the research—the writing—is often blurry. So in the humanities, the collocation or indexing or translation of a text—the creation of a new edition of an old text—is not only a primary resource, but also someone's research output. Therefore, making such a text available is to make both the input and output of one's work available. And as Borgman points out (2007) (and was discussed in section 8.2 of this thesis on reward systems), scholars in the humanities are rarely rewarded for these efforts.

However, the case of Tibetan and Himalayan studies reveals a quality that illustrates not only why this particular field has such a large number of digitization projects but also why *together*

these projects have succeeded in changing the inputs, practice, and outputs of the scholars in their field: the digitization projects studied here have all been created inside a strong and extant community of scholars. The characteristics of this community manifest in several ways that are significant to studies of digitization projects and their success. The present study reveals that scholars in Tibetan and Himalayan studies have a long history of sharing resources, that their strong communal ties are strengthened by widespread feelings of marginalization, and that they share a common faith, practice, and passion for their work.

9.2.2.1 *Sharing resources.*

Although not explicitly rewarded, sharing amongst scholars in this field is well embedded in their scholarly practice. The scholar mentioned above who felt he “should” be spending time contributing to the betterment of an online project (see section 7.3 on collaboration) is one example of this, and the interviews with scholars revealed several others. Several of the students and faculty mentioned instances of electronic copies of works being “passed around” amongst colleagues, including several mentions of scholars downloading texts from subscription databases and sharing them with colleagues who did not have access to that resource. For example, a graduate student who recently transferred to an institution with a subscription to the *Tibetan Buddhist Resource Center* from one without a subscription used to rely heavily on colleagues to download texts for him: “I was just a beggar out there on the streets trying to get people to give me one of these texts.”

Over the course of the interviews, the scholars in Tibetan and Himalayan studies revealed feelings of obligation to contribute to communal projects, as well as a strong sense of community that encourages people to share the particularly useful or rare resources that they have.

There were numerous mentions during the interviews of scholars hand-keying or digitizing a resource and sharing it with colleagues. Some, like the following example, referred to reference materials that were made infinitely more usable by being made searchable:

And there is a big three volume Chinese Tibetan dictionary, which is also online. Um, not online, it is being passed around. There is a different story. Some things are online, and some things are passed around.

Interviewer: Passed around meaning that they have scanned it and sent it around?

Yes, or well in this case there is a program that it is done in—TomeRaider. TomeRaider is evidently quite good for this. It is all typed in, and they have stripped out the Chinese. And it is the real standard, you know it is the one that Van der Kujip would go to if he doesn't know a word or its meaning. But he would use the paper copy, but all his students were using it we would be sitting in class and be able to look something up before he can even get to the shelf.

Interviewer: So someone has transcribed it and passed it around?

Yes, all three volumes.

Other scholars spoke more directly of a sense of community:

Interviewer: Did you find that often the case in this field? That people are willing to help out and share?

Yes, well, everyone is very congenial. And most of the people—the ones I've met anyway—come to it through Buddhism, so there is some kind of community aspect to it as well. Yeah, quite often someone would come around with a disc and hand it around, or send around an email.

The processes for sharing amongst Tibetan and Himalayan scholars is in no way formalized, rather, it is opportunistic and driven by word of mouth. A doctoral student explains:

I saw [a colleague] in India at a translators' conference and he was saying that they didn't produce enough copies of the index to the Beijing Tenjur and he said to me, you should really get a copy from [another colleague]. I said, what do you mean? He said, he has an electronic copy of that. Very few people have it, get it from him.

These instances of sharing resources in combination with an explicitly articulated sense of obligation to communal projects indicate that while Tibetanists are relatively few and scattered, they are on the whole a strong community. These strong ties result on the small scale in individuals assisting their colleagues but on a large scale provide a possibly unintended benefit of in the overall support for digitization projects. As one of the database developers on one of the sub-cases described: "there is community development that happens around these projects, they force a community approach."

This “community development” revealed itself in several explicit ways over the course of this research. For example, the Library of Tibetan Works and Archives (LTWA) in Dharamsala, India receives regular help in its digitization efforts from several libraries in Delhi. In digitizing one of their most important sutras, for example, they sometimes discover pages with particularly low contrast or that are similarly illegible. In these cases, a library in Delhi scans a page from their own copy and provides the image to the LTWA at no cost.

Another project director spoke about help he had received from a colleague in the early days of his digitization project:

Before he was at Virginia, he was in Alabama and he was quietly supporting us with this amazing sheet-feeding scanner that he has. We were sending him boxes full of things and he was getting work-study students to process it all. You know, without any desire for fame and glory, so he is one of the quiet collaborators.

This same project that was receiving this quiet support from collaborators, in turn, supports other projects in the field, co-hosting and mirroring web sites and collections to help preserve sites from countries with less stable infrastructure. They also have more straightforward collaborations with places such as the Centre for Bhutan Studies. “They produce the pdfs and we host them.

Their site went down for a year so it turned out that it was good that we had them.”

A project director and Tibetanist describes what he sees as the strong community and support for collaboration in his field [emphasis added]:

It has been across the board such a drive for collaboration—for people working together across divides who many not otherwise work together. It’s also enabled people to communicate and share and collaborate despite the geographic distances that separate them. **I think there is this inherent thing in digital technology in higher education to get people to think in terms of working with other people.** And there may also be some other parts... **it allows us to visualize communities and networks and space and this potentially encourages us all to think more in those terms than just our raw cognitive structure.** We see these videos, we see people talking, we see the geographical diversity that we are working over. We **see a social network of people** and all these things just remind us that these are real people and diverse communities. I think for projects that are necessarily about social agenda or focused on a community there is this social side to computing.

For this scholar, the technology—in particular the social nature of networked infrastructures and environments combined with the acceleration of communications that the Internet allows—both supports and drives this communal spirit. This communal spirit is then manifest in the community's collaboration on and literal support for digitization.

Yet, it could easily be argued that all academic disciplines now inhabit this same space—that is, that all have the same access to the same tools. So why has Tibetan and Himalayan studies developed such a strong, collaborative community? And has this community been created by or simply facilitated and strengthened by Internet technologies?

9.2.2.2 A marginalized community.

Several of the responses from scholars indicate that Tibetan and Himalayan studies already had a strong sense of community that has now been further enabled and intensified by access to network technologies. By some accounts, this sense of community was facilitated by a general feeling of being not as well supported as other disciplines and of generally being marginalized within academia.

I would say one issue is that when you look at the fields that are relatively less well supported there is more of an acute sense of the needs for new solutions and new strategies. So if you are in American studies or English lit there is more of a sense of well, we've got some good stuff here, some good text books, some good sources and there is not as much of an appetite for possibly going off somewhere where things are a bit rough. Whereas if you are already in that situation it doesn't look so bad to get into a rough situation. Or have to get some more resources or some more strategies. So I think that part of it is the less commonly taught languages and cultures—precisely because they are under resourced—they have poor instruction manuals, poor reference sources, they are interested in new strategies that might allow or enable them to leapfrog past their more established cousins. So I think that is one big issue behind it.

According to several scholars, network technologies have not created the community of scholars, but have helped to strengthen both their sense of and ability to participate in the community of Tibetan and Himalayan scholars.

This idea is also supported in the broader humanities by a theory recently explored by Dan Cohen and Jim Chandler (Cohen, 2010), two of the thought leaders in the digital humanities movement.

In his paper at the recent conference, *Online Humanities Scholarship: The Shape of Things to Come*⁹¹ Cohen correlated the stability and security of particular humanistic disciplines to particular types of digitization projects [emphasis added].

Jim Chandler and I have been formulating a rule of thumb for these editorial projects: **the more a discipline is secure in its existence, its modes of interpretation, and its methods of creating scholarship, the more likely it is to produce stripped-down, exchangeable data sets.** Thus scholars in papyrology just want to get at the raw sources; they would be annoyed by a Mac-like interface or silo. They have achieved what David Weinberger, in summarizing the optimal form of the web, called “small pieces, loosely joined.”

On the other hand, the newer and less confident disciplines, such as the digital geographic history of Civil War Washington, Hypercities, and Grub Street **feel that they need to have a Raskin-like environment**⁹²—**it’s part of the process of justifying their existence.** They feel pressure to be judge, jury and executioner. If the Cohen-Chandler law holds true, we will see in the future fewer fancy interfaces and more direct, portable access to humanities materials. (Cohen, 2010)

According to most of the interviewees, Tibetan and Himalayan studies would clearly fit into what Cohen describes as the “newer and less confident disciplines.” At the risk of romanticizing the situation, such feelings of being under-resourced and marginalized may explain some of the reasons for the development of a community that supports each other.

On the other hand, there is no guarantee that a marginalized field will react to adversity by banding together. Perhaps it is just as likely to develop a cutthroat, every-man-for-himself, competitive atmosphere. Yet, while there was certainly some evidence of competitiveness or even downright cattiness from some of the interviewees,⁹³ the overall characteristic of the field is dominated by a sense of collaboration and community.

⁹¹ All of the papers from this conference are available from the conference web site (<http://shapeofthings.org/papers/>) (*Online Humanities Scholarship: The Shape of Things to Come*, 2010).

⁹² This is in reference to an earlier part of the paper, where Cohen presents Jef Raskin’s 1979 “Design Considerations for an Anthropophilic Computer.” Raskin was one of the first employees of Apple Computer and the designer, with Steve Jobs, of the first Macintosh.

⁹³ One example of this is a comment making reference to an argument regarding Tibetan Unicode fonts: “It has come to our attention that Tony Duff has made a number of erroneous and misleading criticisms of the work THL has done on the Tibet Machine Uni font to a mailing list that he runs. We will be posting a systematic reply to the comments that recipients have kindly forwarded to us; we have no way of course of responding to comments that we have not seen. We have no interest in engaging in a conflict with Mr. Duff, but we also feel it is important to respond when erroneous and misleading comments are made on our work.” From the Tibetan Machine Uni web site (<https://collab.itc.virginia.edu/access/wiki/site/26a34146-33a6-48ce-001e-f16ce7908a6a/tibetan-machine-uni.html>).

9.2.2.3 *The influence of Tibetan Buddhism.*

Another way of understanding the influence of community on the practice of the scholars in question is to look at the influence of Tibetan Buddhism on the scholars themselves and the discipline as a whole. This relationship surfaced in at least three different ways in the data from this research: (a) through a sense from the scholars in this field that the people and culture of Tibet need to be “saved”; (b) through discussions of the deep scholarly and textual traditions entwined with the Tibetan Buddhist practice; and (c) through a recognition that most scholars in Tibetan and Himalayan studies have come to the academic field through a Buddhist practice and that many of these scholar/practitioners naturally have an affinity for technology.

As seemingly the strangest of connections, it is perhaps best to start with the last of these points. As was described in Chapter 5, Tibetan Buddhism has a long history with and affinity for technology, particularly with regard to text. For hundreds of years practitioners have sought ways of automating the rotation of texts, which serves to symbolically release the texts and the prayers printed on them. There have always been powerful associations with performing the deed of setting text into motion.

Without making claims of causality, this connection between Buddhism and the technically savvy arose during several of the interviews. When asked why they thought there were so many digitization projects in this field, several respondents mentioned the connections between practice and study. One senior scholar, for example, said, “there just happens to be a lot of people who are working in Tibetan studies who are also ‘nerdy’ ...good with technology. Like David Germano who has played a big role in pushing this.”

Several others cited Tony Duff as an example. Duff is the founder of the Tibetan Computer Company.

The Tibetan Computer Company was established in 1986 for the purpose of developing high quality Tibetan-script capable software for the use on the IBM PC platform. Since then the company has developed software for use with the Tibetan language in Windows

and Macintosh environments. The Company is famous especially for its fonts which are regarded as the best in the world. The Company is located at present in Kathmandu, Nepal. The Company Director and software/font developer is Lotsawa Tony Duff (Duff, 2010).

Duff is also director of the Drukpa Kagyu Heritage Project (DKHP), a project that similarly links texts, digitization and publishing:

The DKHP is a project for the purpose of collecting, preserving, archiving, and re-publishing the texts of the Drukpa Kagyu tradition of Tibetan Buddhism. The idea for the project came from Tsoknyi Rinpoche III, an important tulku of the Kham branch of the Drukpa Kagyu. The project itself was started, funded, and executed by Lotsawa Tony Duff, a well-known translator. The office in Kathmandu, Nepal, was opened in January 1993. Approximately 2000 titles were input and corrected to the year 2000. At that point, the work was printed on paper. In 2002, 500 sets of 101 volumes per set were printed in India and distributed to Tibetan monasteries in Tibet, mainly, and India and Nepal.

In tandem with the Tibetan Computer Company the project developed the methodology and software necessary for doing this kind of work and has provided it to nearly all of the major Tibetan Buddhist text preservation projects which are spread throughout India, Nepal, Bhutan, and the rest of the world. Since the publication on paper, Lotsawa Tony has been preparing special software as a vehicle for electronic editions of the texts. The software was completed in 2005 and the initial offerings of electronic editions have been made (Drukpa Heritage Project, n.d.).

These projects once again support the links between technology and Tibetan texts, but in his biography on his web site that Duff makes the link between his work and his Buddhist practice.

“Mr. Tony Duff is Australian born but lives in Nepal where he works as a translator and Buddhist scholar. He has been a practitioner of Tibetan Buddhism since 1972 when he first arrived in Nepal in his very early twenties” (Drukpa Heritage Project, n.d.).

Jeff Wallman, executive director of the *Tibetan Buddhist Resource Center* could also be said to fall into this category. With a history in both information technology and a practice in Buddhism, Wallman said he, “came into this because he was a Buddhist,” which he said is common amongst his colleagues, “people feel passionate about it and want to help, so they get involved.”

The vast majority of interviewed scholars—whether involved in creating digitization projects or not—came to their academic discipline through a practice in Buddhism. As one young scholar confirmed, “most people get into this through an interest in Buddhism.” A Professor of Tibetan and Himalayan studies agrees, saying that “a majority” of his students are practicing Buddhists.

Interviewer: Do they come to it from the study or does the study come from the practice?

I think it works both ways. I wasn't interested in any practice when I started at all. And then I lived in Nepal for five years and I saw people do things on the ground and I became interested. To be frank I don't practice an awful lot, but to what little I have done and what I have seen has informed my work and continues to inform my work, no question about it. So I think it is essential for people who do this kind of work to do some practice, even if they think it is scandalous, even if they don't believe. Because without it you are going to miss half of what you are reading.

These observations also mean that students come to their studies with a romanticized notion of Tibet and Tibetans:

Interviewer: Does that complicate your work, because students come in with this very romantic notion of Tibet?

No, not at all. I don't beat around the bush at all. We start reading biographies and whenever you read the biographies you start to realize, you start to see the reports of lord so and so waging war against lord so and so or monastery so and so waging battle against monastery so and so. So they quickly get weaned off their notion of Tibet as a zone of peace and internally happy place where everybody is smiling and drinking tea. They get a reality dose from me.

This link between practice and study may seem inexplicable from a logical standpoint, but the reason may itself be embedded into Tibetan Buddhism. A number of scholars mentioned the long-standing link between not only the culture and Tibetan Buddhism and the text, but between the practice of Tibetan Buddhism and the text. It is a practice that not only values the text, but rewards literacy and scholarship. From a senior professor of Tibetan and Himalaya studies:

I would say that Tibetan Buddhism is a culture of the text. It goes back to the sixth century. And whether or not Tibetans are literate—and many Tibetans are literate—there is this cult that is organized around the word, around the printed expression and it goes back many centuries. There is an extraordinary literary output for pre-modern cultures in Tibet and I think that that reflects the deep commitment to text to its production, to its replication and of course that is one part of digitization, of digital humanities. After the cultural revolution there was this huge explosion of printing and of documenting Tibetan culture.

When asked to describe the relationship between Tibetan Buddhism and text, and more specifically whether digitization is a logical extension of the Tibetan Buddhist practice and reverence for text, one professor mentioned the relationship as simultaneously imagined and real:

It is a logical extension, it is also fluff or jazz. I mean the idea of having prayer flags that

wave in the wind and the idea that they positive qualities of those prayers gets carried on the wind. Or the carved stones in the water and the positive qualities get dispersed by the water. It is a lovely idea, it is a romantic idea, I love the idea but that is what it is. But what is really interesting in Tibetan Buddhism is very much text oriented. And scholarship is really appreciated. There are many epithets for when you want to call someone a learned person in Tibetan. And learnedness and scholarliness is always seen as a positive quality in Tibetan Buddhism. Which mean textual knowledge.

Later in the interview, this scholar also makes the connection between scholarship and practice.

Ideally of course, textually knowledge goes hand in hand with practice. In the university setting, though, there is an assumption that you don't practice. If you teach Tibetan in a university setting, if you write scholarly articles you are automatically someone who is only interested in the text and not in the ideas or the practices. This is very typical. We very quickly forget that when you read this Tashi so and so, yah this Tashi knows a lot about books, but he also does a lot of practice. Curious. A little myopia there.

This sentiment was echoed by Chökyi Nyima Rinpoche, the abbot of Ka-Nying Shedrub Ling Monastery and founder of the Centre for Buddhist Studies at Kathmandu University.⁹⁴ In a documentary film being made about E. Gene Smith, there is a scene where Chökyi Nyima Rinpoche is teaching to a large class. Rinpoche begins to speak about the work of Smith (who is in the audience and shortly to present Rinpoche with the complete set of digitized texts from TBRC). In just a few sentences, he makes a strong connection between the practice and study of Tibetan Buddhism and by way of reference to Smith, to the digitization of texts.

So, also in Tibet very important, whoever studies, they need to practice. So now, the teachings of Buddha is not only in Tibetans hands, now, teaching of Buddha is in each of your hands [gestures to the students.] So good practitioner needs to be scholar. Good scholar needs to be practitioner. Isn't it Mister Gene? [gesturing to Smith]

This scene ends with Smith presenting a small "Mac Mini" computer to Rinpoche that contains eight thousand digitized texts. Rinpoche makes a joke about doing prostrations to the computer (Figure 45) and calls Smith a "jewel and gem."⁹⁵

⁹⁴ For more information about the Centre for Buddhist Studies see their web site (<http://cbs.edu.np/about-us/>).

⁹⁵ This clip was given to the author by E. Gene Smith and is part of a forthcoming film called "Digital Dharma: One Man's Mission to Save a Culture." For more information see the film's web site (<http://www.digitaldharma.com/>).

Figure 45: Chökyi Nyima Rinpoche, the abbot of Ka-Nying Shedrub Ling Monastery (center) receiving a Mac Mini computer containing eight thousand texts from Gene Smith (right). He lifts it to his head and recites a blessing.



9.2.2.4 Saving Tibet.

Adding the final element to what could almost be described as a sort of perfect storm—a coming together of a scholarly, text-based practice that reveres the copying of texts with those who are technologically savvy—is the overall impression that Tibet, and the Himalayan region more generally is in need of being “saved.” At the heart of all of the popular support for and romanticization of the Tibetan practices and culture mentioned in Chapter 5, is a notion of wanting to help protect the Tibetan people and their culture. This is not simply an idea that permeates popular culture, it is heavily engrained in the scholarly disciplines as well. To the question of why there are so many digitization projects in the field of Tibetan and Himalayan studies, most respondents first mentioned something about the scale and scope of the cultural collections. Most, however, then spoke of a need to “save” and/ or “preserve and protect” the

culture and its people. From an interview with a manager of one of the larger digitization projects:

Interviewer: Why do you think there are so many projects in this field?

There is an extraordinary wealth of information. It is an awe-inspiring civilization that has captured the imagination of so many people. And it is freshly available, and new. And there is also this threat somehow and what better place to devote your time and energy for this extraordinary culture. To use all these tools and this innovation to help these people. I think at its base is this extraordinary amount of information and the fact that the area is under threat. That the projects have just mushroomed.

The idea of using these digitization projects to “help these people” was echoed again and again by both the scholars and the project staff.

One project member—like many scholars in this area—fell into the role of scholar and academic because of a passion for the people and the geography. “I went to graduate school because it was the easiest way to get the money to study Tibetan language and Buddhism and go to Asia.” After a while of teaching, during a period of self-reflection, he thought about what to do next:

And then I went on sabbatical, my pre-tenure sabbatical and I started to think, why am I at this university, why do I want to stay at this university because it is not sufficient to say that I just get income out of it? And the main thing that was driving this reflection was that I had spent so many years in a deep relationship with this community, with this set of communities in the Tibetan plateau. And I felt the need to do something helpful, something relevant. To address that ethical call that these communities have on me. And so the digital technologies for me were first and foremost driven by that sense of a moral imperative. And so what I was thinking about during that year in Tibet, this insight I came to was that what I did work with was knowledge and that knowledge crucial to the future of Tibetans. And that knowledge was crucial to the future of Tibetans. Knowledge in the sense of the shape that these kids future took depended on their education...depended upon the way knowledge shaped and informed their being. And that knowledge could be this kind of social currency, whether it was through nonprofit work or social work or other kinds of work. That if properly connected to community, communal awareness, communal care could be transformative. And so I went back to [my university] thinking this is what I should do. Why, I don’t know. I had this sense of knowledge, beauty.

There is something very rare—if not fundamentally unique—about Tibetan and Himalayan studies and its mixture of religious practice, popular culture, and drive to preserve a people and

practice. Other academic disciplines deal with rare texts, but Matthieu Ricard⁹⁶ describes why this idea of saving Tibetan culture and practice is different from scholars in other disciplines.

It is well known that all the Incas libraries were completely burned. Now if we were to find them now, it would be very interesting historically, but you know, it is no longer a living tradition so it would be more a question of scholarship and finding out what they were doing, what kind of texts they had. But in the case of Tibetan Buddhism this is a question of life or death for a living tradition.⁹⁷

One project director describes perhaps why this notion of wanted to save this culture and people is manifest through technology:

The fact that again Tibetans have big geographic space, low population, big barriers between communities in terms of both environmental and geographical distance and then in addition to that in their current situation they have a lot of challenges before them. And because of that I think there is an interest in creatively exploring solutions that might allow you to imagine how you could surmount the gap between huge challenges and modest resources and so when you think creatively these days, digital technologies is just one step away, because that is a place where we know a lot of creativity is happening and we know that a lot of extraordinary transformation is possible.

Again and again in the interviews, the uniqueness of the situation that brings together technology, scholarship, philanthropy, and religion came up.

...again, because of the intense global interest, you have people from outside—videographers—and they go to Tibet and they want to do something. Do they go to Timbuktu? I don't think so. There are a lot of places in the world that are just neglected. And you get people with certain capacities and they come and they want to use those capacities. So I think that is how the intense international interest.

[...]

Another factor driving it could in part be that this is a field that has a close relationship with a community, which is not true of all fields. And it is a community that we are separated from by several degrees of inequity. So I think there is something with the digital side that has to do with that sense of a moral claim on us, which, do you really feel if you are doing English literature? Whose moral claim? And a lot of fields are like that, you may love France, but come on, there is no inequity there. So I think that has been part of it too. I know that a lot of the bigger projects were driven by some sense—like ours—to pay something back to those communities or help contribute something back to those

⁹⁶ Ricard is a Buddhist monk from Shechen Monastery in Nepal. He is also a well known photographer and intellectual. For more information see his web site (<http://www.matthieuricard.org/>).

⁹⁷ This quotation was transcribed from a clip from the film *Digital Dharma*, which has not yet been released. The clip is available from: http://www.lunchboxcommunications.com/flv/DigitalDharma_Shechen_LboxW.html

communities.

These digitization projects are part of a cycle of practice and awareness that bring a wealth of resources to projects in this area. In return, projects in this area bring even more awareness to the plight of Tibet and its people. As described by one faculty member, this process has attracted a “financial elite” who continue to help fund these projects.

Interviewer: So why do you think there are so many projects going on in this area, in this field?

Yeah, it is because there is a certain elite if you will, who make these things happen.

Interviewer: You mean practicing Tibetan Buddhists?

Yes, who have the financial wherewithal to make these things possible... And the room is still there for Tibet to be the world beyond the worlds. The poor Tibetans. It all plays into this. It all feeds into this... These waves of donations that pour into Tibet. I mean people still sponsor a poor Tibetan in India who has a couple of Indians working for him out in the fields because they don't want to work out in the fields. I saw this myself back in the eighties... I was astonished, the Tibetans didn't live high on the hog, but all of their Indian neighbors were working for them and they were sitting there drinking tea. That was the poorest camp...

Importantly, it is not necessary to actually believe that Tibet or its culture is under threat, the importance lies in the pervasiveness of the idea itself as it is projected and sustained.

And the preservation thing really comes with a sense of urgency that goes back to 1959, and I think that is really a big part of this. Even if we might not buy into that totally, it is an emotional undercurrent to all of this that I don't think anybody has talked about in a big way.

Whatever the cause or spark that formed this intense and complicated relationship, it has clearly had an influence on the prevalence of digitization projects in the field. The prevalence of the projects has, in turn, been partly responsible for the success of digitization as a whole across Tibetan and Himalayan studies.

9.2.2.5 On ‘giving back’ and digital repatriation.

If there is a sense from scholars in Tibetan and Himalayan studies that they work in a field that is marginalized within academia, this is minimal compared to the passions with which these

scholars advocate for the communities they are studying. Most of these scholars are reminded daily of the threats that face the Himalayan region. Whether real or imagined (see section 5.5 for more on the romanticization of Tibet), one of the strongest forces driving the sense of community is the constant threat that Tibet faces from China. The political situation, combined with the literal fragility of the materials from these cultures creates an urgency to do something to preserve the materials and the identity of the people.

The successes of individual projects in using digitization to repatriate and rebuild collections will be discussed in more detail below, but it will first be looked at as a cumulative success across the discipline. Each of the digitization projects analyzed as sub-cases for this research listed “giving back to the community” as one of their primary reasons for wanting to digitize the materials. Evident in the interviews was a deep sense from all of the project managers and staff that the collections with which they are working were taken from somewhere and relocated in the West; and one of the goals of these projects is to “return” these materials in some form. One scholar summarized this commitment:

The rewards for the Tibetan can be the greatest because we have at least theoretical access to all of this, we can fly and do research, whatever. But for Tibetan communities with no access to funds or to the originals, they can now suddenly look up, learn about, their heritage online without having to undergo any trouble, providing they do have access to the Internet. So I think that in the long run the Tibetans stand to gain the most. There is also a certain amount of funding that pours into the area because of these projects. We had our inputting done by Tibetans in Chengdu. In the large picture we helped a good number of families to make a living and learn how to type and to learn to use a computer and that may be kind of small but it is a step in the right direction.

Each of the embedded cases expresses on their project web site a commitment to these audiences and this cause of repatriation. The *International Dunhuang Project* is perhaps the most vague:

IDP aims to bring these wonderful resources to the attention of people outside the scholarly world by talks, publications, educational events and exhibitions (“About IDP—Activities,” n.d.).

The Tibet Album speaks more directly about making the site usable for a Tibetan audience:

For The Tibet Album we have tried to provide entry points from Tibetan perspectives, rather than merely reproduce a Western museum structure (Harris, 2006).

Each of the other sites makes direct mention of their goals incorporating activities that promote access and use of their materials by users in the source communities.

Tibetan Buddhist Resource Center

TBRC preserves literature, but ultimately it is a community that sustains a tradition. In order for that to be possible, people must have access to the literature. TBRC estimates that there are roughly 1,000 monasteries and more than 250,000 monks, lamas, and interested readers who could benefit from direct access to the TBRC Library. This interest will increase over time as more individuals discover the literature (“Creating a digital path to Tibetan literature,” n.d.).

Digital Himalaya

At inception in 2000, the Digital Himalaya project had three primary objectives:

1. to preserve in a digital medium archival anthropological materials from the Himalayan region that are quickly degenerating in their current forms, including films in various formats, still photographs, sound recordings, field notes, maps and rare journals
2. to make these resources available over broadband internet connections, coupled with an accurate search and retrieval system useful to contemporary researchers and students
3. to make these resources available on DVD to the descendants of the people from whom the materials were collected by making them both easily transportable and viewable in a digital medium (“Digital Himalaya: Overview,” n.d.)

Tibetan and Himalayan Library

Secondly, we hoped that THL could be an initiative that brought social benefit to Tibetan communities through engaged scholarship, support of partnerships between NGOs and academics amongst others, and direct work with local communities in their production and use of knowledge. Thus we hoped THL could become a support of engaged scholarship whereby academic researchers, teachers, and students were encouraged and supported in exploring how their work and activities could benefit Tibetan communities socially; a neutral base for new social partnerships to be envisioned and practiced; and a means for new models of local community participatory research and use of knowledge (Tibetan and Himalayan Library, 2010).

Beyond each of these public statements, each of the project staff interviewed directly mentioned repatriation, giving back, or providing access to the cultures from which the materials originated as one of their goals. One project manager says the first goal of the *Tibet Album* was a sort of virtual repatriation. They were hoping “that the project would be used by Tibetans in creative ways.”⁹⁸

⁹⁸ This of course also means that it can also be used by China in creative ways. On a visit to Lhasa, for example, this project manager encountered some of the photographs from her book in an exhibition about Tibet. They were being used to illustrate the extravagance of the Tibetan monarchy.

Collectively, the digitization projects in Tibetan and Himalayan studies have made remarkable gains in actually providing access to their given materials to the indigenous cultures from which they originated. This is evident in numerous individual instances of use, which will be discussed in more detail below, but can also be seen overall, in the cumulative inlinks from countries in the Himalayan region. Each of the five sub-cases had inlinks from Nepal, India, and China, while three of the five had inlinks from Bhutan.

9.2.2.6 *Passion, personal commitment, and a moral imperative.*

As discussed throughout these findings, the influence of Buddhism and the blurring of lines between scholarship and practice has led to the creation of large numbers of digitization projects in Tibetan and Himalayan studies, but there also seems to be something unique about the passion and personal commitment of the scholars who engage in projects in this area. Discussions of “moral imperatives” pervaded the interviews with faculty and project staff and it is evident that most took large personal and professional risks in engaging in this work. Certainly, Tibetan and Himalayan studies cannot lay exclusive claim to this sort of work ethic (it can certainly be seen from some of the pioneers of digital humanities who risked personal reward and gain to do something they saw as worthwhile), yet the concentration of those with these qualities in Tibetan and Himalayan studies may provide further explanation of why digitization is so well embedded into the scholarly practice.

Jerry McGann, for example, has *never* written of a “moral imperative” to build the Rossetti archive. The scholars and “experts” interviewed for this research from outside of Tibetan and Himalayan studies spoke about the hard work, the difficulty of having their work recognized by colleagues, but never about a personal, moral, or ethical obligation that they felt to engage in digitization. Yet, over and over again this “moral imperative” came up in regard to the projects in Tibetan and Himalayan studies. One project staff member tied the prevalence of digitization project in Tibetan and Himalayan studies directly back to this sort of personal commitment.

How much the people have a personal investment in this area that isn't in other disciplines. A strong personal commitment is the key to success in the projects—and it is all tied to a bit of scholarship that people think this will allow.

Many of the Tibetan scholars interviewed recognized a “moral imperative” in their colleagues more readily than in themselves, citing several of the project leaders directly. One of these leaders also saw this characteristic in himself as a primary reason for his work. He described this moral imperative as a manifestation of his caring for people:

We only have a certain number of people that we can care about and we have to set certain boundaries. How much can we care about each individual person? How much can we see the profundity in any individual? Our ability to hold the world together is based on our ability to see the profundity.

9.2.2.7 Leadership.

One of the most prominent outcomes of the personal commitment and moral imperatives of many of the project directors and staff is strong leadership. The leaders of several projects were mentioned directly as credited repeatedly with the success of their projects. For example, one staff member:

In the beginning it is kind of seductive to get involved in lots of projects and funders often have these subtle strings attached—ok we'll help you do that if you can help us build on this because this other thing is what we are interested in. So it has taken several years and Gene has been incredible with maneuvering the ship in the right direction.

While individual projects obviously benefit from the direction of strong leaders, what is more surprising was the oft-repeated claim that *all* projects benefited in particular from the leadership of two people in particular—David Germano, director of the *Tibetan and Himalayan Library* and E. Gene Smith, director of the *Tibetan Buddhist Resource Center*. Germano and Smith have achieved almost celebrity-like status in the field of Tibetan and Himalayan studies, and their names were mentioned over and over again as one of the key factors for the success of digitization across the whole field.

From a senior professor:

Interviewer: why are there so many projects in this field?

I think there is a number of ways to answer this question. At the personal level, we have two people—Gene and David—who have really dedicated their lives to preservation and access ... And they are both in their own, very different way, community builders. And they have both been able to garner a lot of money for these things. And the things that have driven that—on the TBRC side—it is really the difficulty of access to the primary materials. On David's side, that is certainly part of it, but the other side is a sort of moral imperative that David has set for himself to provide the kinds of research tools that we have in the west to Tibetans and to the Diaspora.

From a mid-career lecturer:

Interviewer: why are there so many projects in this field?

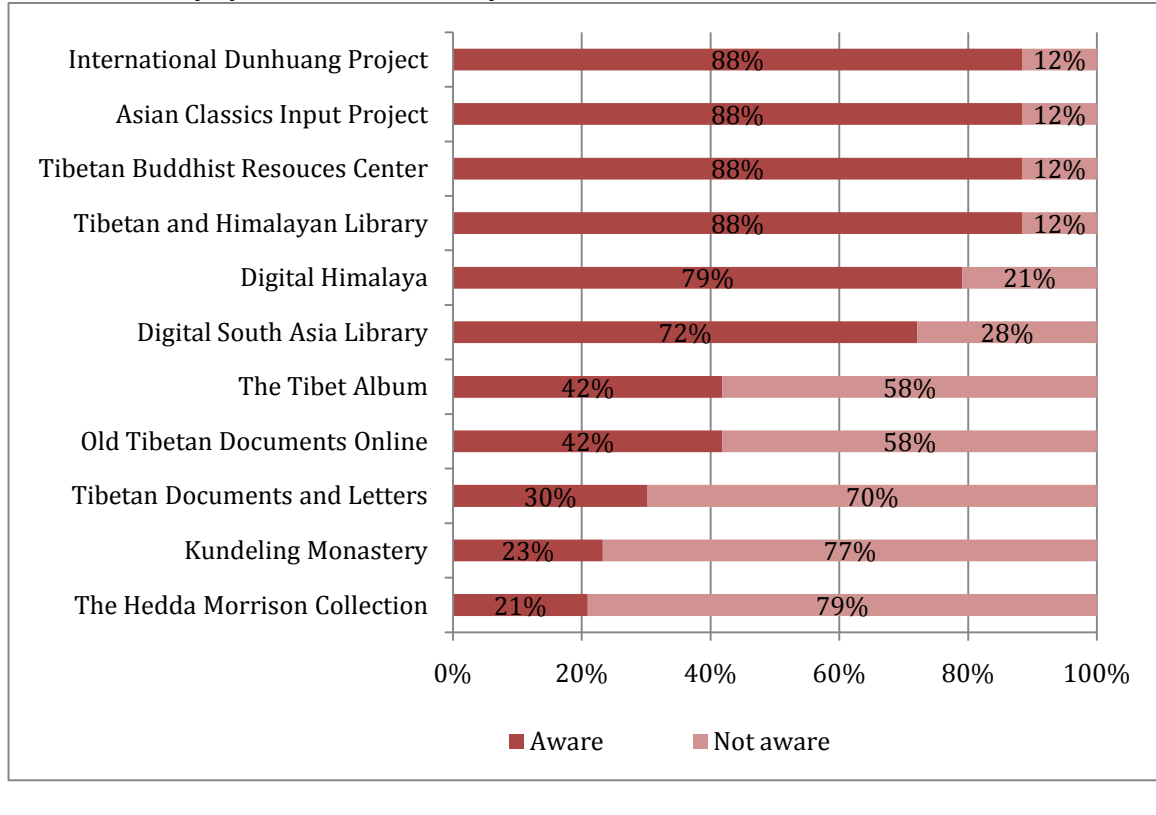
You would probably want to factor into your assessment that there are a number of people with strong entrepreneurial abilities who have gotten involved here. If you took Gene, for instance, and traced it back, his entrepreneurial flair showed up in his launching the whole business of Tibetan book publishing in India. So the activities on the digital side of it are an outgrowth of what he began, but still holding onto that ability to put pieces together and drive things forward that has always been a characteristic of gene. The same can be said of David Germano, who has a very different background. He is an academic, yes, but has brought that entrepreneurial flair to seeking funding and building projects in a way that is really quite remarkable. So if you remove those two individuals from the scene, I am not sure the Himalayas would have the same place they do now.

9.2.2.8 The role of community in dissemination and awareness.

As the presence of strong scholarly community contributes to the sustainability and overall success of digitization across the field of Tibetan and Himalayan studies, so too does it contribute to the overall awareness of the individual projects in the field.

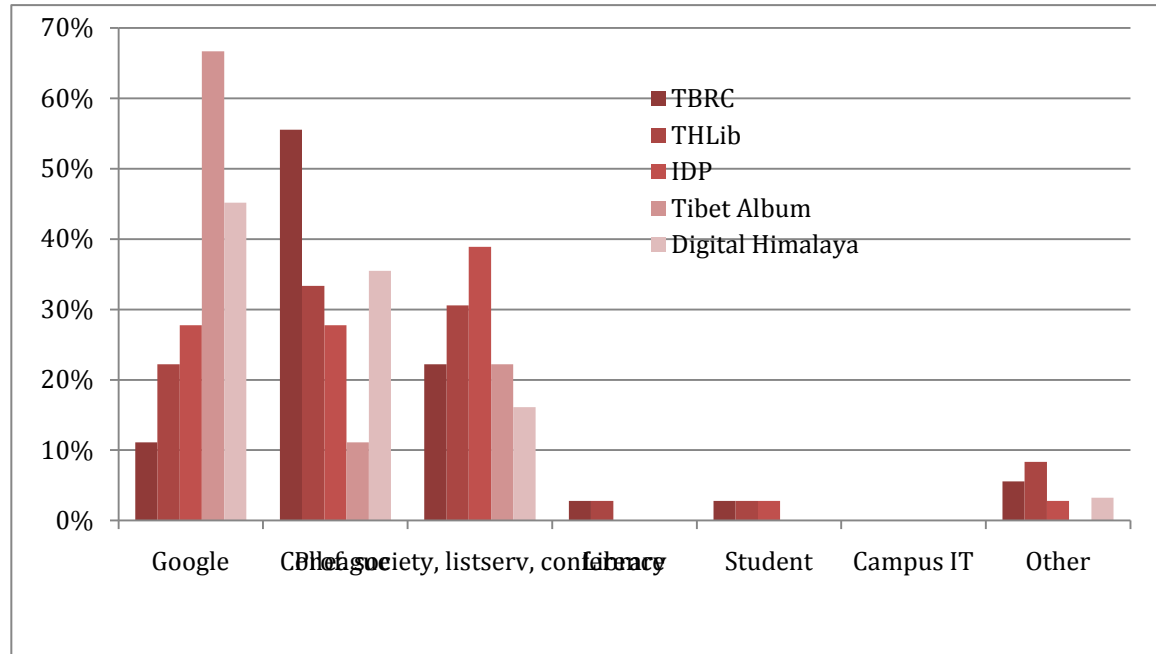
While there is still a significant amount of variation in awareness and use of the individual projects studied here (Figure 46), data from the online survey of Tibetan and Himalayan scholars indicates that the most heavily used projects have gained their popularity in part through the support of the community.

Figure 46: Awareness and use of digitization projects in Tibetan and Himalayan studies, from the online survey of Tibetan and Himalayan scholars.



It is admittedly difficult to compare the five sub-projects as they all contain such different materials. Still, the projects that rank highest in awareness, use and impact in both the survey findings and the interview data are those that were discovered through a colleague or professional society. For example, 56% percent of respondents to the online survey found out about TBRC through a colleague, 22% percent from a professional society, and only 11% (the lowest of all the projects) from a search engine (Figure 47).

Figure 47: How did you find out about this resource? Answers from the survey of Tibetan and Himalayan scholars.



	TBRC	THL	IDP	Tibet Album	Digital Himalaya
Google	11%	22%	28%	67%	45%
Colleague	56%	33%	28%	11%	16%
Prof. society, listserv, conference	22%	31%	39%	22%	16%
Library	3%	3%	0%	0%	0%
Student	3%	3%	3%	0%	0%
Campus IT	0%	0%	0%	0%	0%
Other	6%	8%	3%	0%	3%

Search engines were, on the other hand, the dominant means of discovery for the *Tibet Album*, but it was also the resource deemed as the least useful for research and teaching, as well as showing the smallest percentage of awareness from respondents of the five sub-cases. The project director now realizes the importance of dissemination beyond making your materials indexed in search engines and generally findable through web searched: “If you really want people to use your site, you need to keep going out to speak with people.”

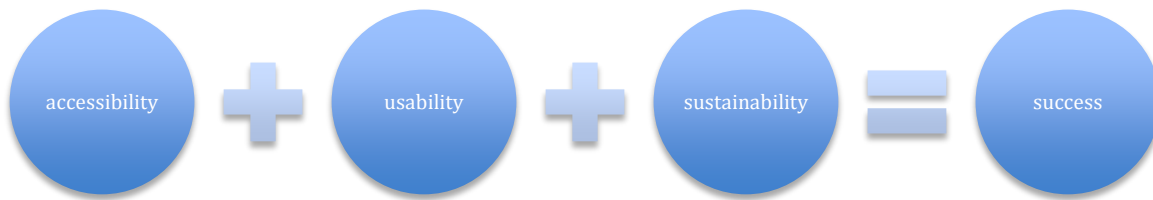
Most project staff and researchers alike can agree that dissemination is an important aspect of awareness and use (and therefore success). This is not a new finding, but repeats the work of others who emphasize the importance of a well-executed dissemination plan for the success of a digitization project (Madsen, 2009; Meyer et al., 2009; Warwick et al., 2006). The findings here—while not strongly conclusive—indicate that while overall findability is important, and more formal dissemination strategies are productive, word of mouth and dissemination through formal associations such as professional societies is arguably the most important means of dissemination in this field. This supports earlier findings by Barrett (2005), Buchanan, Cunningham, Blandford, Rimmer, and Warwick (2005), Borgman (2007), and Meyer et al. (2009).

9.3 On the Success of Particular Projects

Having determined, above, that digitization as a practice has been widely successful across Tibetan and Himalayan studies, why are some projects more successful than others? The success of digitization as a whole has been measured here by overall engagement in the process and use of its outputs (digitized works). Determining the success of individual projects will be done in very much the same light. The successful projects will be determined as “those that align the intentions of every participant, such that everyone is getting enough out of the project to sustain the continued contribution of whatever they’re putting in” (C. Mackie, personal communication, 23 January, 2009). In other words, successful projects are those that are sustainable. Further, they are those that are sustained because the needs of the participants (in this case the creators, managers, and users) are aligned such that everyone contributes toward that sustainability.

At the commencement of the data-gathering phase of this research, there were three variables that shaped and guided the measurement of success—accessibility, usability, and sustainability (Figure 48).

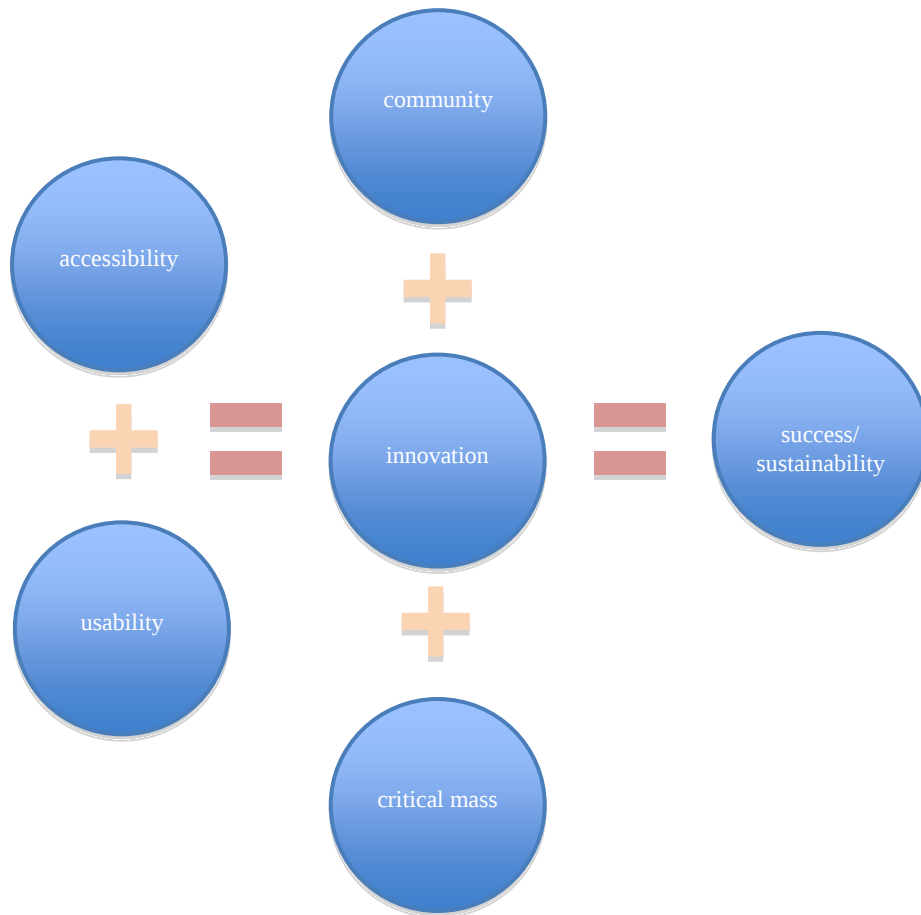
Figure 48: The researcher's hypothesis at the outset of this research was that accessibility, usability, and sustainability were the key variables for the success of individual digitization projects.



The latter, sustainability, has been incorporated into the definition of success itself. Through the course of the research, sustainability emerged not only as a variable for success, but also as a result or characteristic of success. Accessibility and usability also proved to be important factors for success, but the terms themselves are not inherently appropriate for accurately describing the particular variables that led to the success of the projects. That is, just saying that a digitization project is accessible and usable does not tell us why that project is successful.

The data from this research has instead led to a more nuanced understanding of accessibility and usability as variables for measuring *innovation* (Figure 49). Therefore, the factors for determining success of individual projects will be analyzed in terms of innovation. The term innovation is used here in a very literal sense to mean “the introduction of novelties” or “the alteration of what is established by the introduction of new elements or forms” (OED). Looking at the above variables within the concept of innovation then, the primary question to answer here becomes, how do various innovations—and understandings of the introduction of innovations by project directors—contribute to the accessibility, usability, and therefore use of digitization projects?

Figure 49: The actual relationship between accessibility, usability and digitization projects is far more complicated than originally assumed.



9.3.1 Innovations in access.

Alone, digitization of a text is representative of an innovation in access. To provide access to an electronic version of a text is to introduce a new way to access it. Within this case, though, there are many points along an overall scale of innovation represented. There are, for example, projects that provide very simple innovations in access (that is, very few novelties in the way texts are accessed) and those that provide very complex innovations (e.g., many novelties). The introduction of these innovations is a determining factor for both how many users a project will have and the degree to which this use will transform practice. In the following section, this scale of innovation and its implications for use and longevity will be examined.

9.3.1.1 Innovation that extends existing practice.

The notion of iterative functionality and design arose frequently during the interviews when discussing why people use and choose certain digitization projects. Following the exploration of why scholars generally adopt or reject new tools in section 2.4.4, functionality and design are an important factor for why particular projects are heavily used and others are not. For the most part, projects that support existing practice, but innovate upon it in a way that facilitates existing work were spoken of fondly or referred to as “essential.” Conversely, projects that innovate heavily—that is, they try to change or to shape a researcher’s existing practice—are not regularly adopted. Following this principle, the projects that seem to be having the most widespread use are those that provide scholars with something familiar. This familiarity includes everything that is important for scholars to trust the collection and the materials in it, but also allow them to do something beyond what they are currently able. For many, innovation means simply providing collections for which access is otherwise restricted or difficult. The result is that sometimes the digitization projects most important to their users are on the surface the most simple. The *Tibetan Buddhist Resource Center* (TBRC) was over and over again mentioned by respondents in both the interviews and the online survey as being important or even vital to their work. From the survey:

- TBRC allows me to access resources that I would not otherwise have the ability to access to which would take me many hours to retrieve. It is not so much that new research question are arising, but that the research questions are enriched...
- The TBRC has made it much easier to compare sources across a topic, particularly when the texts are short and scattered across collections.
- TBRC and IDP have many massive materials available for my research, and TBRC has provided a quite reliable reference-work for dates of persons.
- TBRC and IDP have hugely empowered those that use them.

While TBRC provides a remarkable amount of novelty in its metadata (particularly in its level of metadata), it is a simply structured project that provides access to a very large number of texts. Its innovation is characterized by the scope and scale of its collections and the speed and facility

with which users can access them. Users can search the metadata to locate texts, or browse by genre, date or relevant person. Scholars responding to the online survey report that they highly value this simple form of access:

- I have been able to ask new research questions, gain access to more material within my research, and become aware of more and varied types of data that would have easily slipped through the cracks.
- These resources have contracted the time it takes to do research. I can download and compare information from articles and texts more rapidly, so that I arrive at pertinent questions quicker.

The leaders of TBRC, too, seem to recognize that access is their core strength and in their latest redesign of the interface and search engine are focusing essentially on getting their users to the texts faster. A recent blog post about the redesign of TBRC (Wallman, 2010) states:

The TBRC Library attempts to organize and deliver a vast amount of information. With more than 6 million pages, and over 400,000 bibliographic entries, organizational methods have had to be adaptive. In an effort to improve the user experience we have developed the new interface with the following in mind.

1. Faster response time
2. Browse *and* search
3. Improved text viewing capability
4. Clearer pathways to the literature
5. Improved display of information

TBRC is in many ways the least innovative in terms of options and sophistication of the projects analysed here. Yet, that may be one of its greatest strengths in gaining a large user base. The field as a whole is now becoming familiar enough with navigating digital collections that they would welcome innovation on the simple access models (particularly in regard to providing full texts searchability), but even without that—simply by facilitating access to texts—TBRC has successfully had an impact on the field as a whole.

By contrast, the *Tibetan and Himalayan Library* (THL) is probably the most innovative of the embedded cases. As the examples in section 8.1 indicate, the THL is doing something radically new with the process and outputs of scholarship in Tibetan and Himalayan studies. The result of

that heavy innovation, though, is that it has revolutionized the actual practice and outputs of only a few of its core users. While the THL has not done any of its own user testing, the results of the survey conducted for this research show that many scholars perceive it as difficult to use. When asked to agree with the statement “this resource is easy to use” only 30% of respondents agreed with regard to THL, compared to 75% percent agreed for TBRC.

Creating a project that innovates on existing scholarly practice does not always have to mean radical simplicity. For textual scholars this approach makes sense, as the norm is a very static, slow to iterate format—the text. For scholars who work heavily with images (images as evidence, not just description or output), the normative baseline is somewhat different. For Clare Harris, for example, who specializes in the visual and material culture of the Himalayas, the format itself is significant; and digitization is not a different instantiation of photography, it is an extension of it. The *Tibet Album*, then, represents a logical extension of Harris’ (and her colleagues) work on the materiality of photography. One of the features of the project, then, is that it allows for the presentation of many different expressions of a single image.

Figure 50: Photograph in the Tibet Album. Note the different expressions of the photograph available in the bottom, right hand corner.



This project is a product of material culture as much as of Tibetan and Himalayan studies. It allows the user to understand the impact of different expressions of a single negative or plate and at the same time adds yet another (the digital version). In contrast to a project like TBRC, where the primary mission is in promoting scholarship by providing access,⁹⁹ the *Tibet Album* has a far more complex aim:

...the project has broader theoretical and methodological aims and objectives than this kind of core metadata resource enhancement alone, and these ideas have also influenced some of the ways in which information about the photographs and the digital record of the images have been presented in the web site.

Whilst one of the primary objectives has been to make 6000 images of Tibet from 1920-50 from the named collections available as a searchable and multi-layered web resource, this web-resource is intended to demonstrate a number of theoretical and methodological

⁹⁹ From the TBRC Mission (Tibetan Buddhist Resource Center, Inc., n.d.) "The mission of the Tibetan Buddhist Resource Center, Inc. is to promote research and scholarship in Tibetan Buddhism and advance the preservation of the Tibetan cultural heritage by making its literary tradition widely available in the form of digital images."

approaches. The website aims to explore the ‘historical potential’ of the images, to encourage new ways of thinking about visual history, to ‘reconstitute’ the collections as fully as possible (i.e.: enable related groups of images to be seen in their various historical relationships with each other, even when they may be spread across a number of different collections), develop comparative tools and ‘routes’ for navigating through the collections, and to explore the content as well as the context and history of image making (Sadan, 2006).

Whether fairly complex in methodology, or relatively simple, the importance of first extending existing research practice before innovating upon it is a contributing factor to the success of a project. In addition to being promoted by education specialists such as Willinksy (see section 2.4.4), this idea has been echoed in other facets of the humanities as well. In an interview with Massimo Riva, director of the *Decameron Web*, he emphasized this point [emphasis added], “The most important task is to create the cyber-infrastructure **to support the existing research practice.**”

9.3.1.2 Promoting and preventing simple forms of access.

Given that one indicator of success for digitization and digitization projects in Tibetan and Himalayan studies comes from simply providing easy access to texts when access was difficult before, it is important to understand how some of the basic decisions that are made about project infrastructure up front can affect access. In section 6.2.3.1, for example, a scholar was quoted in regard to his use of the *International Dunhuang Project*. When asked how the project has changed his work he said, “Yeah, because I can zoom in more than the human eye on this thing so in that sense trying to make a reading of the sentence and to get the grammar it is probably even better to work from my desktop than it is to go to the library.” As well as being evidence of changing practice, this quotation also provides an important statement about innovating on access. Providing “zoomable” images that can present more visual data than can be seen with the naked eye is also providing access to more information.

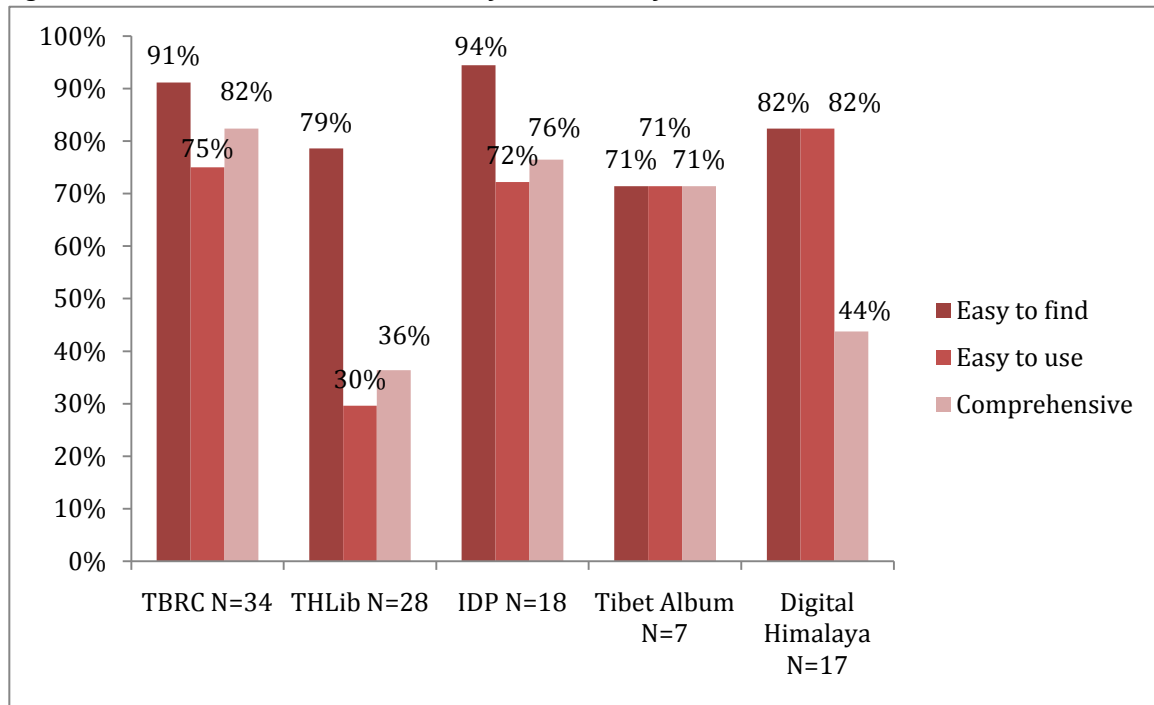
If high quality images can provide access to more information, there are also some representative examples in this research data of preventing access to information. The most common was restriction by geographic location.

Digital Himalaya has from the beginning been committed to providing the broadest type of access to its users. In this example, a UK non-profit agreed to digitize the film for the project, free of charge, but the project director was conflicted about the of access of the resulting digital videos. He understood that they fail to provide access to users in a fundamental ways—by restricting access to a particular geographic location:

And so they have done it and they have done it pretty well, but the problem is it is in an obscure location, nobody knows about it, it doesn't come up in searches from Google and it is only accessible to British universities.

As a result of their experience with this external organization, the director of Digital Himalaya understood their own priorities better—to provide as wide access as is feasible to as broad a user base as possible. As a result, Digital Himalaya is slowly building a very solid reputation outside of the west, in Nepal and India in particular. In the last six months of 2009, for example, their second largest group of site users were in Nepal, representing 14% of their visits during that time. India represented another ten percent during that same period. The United States and United Kingdom, by comparison, were 19% and 11% respectively. 82% of the users surveyed also found the site both easy to find and easy to use (Figure 51).

Figure 51: “This resource is...” Findability and usability across the research sub-cases.



9.3.2 The effects of innovation on usability.

Within the context of digitization projects, usability should be understood as describing ease of use and most often associated with factors such as user friendliness and intuitiveness. Usability, then, can also be seen as closely related to the notions of innovation discussed above, as it will necessarily extend a user’s practice rather than trying to change it. To take the example from section 9.3.1.1, the TBRC can be said to be very usable because it extends the existing practice of researchers. THL, on the other hand, scores low with users in regard to usability, because its use requires significant changes in the existing work practices of scholars.

9.3.2.1 Identifying and understanding disparate audiences.

Achieving usability (that is, whether something can be said to be useable), then, can be assessed in terms of how well a project matches the needs of a particular audience. In order to extend or innovate on a group’s research practices, one must first understand them. Usability cannot be generalized—usable for one audience does not mean usable for all. In light of this, identifying and understanding the current and potential audiences for a digitization project should be

considered a significant factor in the usability of a project. This section will be used to underscore examples of how understanding two particular audiences—the indigenous cultures and the researchers themselves—have variously contributed to the usability of these projects.

While the successful “digital repatriation” of so many texts can be seen as an achievement for digitization widely across the field of Tibetan and Himalayan studies, individually, these projects demonstrate the effects of successful audience targeting. In section 7.4 of this thesis, the broadening of audiences was analysed within the context of the broader humanities and seen as a change in the field. In section 9.2.3.4, the examples of creating and extending libraries in the Tibetan diaspora from digitized texts are used to illustrate the successful integration of digitization as whole. The same evidence from both of these sections, though, can also be used to show that individual projects have been successful in part through their detailed and focused understanding of the needs of their core audience.

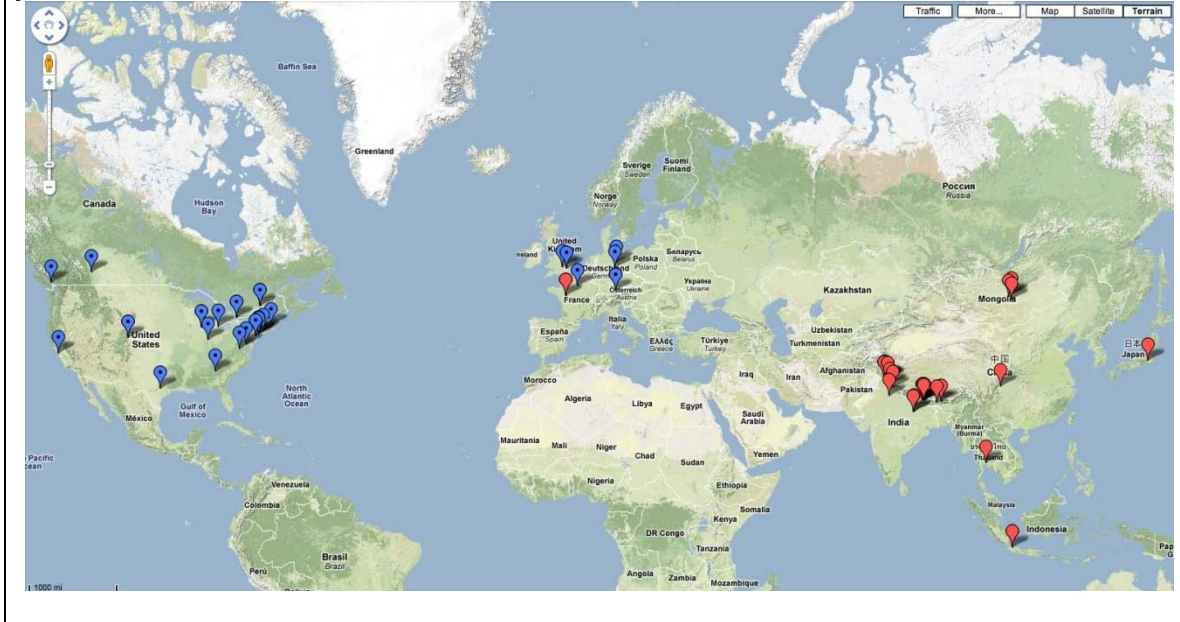
As discussed above, every interviewed member of project staff listed one of their core audiences as “the cultures from which these texts came.” Even those who were otherwise vague regarding who else might use their project (faculty versus students, higher education versus the general public), or how they might use it (as an online reference resource, to download texts and use offline, to generate printed materials, etc.) were confident in their vision and description of a significant non-western audience. This desire to “give back” these collections deeply affected how these projects were built. The project managers and staff were all familiar with the environments and work habits of this potential audience as many spend significant parts of each year doing fieldwork in the areas they study. These projects were then designed and constructed with these users in mind. They prioritize, for example, the creation and indexing of the metadata in native languages and characters and they create and organize the files to facilitate downloading in areas with low bandwidth. Just as with western audiences, in order to be successfully usable to these indigenous cultures, these projects have to in some way innovate on existing practice. All of

the sub-cases show evidence of success in serving these users and in each case their successes are due to a simple innovation on the existing practices of these cultures. The rest of this section will be used to illustrate how these projects are meeting the needs of one of the core target audiences.

As was mentioned in the introduction, E. Gene Smith, the director of the *Tibetan Buddhist Resource Center* (TBRC) said that he absolutely could not have created the TBRC from within an academic or research library. One of the key reasons for this was their ongoing commitment to make their collections accessible and usable to the Tibetan diaspora. This, in Smith's opinion, meant that TBRC could not make use of most of the common library standards. MARC cataloguing and ALA Romanization simply aren't useful, says Smith. The former does not provide subject, title, or author access at a detailed enough level for Tibetan literature, and the standard Romanization used by the American Library Association is not the one used by native Tibetan speakers (See section 7.4 for more on this subject).

One of the net results of TBRC's commitment to their audience in the Tibetan Diaspora has been their unequivocal success in providing access to a large textual corpus to these communities. In addition to the targeted changes in metadata, their commitment to these audiences was built into their economic model. Western institutions pay for subscriptions that are priced in part to subsidize free access and local installations for libraries and monasteries that cannot afford them (Figure 52).

Figure 52: Map of TBRC installations. The blue flags are paid subscriptions; the red ones are free installations.



The free copies of the library are installed locally in order that they can be used with or without an Internet connection. Through trial and error, the staff at TBRC have learned which combination of hardware and software is most suitable for the target environments as well as how to facilitate use by the greatest number of practitioners.¹⁰⁰ While most of the young students and western scholars reportedly prefer using the digital versions of TBRC, some of the monks who travel frequently have also become accustomed to using the digital versions (Figure 53).

¹⁰⁰ In particular, they have learned that Macintosh computers fare better than Windows-based machines because they are less prone to viruses.

Figure 53: Dzongsar Kyentse Rinpoche uses the TBRC Digital Archive at a puja in Taiwan.¹⁰¹



A majority of the practitioners though, prefer working with printed texts; and once again this need is facilitated by the TBRC digital library and its staff. There have been several incidences reported of entire monastic libraries being recreated from texts printed from TBRC. Figures 54 and 55, all depict uses of the free installations of the TBRC Digital Library in monastic communities of the Himalayas.

¹⁰¹ Photograph courtesy of the Khyentse Foundation.

Figure 54: Top: Chökyi Nyima Rinpoche receiving an installation of the TBRC collection of texts. He lifts it to his head and chants a prayer, just as he would with a paper book. Bottom: After printing texts from the TBRC library, they are wrapped in the traditional manner and lifted to the head to show respect. This was part of a large effort to recreate the library of the Danzan Ravjaa's Khamar Monastery ("Wrapper's Delight," 2007).



Figure 55: Printing pecha texts from TBRC Digital Library "digital woodblocks," Pulahari Monastery.



Two other project managers reported that their digital collections were used to create printed works that were employed to replace lost or destroyed library collections¹⁰² (yet none have been used on such a large scale as TBRC).

By facilitating the printing of the digitized texts, several of these projects are illustrating their ability to improve upon the interactions of these audiences with the content in their collections.

Although the end result is analogue in format (and in fact a facsimile of the original text), the

¹⁰² A manager of the International Dunhuang project confirmed the repatriation of texts from their project to several monasteries. When asked how these monasteries used the collections, he said they printed them out and rebound them. Similarly, project staff from Shechen Monastery in Kathmandu, Nepal, recounted the story of a Brazilian nun who had lost her entire library of the works of Shechen's founder to a fire. She was given, by Shechen Monastery, several DVDs containing copies of the texts that she lost and from these recreated her library.

distribution of the books is digital, which represents an improvement upon the previous levels of access for these communities.

Shechen Monastery in Kathmandu Nepal is actively involved in the digitization of its texts, but the distribution of final copies is often still in analogue format. The innovation in this example, though, lies in the format of that text. For the celebration of Dilgo Kyentse Rinpoche's one-hundredth birthday, an entirely new format has been created. The pages, originally in the standard pecha format, have been re-formatted to fit in a standard File-o-Fax binder (Figure 56).

Figure 56: A Tibetan text reformatted to fit into a File-o-Fax. This edition was created and distributed for celebrations honoring what would have been the author's one-hundredth birthday.

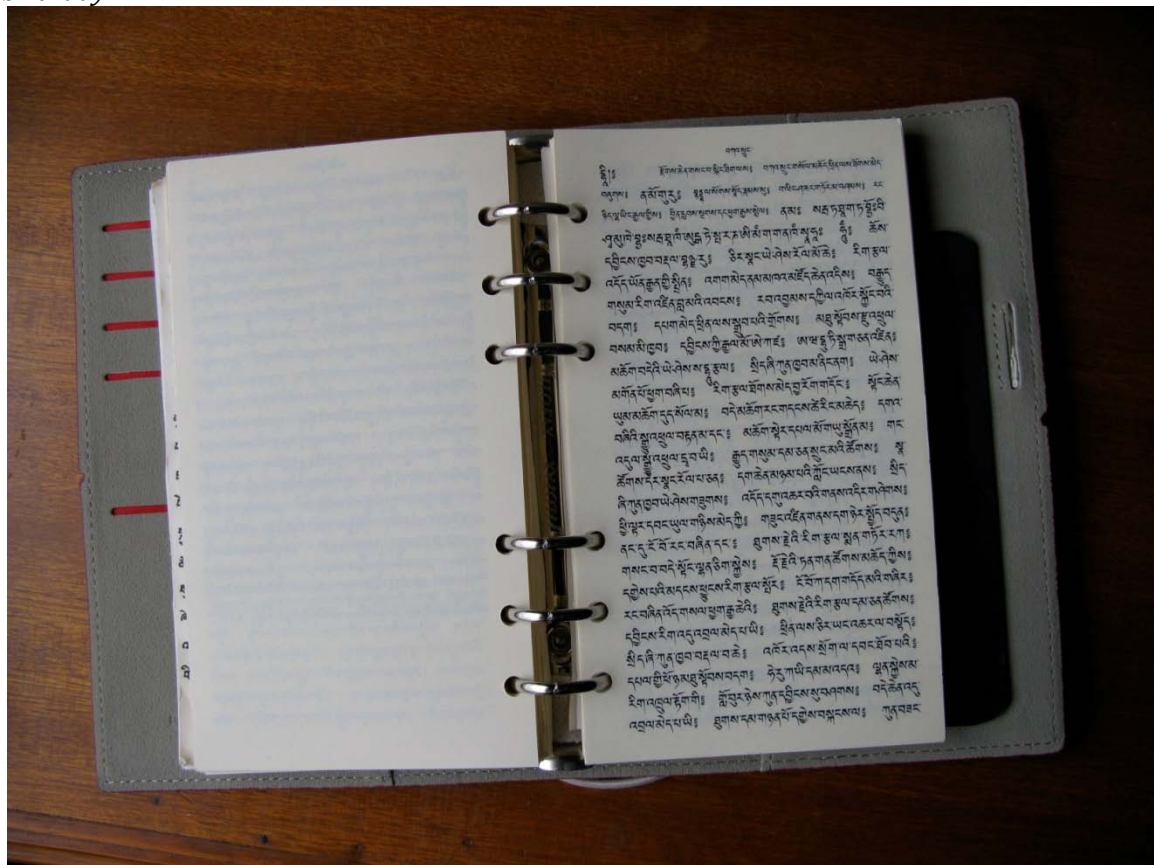


Figure 57: The File-o-Fax version of the text, in use at the Centennial Celebrations, Shechen Monastery, Kathmandu, Nepal.¹⁰³



This reformatting—ultimately enabled through digitization—along with the previous examples of printing text in their traditional format, are both significant examples of Willinksy’s principal of “only changing one thing.” The traditional working style of the monks is to read from texts. In the example from Shechen, the primary innovation is in the creation of a more convenient form of text—small and bound rather than large and unbound. In the case of TBRC and other who facilitate the printing of their texts, the change is in the electronic distribution model. In all of these cases, though, it is clear that the projects have successfully understood their audiences.

Another example of this kind of simple innovation can be found in the use of these collections by the researchers for elicitation. Within anthropology, the practice of photo elicitation is well

¹⁰³ Photograph and detail taken from *Opening Celebrations in Nepal* (Shechen, 2010).

established. The ease with which digitization allows for the copying and transport of large files, such as moving images, changes the traditional relationships that photo elicitation has established, though. In the past, the activity of bringing historical visual images back to a community in which they were captured has been largely for the benefit of the anthropologist. The activity was most often instigated in order to get further information about the people or activities in the photographs or films, or to provoke some response that would tie the historical practices to current ones. The anthropologists are seeking something from the respondents. By facilitating the copying, storage, and display of these materials, digitization is changing the power structures inherent in traditional forms of elicitation—the indigenous are no longer simply suppliers of information, they are audiences. *Digital Himalaya*, for example, began with the intention of giving Christoph von Furer-Haimendorf's films back to the people from which he captured them. This was built into their mission statement from the beginning [emphasis added].:

1. to preserve in a digital medium archival anthropological materials from the Himalayan region that are quickly degenerating in their current forms, including films in various formats, still photographs, sound recordings, field notes, maps and rare journals
2. to make these resources available over broadband internet connections, coupled with an accurate search and retrieval system useful to contemporary researchers and students
- 3. to make these resources available on DVD to the descendants of the people from whom the materials were collected by making them both easily transportable and viewable in a digital medium** (Digital Himalaya, 2010)

In 2002, one of the project staff did just that and her recounting of the story illustrates the shift from informant to audience. Bringing the films on a small, portable DVD player to the small community of Lubra, Mustang, she at first described the typical elicitation process.

It was in fact this latter group, the village elders, whom I sought more eagerly for my audience. They were most likely to remember the individual characters and events shown in the 1962 film...After the initial disorientation of seeing moving film of the village for the first time, it all began to fall into place for the viewers, and the race was on to identify each individual appearing in the film. (Shneiderman, 2002)

Near the end of the short report, though, it is clear that something has changed. Shneiderman recounts how the villages ask to keep the DVD and are willing to ask their chief district officer to electrify their village in order to do so. In that moment the villages change from respondents to

audience—and active guardians of their own cultural heritage. “Clearly the film held more than a passing fascination for the villagers,” comments Shneiderman (Ibid.), “and could be usefully integrated into the existing structure of cultural memory.”

As *Digital Himalaya* expanded into providing access to historic and contemporary journals, they maintained their commitment to understanding their current and potential audiences and structured their project accordingly. Their project director described how his understanding of their audiences changed over the course of the project as well as how it affected the organization and structure of the web site.

And we have been long committed to the one-click download.¹⁰⁴ Horribly big files, massive files, which I know is a problem, but at least you get the whole journal in one download. Because, one of the things we were learning from the people who were writing to us through our web site was that scholars—the sort of young scholar with their laptop, whoever they may be and wherever they may be, were downloading the whole lot onto their laptops. As the storage capacity of personal computers went up and these lovely little utilities like ‘down them all’ a plug-in for Firefox that downloads everything on a page. Tiny things like that, so people have just been downloading the whole lot and keeping an index on their computer. So they become a portable library or resource. And now I have just purchased Acrobat 9 and not only can you do OCR in acrobat, you can batch process. So you can drag a whole load of files... so the pdfs that have originated in digital form the text is there so the ones we have scanned we are starting to do the OCR. So that was a realization for us that people are doing these things so we thought why don’t we just put the whole thing up and let them thing about how they are going to use it. They will dictate the terms of use or the structuring of it.

Recent studies such as the periodic Ithaka faculty survey (2010) are intended to understand current and potential audiences for digital collections and tools. Audience analysis is most often cited in this way as formal studies, yet it needn’t be. As these examples illustrate, the single most important factor is having an audience in mind when making decisions so that one can understand the repercussions of those decisions for a particular audience.

¹⁰⁴ The “one-click download” here refers to being able to download a whole run of a journal with one click. The run size may vary from a single issue to many months of issues.

9.3.2.2 Institutional support models for innovation.

What kind of support, if any, do these digitization projects receive and hope to receive from their home institutions? The institutions that house digitization projects can provide support in a number of ways, one of the most obvious being to develop and sustain technological infrastructure or to provide funding for digitization activities. Yet support is a more pervasive concept than simply providing resources. The results from the data gathered in this case were mixed, with no clear answer to or even sense of what the best possible institutional support looks like. Each of the sub cases provided a slightly different model of institutional support that were at once successful in building and sustaining digitization projects (as evidenced by the continued presence of these projects), as well as perceived as somehow failing the projects. As mentioned in Chapter 5, many of the scholars interviewed saw their department and even their field as being marginalized within their academic institutions; however, other projects reported feeling that their efforts were supported within their institution at least inasmuch as they were not actively dissuaded from their digitization efforts. Because of these mixed findings, this section will focus specifically on support for innovation—that is, whether faculty and staff engaging in digitization were supported by their institutions in creating something perceived as new or innovative to the institution.

The *Tibetan Buddhist Resource Center* (TBRC) is, according to their staff, hampered by a lack of support for technological infrastructure. As a result, they have to build and maintain their web site, databases, and metadata themselves. Unlike with *Digital Himalaya*, for example, there is no university library that is going to install and maintain a digital preservation repository. Having to build their own technological infrastructure is expensive and inefficient given that these services are now commonly available in university settings, but as Smith says, their work couldn't be done in a library even with this sort of support. TBRC is administratively housed and supported by the Rubin Museum of Art and the Shelly and Donald Rubin Foundation. The support they receive from the Rubin is different than they would get in an academic institution, but it is essential to the

success of their project. The support they receive is in part in the form of trust and flexibility. They are trusted to create a project that is of value to scholars around the world and provided with the administrative and physical resources needed to get their work done. Thus, they enjoy an agility that could not be achieved if the project had to conform to library standards or norms, or work within a larger administrative institution. One of TBRC's board members explains:

Interviewer: Do you think the Rubin is a good fit for TBRC? I am interested in why this isn't happening in a library?

Absolutely, things move too slowly in a library. And sometimes you have to make ad-hoc decisions and I don't mean anything underhanded, but the kinds of things that would take a long time to finally get the ok for. You know, a project comes up in Ulaanbaatar and we have to wire forty or fifty thousand dollars. Can you imagine the red tape you would have to go through? It would be impossible, even at Harvard. And Harvard is sort of easy going in that respect....

Different forms of support are needed at different points in the project life cycle. As TBRC grows and expands rapidly, what they need (and are receiving) is trust from their institution that they are moving in the right direction and the flexibility and authority that is needed to get their work accomplished. As TBRC ages, though, long-term sustainability will become more of an issue. At that point, innovation will be less of an issue and they will need a different kind of support—focused on maintenance and organization rather than building and growing. At this point, the interviewed project staff and board members agree, moving under the direction of an educational institution makes more sense. The interview, above, continued:

So if TBRC stops being an independent entity, someone, some institution will have to maintain the site. Some institution will have to pay for or TBRC will have to generate enough funds to maintain the web site. I would love to have it here, but that is kind of ego. I am not going to be around forever and who knows about after me.

Interviewer: So you think it needs that institutional support for long-term sustainability?

Yes, oh yes.

The example of TBRC proposes that there are two separate models of support needed for digitization projects. For long-term sustainability, an ideal environment is one focused on preservation and maintenance—arguably, a slow moving organization that is committed to

standards. Early in the life cycle of projects, though, when innovation is needed, these projects benefit most from being small, nimble departments that are provided with a baseline of support and are allowed to experiment, take risks, and even fail. The director of *Digital Himalaya* spoke about how the project has benefited from staying small and nimble:

[I]ts success has been in part the fact that it has been small—small budget, small staff—trying to get materials to be disseminated and used.

Well I live in the lineage of my professor, who was and is still a very important person for me. And you know he is very much about keeping things small, light footprint, administratively small—don't try and empire build. And I didn't know how that would work and it meant we got some raised eyebrows from people at first. Too much money can be a curse, though. And we have never really had that luxury or that curse. And what that meant was we could never really get into software development. Having it maintained by the scholar-producers has also made a difference; it has been maintained by four people essentially. When I say small, we are not trying to be immersive. We are not trying to get the biggest stuff out there; we are trying to mop up the small things. Make the invisible visible.

This combination of support and flexibility is something that is being attempted on a large scale at the University of Virginia through two different departments. The central mission of the Institute for Advanced Technology in the Humanities (IATH):

IATH's central mission is to provide scholars in the humanities with the time, the tools, and the techniques to document and interpret the human record in electronic form. To that end, we select a small number of fellows each year through a competitive application process, and we provide those fellows with consulting, technical support, applications programming, and networked publishing facilities (Institute for Advanced Technology in the Humanities, 2005).

The Department of Digital Research & Scholarship has a similar mission to support digital innovation in the humanities and social sciences.

The faculty, staff, and student consultants of the Digital Research & Scholarship department offer deep expertise in the use and creation of digital resources. We can assist you in project development and digital research, electronic text encoding and qualitative analysis, digitization of texts and images (including OCR), and your research computing needs in the humanities and social sciences (University of Virginia Library, 2007).

Together, these two departments appear to be attempting the combination of stability and flexibility mentioned above. The stability that comes from providing technical support and training combined with an institutional support that encourages innovation. The *Tibetan and*

Himalayan Library (THL) has benefited significantly from this system. The Director of Digital Research & Scholarship explains their relationship to THL.

We spend a lot of time with [the director] because his projects are really complex and they have complex systems requirements. We are kind of a conduit between faculty and the IT department who house the servers, etc., so we do a lot of translation back and forth for those two groups. So they works with us for everything from ‘why is this server slow today?’ to ‘I have a new research project that is going to need a home but in the mean time needs development space, can you help me with that?’, to ‘I have a new idea can you work with me to help me refine my ideas and figure out what it will cost and/or co-write a grant and/or devote some programming time?’

While this statement illustrates the kind of technological innovation that is encouraged, intellectual innovation and impact are also prioritized. According to several of the staff in these departments, innovation and impact are prioritized when selecting fellows and also when funding and supporting projects. While the Digital Research & Scholarship department offers a more generic style of technical support to whomever requests it, IATH employs fellows for an academic year and works closely with them to build a digitization project. These candidates are selected through their project proposals, which somehow must use technology to move forward the scholar’s work. If a project does not somehow innovate on a faculty member’s work, it will not be selected for support by IATH.

The kind of support provided by IATH and the Digital Research & Scholarship department at the University of Virginia means that while humanists can pick up technical skills and learn to use new tools, they essentially stay humanists—they don’t turn into computer scientists. They are supported in their work and encouraged to innovate through the use of digital technologies. In the case of Tibetan and Himalayan studies, this has enabled the development and growth of one of its largest projects—the *Tibetan and Himalayan Library*.

9.3.3 Other critical issues.

9.3.3.1 Sustainability.

Sustainability has been used in this thesis to explain that each of the embedded cases is in some way successful because of their continued use and existence. Yet, as can be seen frequently with

digitization projects, success today does not guarantee sustainability into the future. Lorna

Hughes succinctly described this dichotomy:

She **describes a project that checks all the available boxes of ‘evidence of value’**. It is collaborative, pushing the boundaries of research, supporting graduate students and also supporting preservation of the original artefacts, **yet its existence is fragile and endangered**. (Greengrass & Hughes 2008, p. 200)

Each of the sub-cases used in this thesis relies on grant funding and donations to be maintained or to grow. They have each, to date, been successful in finding the resources they need to continue their work, but that does not guarantee them success in the future. As one of the interviewed scholars observed, “everything is very grants and projects based. So when funding runs out, things have to stop.” Three program officers from two major funding bodies were interviewed over the course of this research and all three agreed that sustainability was an important issue. Sentiments were also unanimous that the institutions and organizations that house these projects need to provide core funding for these activities in the future—continued grant funding and donations is not a viable sustainability plan. For this reason, it is important to understand sustainability as an ongoing issue that constantly plagues project staff and funders alike. Within the context of the data gathered here, sustainability arose in two contexts—technological infrastructure and funding. These topics will therefore be used to structure the findings.

The technological infrastructure of these projects is composed of elements that allow for their continued use and accessibility on the web. These include, but are not limited to, digital repositories, web site infrastructures including databases, and cataloguing tools. In short, projects need various pieces of infrastructure in order to provide continued access to their content. The important link between infrastructure and sustainability lies in the fact that infrastructure needs to be updated. New versions of software become available, new standards for web site coding are released, and new metadata standards adopted. Each of these requires some action to be taken in order for existing web-based projects to remain viable.

The approaches taken by the sub-cases in this project with regard to infrastructure were too varied and numerable to be able to link them to the success of a particular project. However, looking at projects across the field, some patterns did emerge. For that reason, the goal in this section will be primarily to illuminate the various approaches in order to provide some understanding of the issues for future projects.

There were two general approaches to infrastructure seen across the digitization projects. The first is to make use of existing institutional infrastructure—if it exists—and the latter is to build custom infrastructure for the project. There are tradeoffs with each. Making use of existing infrastructure means having to use existing standards and services regardless of whether they are a good fit for the collections or the users. In other words, it means trading control for stability. The latter approach allows for the building of bespoke tools and finely tailored services, but taking on all of the responsibility for building and maintenance. What follows are some examples of each and a discussion of their benefits and tradeoffs.

When *Digital Himalaya* began, they had no choice but to build their own infrastructure and tools because nothing existed across the institutions within which they were situated. They created a simple web site and rented commercial server space to host the site and collections. For their first ten years, upgrading the web site and migrating files into new formats fell to the project staff. Every time something needed to change, they therefore needed to raise money in order to pay staff. In time, the primary hosting institution installed DSpace¹⁰⁵ and began to offer digital repository services. A recent complete redesign of the site was aimed at moving all of the collections into the University of Cambridge's DSpace repository and redesigning the web site to comply with the University's design standards. Like all of the other upgrades to the site, the project director had to raise money for this redesign. This move was, in the words of the director, an "attempt to maximize sustainability." By placing the collection objects (video files, pdfs, etc.)

¹⁰⁵ DSpace is an open source content repository architecture, currently in use by over 800 cultural and educational institutions. For more information see the DSpace web site (<http://www.dspace.org/>).

in the DSpace repository the University assumes responsibility for future file migrations. Overall, despite the work up front, there was a strong sense that this was the right thing to do for the long-term sustainability of the project.

Most of the collections and projects being built in the Himalayan regions of Nepal and India provide extreme examples of infrastructure support issues. One of the biggest difficulty plaguing projects in the Himalayan regions is lack of technological infrastructure. Many of these projects do not have a constant supply of electricity or consistent access to the Internet, so making use of something like DSpace is altogether out of the question.

The Mandan Puraskar Pustakalaya (MPP) in Kathmandu Nepal is a private library that has a mandate to create an online archive of the Nepali language (Figure 58).¹⁰⁶

Figure 58: Some of the Nepali language collections waiting to be scanned at the offices of the Mandan Puraskar Pustakalaya.



¹⁰⁶ For more information see the Mandan Puraskar Pustakalaya web site (<http://www.madanpuraskar.org>).

All of their activities have been funded by grants and donations that are targeted at one of these specific projects or activities, but they have had difficulty in securing funding for infrastructure. In a current project, for example, MPP is being paid to scan part of its collections, but the western library funding the project has refused to pay for cataloguing of the materials. As a result of this and other efforts, the MPP now has significant digital collections, but little to no infrastructure to store, organize or provide access to digital materials. Users wanting to work with materials must come to the library and request access. The digital collections are stored locally on computers housed in the MPP offices, are organized using a method of naming files and directories, combined with a physical ledger. No complete backup of their digital collections exists.¹⁰⁷

This problem of being funded for “projects” but not for infrastructure dominates the Himalayan libraries visited over the course of this research, but it is also present in some of the western projects. It was several years before the *Tibetan and Himalayan Library*, for example, were able to procure funding to begin building their infrastructure, which has made it difficult for THL to work towards its ultimate goal of publishing other Tibet-related sites. From outside the project, it has also meant that the reputation of the project has suffered. The project is often seen as scattered and unfocused. A Himalayan scholar familiar with THL, but who also works on their own digitization projects, contrasts their approaches to infrastructure:

They were always like lets get more grants and let’s play with it and I was always like well, lets not play with it too much. Let’s put something online and make it useable. I don’t mind if we are not pushing the envelope technologically or ideologically. [Their director] has always been committed to both. [He is] is a person who is interested in the development of these ideas.. [we] and I joke about it. I think he is an engineer and I am a mechanic. He has a beautiful song to sing and a tale to tell, but it is also in constant internal revolt. Staff are always coming and going. He’s got millions to reinvent the thing and start again.

This “internal revolt” seems evident to users as well. 56% of users surveyed agreed that THL was “often incomplete” and 22% “often unavailable,” more that twice as high as any other resource for these categories. Only 30% agreed it was “easy to use.”

¹⁰⁷ This information was gathered from a site visit to the library as well as discussions with the director and library staff.

Like with institutional support, ideal models for funding have not yet emerged—either in this research or in the greater body of literature about the sustainability of digitization projects (Guthrie, Griffiths & Maron 2008). Funding is a major issue for the success and continued sustainability of these digitization projects and so it is important to present here the findings that deal with funding as it relates to the success of digitization projects. Once again, because of the mixed results only a summary of those results unique to this case study will be presented.

While still dependent on grants and donations for the most part, two of the projects analysed here have devised funding strategies that make use of existing offline infrastructures. As several respondents observed, they have tapped into something inherent to the tradition of Tibetan Buddhism—the patronage system. As mentioned in Chapter 5, the act copying of books *and* paying for the copying of books is said to bring good merit to the practitioner. This tradition seems to have transferred in a small way to the funding of some of these projects. As one respondent said about TBRC, “Gene funds his project through the old Tibetan patronage system.” Indeed there seems to be a community—some Tibetans in exile, some “fans” of Tibetan Buddhism, some practitioners—in New York City. Between the Rubin Museum of Art, the Tibet House, Lotswe House, and the TBRC, there are numerous social events and ample opportunities to give. The ties into traditional Tibetan Buddhist practice can be seen through some of the language used to encourage giving. *Digital Himalaya* has had success in funding some of their work in a similar sort of way. Private donations from wealthy Nepalis have been a major source of income for them. As a result of their scattered successes in fundraising most of these digitization projects are caught between two worlds—those that began as relatively independent projects they have the flexibility and the nimbleness to innovate. In the long term, though, all of these projects need the infrastructural and financial support of larger institutions to survive.

9.3.3.2 Critical mass in individual projects.

Of the £7,000 budgeted for purchasing materials for Tibetan Studies in the Bodleian Library at the University of Oxford, roughly £5,000 (71%) is allocated for a subscription to the *Tibetan Buddhist Resource Center*. “Because they are just so valuable really,” says one of their librarians. Another librarian at Oxford speaks more directly to TBRC’s contribution as its extensive collection:

I think, thanks to Gene, it has an electronic corpus there that really outstrips any other section [in Asian studies], with the possible exception of Chinese. China is really out there on its own. But for a small area, Tibet has an awful lot available to them thanks to that project.

Just as the presence of “critical mass” has influenced researchers inclinations towards using web-based resources, so too it can have an impact on the use of individual resources. By far, the greatest example of this in the field of Tibetan and Himalayan studies is the *Tibetan Buddhist Resource Center* (TBRC). 82% of respondents surveyed described TBRC as “comprehensive” and ninety one percent described it as important to their research. Eighty six percent of respondents have created a piece of work using TBRCs collections.

9.3.3.3 Quality and trust.

The final characteristic of digitization projects that was found in this research to have an impact on the success of particular digitization projects is the perception by users of quality of—and trust in—the online resources. No attempt was made here to correlate this to *actual* quality and/or trustworthiness of the resources, but rather will be discussed here with regard to the *perception* of quality and trustworthiness. In short, the long term success of the digitization projects studied here will depend in part on whether scholars and users believe they can trust the quality and accuracy of the resources they provide.

Several interviewed scholars addressed the issue of trust directly, primarily in relationship to comparing projects that provided page images of texts versus those that provides hand-keyed texts alone.

There is one project that I trust and that is TBRC. Not because I am involved with it but because it seems to be very sensible to pdf file the books, the manuscripts. You don't add or subtract from anything. Except you have the text now on your screen. You have the text as it was more or less. Of course certain subtle changes occur but in terms of the actual graphs of the text nothing gets changed. But the ACIP, the input, where you basically have sweatshop of young Tibetan monks, none of whom are very well educated, tabulating these texts. Well, you have a lot of mistakes.

The consensus was that hand-keyed projects were useful for quick references or general queries, but could not be trusted to serve as true scholarly citations.¹⁰⁸

But still, it is often better than nothing. If I need a quick reference I often go to ACIP and see if a cluster of terms occurs within a context that I am looking for, that I have been reading about. And from that point of view it is also very useful. But to use them as *the* text, no. and I tell my students over and over again, hey this is one edition, one block print of a number of different possible block prints. The block prints are very far removed from the original text when it was translated, a thousand years. A lot of things happen to books when they get translated from handwritten manuscripts. So, take it easy, this is not the end. This is the end result of *a* text. So yes, it makes things much easier but there is a duplicity. It is easy, yes, but it also makes things much more difficult. It is multi-layered.

Another scholar provided a nearly identical answer:

Interviewer: Do you trust input texts?

No, but they are useful anyway. For instance, in a project I was working on where the pages were all out of order, it would be nearly impossible without them. I read the first line of a page—which is in an ancient script that I don't read perfectly—but I find something that I can read on the page that I can read that is in distinctive and then I do a search on it and can identify it as a certain page. That becomes page five and that becomes page three.

A younger scholar, who used the hand-keyed transliterations more thoroughly in his work, said that he trusted the texts, but also admitted that he regularly found errors.

Interviewer: Do you trust the transliterations?

Yes, they are pretty good. I think I have only found one or two places where I have disagreed with their transliteration and there is one where I published my own

¹⁰⁸ This attitude is similar in many ways to some of the current discussion and scholarship surrounding use of Wikipedia for research.

transliteration that differed slightly from theirs because attending to punctuation whereas they don't attend to punctuation closely.

This scepticism was confirmed as prevalent across the humanities by digitization expert Wendy Gogel, Digital Projects Librarian at Harvard University Library:

No researcher can confirm something about the original without seeing the originals. For example, if you don't digitize the verso, people don't trust you, they want to see the back. If you digitize the blank sides of things, it may seem like a waste of money, but at least it is more complete. And more complete means that people have more confidence in a resource.

The issue of trust was also raised within the context of longevity—can scholars trust that the resources will be there and be accessible in the future if they cite it now?

I am concerned about the built in obsolescence of all of this. Who knows what is going to happen ten or twenty years down the road. So even though we may have everything digitized the access may be a problem and the databases may need to be renewed. So that's a very labor and cost intensive proposition. These things don't last, huh?

One library-based project used digitization as a medium for access, but still engaged heavily in microfilming for preservation, indicating that even they do not trust the digital copies for long-term access and preservation.

Yes, we still do filming. A number of the core players are still committed to microfilm as the best strategy for preservation. And DSAL is for access, but we have begun to go beyond that. There are a number of objects that are born digital that are being presented. Where we take on the responsibility of preserving these objects. As opposed to some of the early texts where filming is still considered the best means of preservation.

9.4 On Failure

Failure is difficult to study, yet an essential component of understanding digitization projects that achieve success. For the most part, people don't like to speak about their failures and institutions don't want them publicized. Therefore, the researcher did not actively seek projects that were no longer being funded or supported. Although that would have been a valid approach, it was deemed too time-consuming for the amount of data that would have been gathered given the natural disinclination toward discussing failures. Still, many project staff mentioned an aspect

about their project that they deemed a failure and there were some overall surprises about perceptions of failure within the context of digitization projects as a whole.

In the assessment of success and failure of these projects, participants did not perceive failure as the simple inverse of success. In other words, the reasons for failure are not as straightforward as simply failing to do the things necessary to succeed. Secondly, much of the discussions around success and failure correspond with participants' original goals and expectations for their projects.

To begin with an example outside of the case of Tibetan and Himalayan studies, the *Decameron Web* (http://www.brown.edu/Departments/Italian_Studies/dweb/index.php) is by all empirical counts a successful project. It has a high number of in-linking sites and, according to the Alexa Search Engine receives several thousand visitors a day.¹⁰⁹ It was created in 1995 and continues to be actively supported by the Department of Italian Studies and the Virtual Humanities Lab at Brown University (Brown University, n.d.). The director of the project, Massimo Riva considers his project—however heavily used—a failure. His goal was to make it a place for people to collaborate around the Decameron and it simply hasn't happened. He has been able to force use—mostly by coercing graduate students through work-study and assignments—but it hasn't happened naturally as he had hoped.

This sort of feeling about failure was peppered throughout the case of Tibetan and Himalayan Studies as well. It became clear very quickly that failure had to necessarily be contextualized by the intended goals. In other words, a project may be heavily used or continually supported (matching the definition of success laid out above), but often a project has not succeeded in achieving a particular goal set out in the initial project vision or mission. One project director felt that overall his project was a success, yet admitted that the final product was fairly far from the original intention of the project. "So sometimes you don't really know what you are going to start

¹⁰⁹ Statistics taken on May 21, 2010 from <http://www.alexa.com/>.

with and the thing that really bounces you into action is not the thing that you deliver immediately because other things happen en route.”

One of the most serious failures brought up by project staff and directors is heavily tied to the question of reward. As discussed in section 8.2, the question of whether scholars will or should receive tenure or promotions for engaging in digitization work weighs heavily on the minds of many of the scholars in this field. Some project directors considered it a failure that they or their project have not been able to change this part of academia, sometimes seen as a failure across the humanities. For example:

[T]he problem is that the academy is not really setup to sustain these kinds of complex projects. And part of it is that in the humanities we don't have the expectations that people are working in a collaborative context we don't have the expectation that there are people who are primarily instructional type people, we don't have the expectations that you are constantly raising your own funds. Over the sciences they have their own problems, but there are grants administrators in the department there are the expectations that you are going to maintain a certain number of people in the department who are going to be raising funds. So these things have emerged over the last fifteen years but the institutional environment has not adjusted accordingly. So it is a great place to be, but there is an institutional problem.

Other respondents mentioned similar disappointments in regard to some of the large, structural and organizational issues that loom large over digitization projects. Like with the *Decameron Web*, Robin Boast,¹¹⁰ for example, mentioned the failure of any of these projects to provide a truly collaborative or democratic environment.

There are no projects that literally try and release control. Everything is about broadcast. What if every record you create is Google-able? Can people create their own collection out of your stuff (like the people's museum)? What is driving all of this is a fear of losing control. For the most part, museums are offering a collaborative space that is pretty unequal. People construct lots of narratives in museums, but the only one that is recorded and held up to be true is the museum's.

¹¹⁰ Dr. Robin Boast is the Deputy Director of the Museum and the Curator for World Archaeology. He lectures widely on issues relating to the digital humanities.

A librarian with a good overview of the field of Tibetan and Himalayan studies also brought up the failure of any of these projects to achieve long-term sustainability.

This will sound jaded, maybe somewhat biased, but what I am seeing it that faculty, maybe excepting David, have generally picked up on projects for the purpose of supporting their research. And they run with that as long as it is useful for supporting their own scholarly activities, and then the projects languish. Valley of the Shadow may be one of those. You can think of a number of those. Gotten a lot of funding, done some nice work, but then hit a plateau. Again, I don't like to have things devolve back to individuals because I would like that to not be the case—it isn't good for projects or a fair way to represent these larger projects—but if you extract the individual or if the individual is only in it for meeting the very focused goals of their own research, then what are you left with? And what does that say for the stability or lifespan of the resources? I guess if I were going to start thinking of digital libraries... and we look out 20 years, what is it going to look like. David will be close to retirement; Gene will be out of the scene. What is going to be the best way to support research? It is a serious set of concerns and I don't think we have any answers.

While not directly mentioned by any of the respondents, one of the most important failures observed by the researcher was that of the project leaders to recognize their own successes. With perhaps one exception, most of the projects in Tibetan and Himalayan studies have not been very good at publicizing their projects, let alone at recording or sharing their successes at making large amounts of rare and valuable information available to scholars and the general public. It is possible that perceived failures are sometimes failures to get data about success. Many of the successes are measured by project staff essentially through traditional peer review. One project member deemed their project a success because the reports from their funding body did. Another said, “in the field of Tibetan studies, everyone knows about us.” Yet these measures are not in line with the goals and visions set out by the project leaders who essentially want to change the structure and outcomes of the humanities.

Chapter 10: The Impact of Digitization on the Future of the Academic Research Library

Digital information has a profound effect on what libraries are. Profound. And that is hardly understood yet, but that is massive. Libraries are going to be different things, there is no way around it. (D. Flecker, personal communication, July 31, 2008)

10.1 The Necessity for Understanding this Research in the Context of the Library

In Chapters 6, 7, and 8, the argument was made that digitization projects in Tibetan and Himalayan studies are changing the inputs, practices, and outputs of scholars in the field. In Chapter 9, evidence was presented describing both the individual successes of particular projects as well as the overall integration of digitization into scholarly practice and the successful use of digitization to preserve and disseminate Tibetan and Himalayan cultural heritage. If together these can be accepted as evidence that the relationship between humanities scholars and primary resources is in fact changing as a result of digitization, then what remains is to answer the third question, “what is the impact of the changing relationship between humanities scholars and rare primary resources on libraries?” This question remains central to this research because digitization is providing what has long been considered one of the key functions of a library—access. This question is important more generally, though, because—as discussed in Chapter 2—the academic research library is in a state of flux. The library has long been the laboratory for humanists, absolutely central to their research activities because it has provided a space for their work as well mediating their relationship to primary resources. If digitization removes one or both of these roles for the library, what is its future? Further, if the most heavily used digitization project in this case, TBRC, could not (according to its creator) have been accomplished in a library, should this somehow be seen as a failure of the institution? The preservation and dissemination of cultural heritage used to fall clearly within the mandate of libraries. Is this changing?

This is not a conventional research question in that it cannot at this point be answered with empirical evidence; and this is not an attempt to generalize the findings of this very particular

case. Nonetheless, it is an essential question to address here because it is the very *reason* for this research. This question, more than any of the others addressed here, has stemmed from the twelve years of experience that the author has spent working in three different academic research libraries (UC San Diego, Harvard University, and the University of Oxford's Bodleian Library). In addition to being documented in this research, the changing nature of the relationship between scholars and libraries—and the role of digitization in that change—has been witnessed first hand. As the nature of the relationship in question is still evolving, this chapter is not an attempt to categorically answer this question, but rather is intended to illustrate the importance of recognizing that the question exists. The proposed model for the academic research library that is presented here is a response that stems from a combination of this research and work experience. It is intended in some ways as a platform for discussion or even a provocateur, firstly intended to draw attention to the problem at hand, but ultimately to be debated or even knocked down.

This new model for thinking about and structuring academic libraries (initially presented in section 3.3) proposes that an academic research library should be seen as a collection of services that support the creation of new knowledge. The goal of a library is presented not as the storage and provision of information (or artefact), but as the creation of a space for the support of all aspects of the scholarship process. This model will be used to frame this discussion in the following way. First, it will be used to define a set of characteristics (derived from the data gathered in this research) that are essential to the practice of humanities scholarship. Second, the case will be made that if academic libraries want to remain a relevant part of scholarship in the humanities, they need to support and foster these characteristics. In other words, if digitization is helping to weaken the role of the library in the life cycle of humanistic scholarly production, then by supporting the needs of scholars identified here as characteristics of successful digitization projects, libraries can once again strengthen their relationship with scholars.

10.2 The Perceptions of the Library in Tibetan and Himalayan Studies

Unless directly questioned, none of the scholars interviewed for this research mentioned their institution's library. When it did come up, their descriptions were most often unflattering. The library was usually described as the resource of last resort—scholars only went there if they couldn't get access to a resource any other way. The words “dusty” and “difficult” came up often. One project director, when asked about his project's relationship to the library conveyed an anecdote about an early period in the history of the project when he was in fact physically located in a library:

That was the first time I had ever heard about libraries and it scared me a little bit. Even though [the people I was working with] are leading in their field something about the ideology of the library made me feel a little bit uncomfortable. [...] I had never heard of Dublin core metadata before I went there. And that is fine in a way to not know about it and it is also fine to learn, but it is an assault of acronyms and protocols and it felt like an assault. I had already moved from anthropology to linguistics to do my PhD and I didn't want to retrain as a digital librarian.

Just as Smith was emphatic about not being able to accomplish his work from within a library (see Chapter 1), this project director points to key differences in ideology that prevented him from being comfortable working in a library. Of the five sub-cases analyzed in this research, only one project was administratively housed in a library; two were supported within museums and two within academic departments (albeit one of these—THL—has significant support from a library). While therefore not “library resources” in the traditional sense, there is no doubt that by providing access to rare and difficult to access materials, these projects are providing one of the functions of the library.

Yet all of the project directors interviewed planned on relying more heavily on the resources and infrastructure provided by academic libraries for the long-term sustainability of their projects.

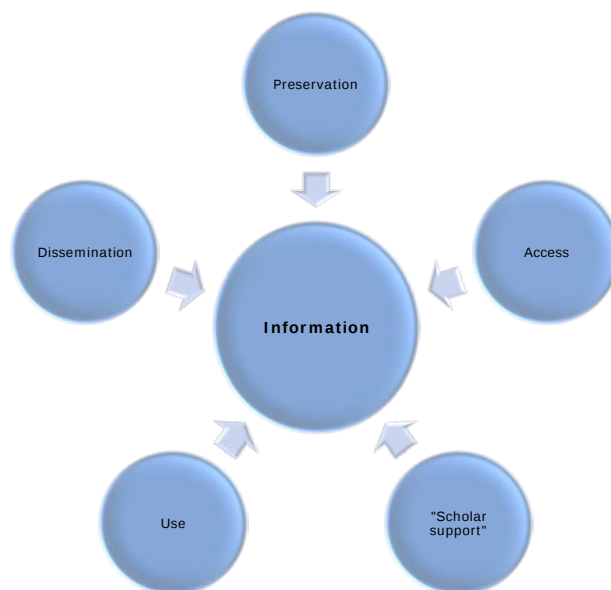
The next sections will be used to describe the characteristics of digitization and digitization projects across Tibetan and Himalayan studies that have in essence replaced the academic library in the cycle of scholarly production for these academics. The final sections will then be used to advance a model of academic libraries that could reincorporate these characteristics as services.

10.3 A Scholar-centric Model of Libraries

In Chapter 2, the argument was made that the evidence of confusion over the current role of the academic library demands a new model and/or theory of the academic research library if they are to continue to serve the needs of scholars in the future. The findings presented in Chapter 6, 7, and 8 present empirical evidence of the nature of the current evolution of scholarship in a particular discipline. The findings in Chapter 9 that describe *why* digitization has been successful in Tibetan and Himalayan studies can help to shape and form the newly proposed model. In other words, what can the success of Tibetan and Himalayan studies in meeting the needs of its scholars through digitization tell us about how the academic research library needs to function in the future if it too wants to continue to meet scholars' needs?

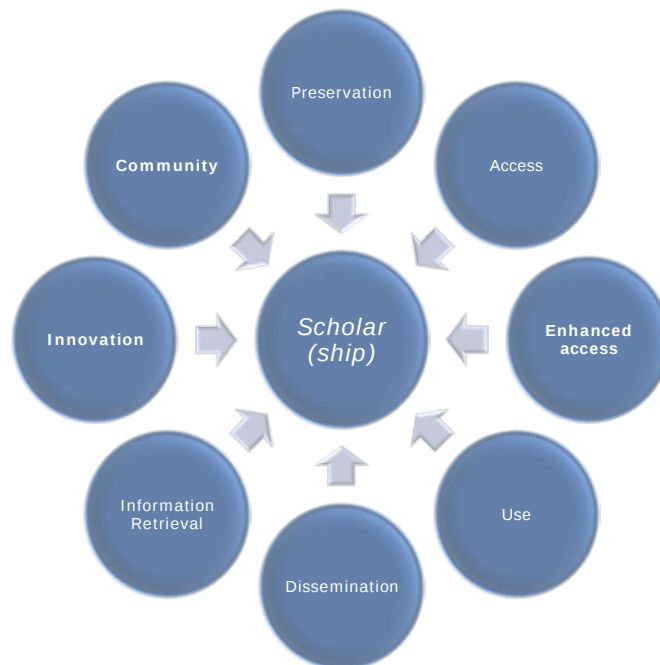
In Chapter 3, it was proposed that the current (and failing) model of libraries that has been in effect from the mid-nineteenth century is one that is centred on information. In preferencing the storage of and access to information, all library services can in some way be seen to serve and support the information itself (Figure 59).

Figure 59: The model of library that puts information at the center has been dominant for about one hundred and fifty years.



The new model of academic libraries that was proposed in section 3.3, on the other hand, puts the scholar at the centre. This model proposes that all library services should be in support of the scholar and the process of scholarship, rather than in support of the information itself. In this model, the library is flexible and malleable. As the nature of scholarship changes, so does the library. The library does not become outdated, not does it stagnate, instead it grows and changes with its core user populations. The library in this new model is not defined by its collections or its ability to support and maintain those collections. It is defined and delineated by the services it provides to users in support of their scholarship (Figure 60). The rest of this chapter will be used to explore how the findings from Chapters 6 through 9 can be used to define and understand those services.

Figure 60: A new model of library is proposed, putting the scholar at the center. In this model, information retrieval becomes one of the many services offered in support of scholarship.



10.3.1 The subtleties of access: innovation and critical mass.

Access is arguably the single most important characteristic of digitization and the most important factor for use. Underlying all of the findings here is the simple fact that digitization has succeeded in Tibetan and Himalayan studies because it facilitates access to rare and difficult to access materials. By contrast, the library is seen by these same scholars as preventing or obstructing access (Gilman, 2010). One doctoral student spoke of his frustration with his university's library:

This place is so crusted over its amazing. I needed a copy of something and they told me I had to ILL¹¹¹ it. And then they told me it would cost me twenty pounds. I needed to check one fact. At twenty pounds a fact I would be in the poor house.

What, then, are the characteristics and details that underlie the kinds of access provided by digitization that are not being provided by libraries? As these digitization projects are successfully supporting scholarship, what can they contribute to a greater understanding of access that can then add to this new model of libraries?

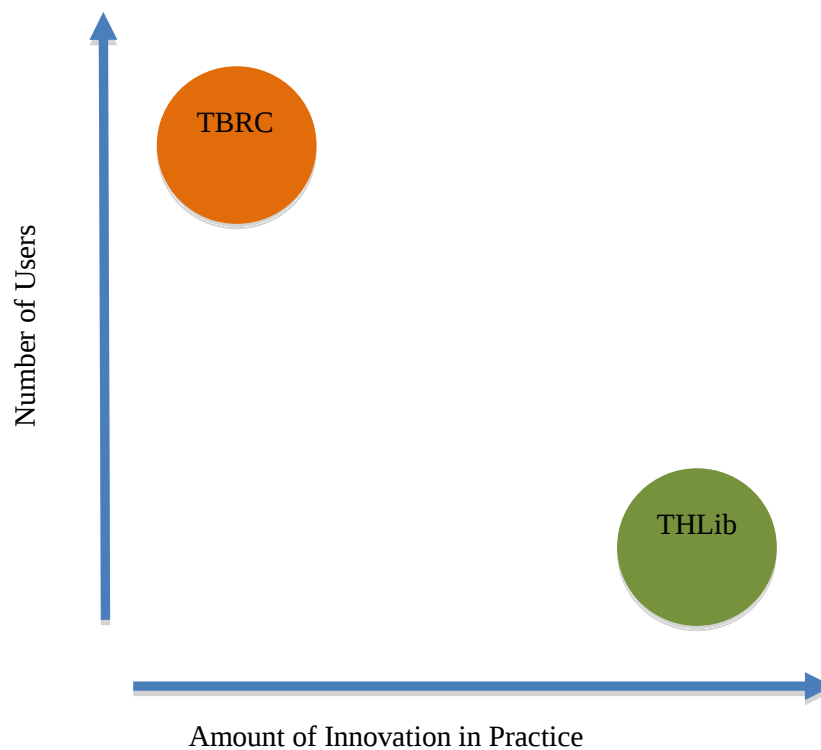
Digitization has essentially changed the definition of access for many scholars. As discussed in section 9.3, simple access to page images is no longer satisfactory for some and increasingly scholars are demanding high quality images and/or keyed texts that in some way innovate upon the analogue experience. As a characteristic of successful digitization projects, innovation must be understood as providing a sort of sliding scale that intersects with the ease of use. Introducing one new innovation at a time (following John Willinsky's principle) will provide a seamless extension of research practices rather than a dramatic change that requires the adoption of many new skills at once. This seamless use, in turn, will insure the adoption of a new technology by a maximum of users.

Looking closely at two of the embedded cases for examples, TBRC replicates existing practice in many ways but substitutes electronic texts for analogue ones. This subtle shift in use is certainly part of the reason for their enormous success and heavy user base. TBRC allows scholars enough

¹¹¹ This is shorthand for requesting something from Inter Library Loan.

familiarity and consistency with existing practices of scholarship to keep the learning curve low, making widespread use and adoption more likely. While TBRC has slightly changed scholarly practice for a large number of users, THL, on the other hand, has revolutionized scholarly practice for a small number of users. By introducing a lot of innovation at once, THL enables radical changes in the process and outputs of scholarship, but asks its users to commit a significant amount of effort and time to learning how to optimize its use. This means that the likely number of users in comparison to a project like TBRC will be low (Figure 61).

Figure 61: The relationship between innovation and number of users



Neither of these projects is “wrong” in their approach to innovation; the important thing to understand here is the implications of the differences in the approach. There are important lessons to learn from both of these models for libraries. Being able to extend research practice for a large number of users, rather than trying to reinvent it will attract a relatively larger number of users. Subsequently, the ability to extend a practice necessitates the understanding of that practice.

Furthermore, the presence of a critical mass of digitized materials in any given field or discipline is essential for the widespread use or adoption of digitization by the scholars in that field. Until that tipping point is reached, the digitized materials will remain marginalized and segregated; they add to the labour of the scholar rather than reducing or simplifying it. In theory, individual projects can achieve critical mass but it is more likely that a whole set of projects together across a field will achieve it together.

This more detailed description and perception of access has been enabled by understanding first that digitization is providing a set of library services and second by viewing these services through the scholar-centric model proposed above. This is a view of library that was in essence proposed by Ranganathan, Carr, and perhaps most succinctly by Pomerantz and Marchionini (2006) as a space not for materials but for people.

10.3.2 Community.

Understanding library as a space for *people* (not just for information and artefact) also helps to underscore one of the most significant themes that emerged from these findings: community. The phenomenon of digitization in Tibetan and Himalayan studies thriving in the midst of a strong extant scholarly community means that digitization has enabled a) the separate digitization projects to be seen as a community of projects that together form a critical mass of resources and b) the tool of digitization to further support the community itself.

The community of Tibetan and Himalayan scholars is very dispersed, with rarely more than two or three scholars in a department; but still remarkably tight-knit (see Chapter 9). These scholars

have always had to cope with sustaining their community over a distance, so there should be little surprise to see them take advantage of digital technologies for that purpose. Some of this is achieved through email and listservs that serve as online message boards for conference and personal announcements.¹¹² Unlike most other professional listservs, many of those posting to Himal-Research, for example, use an informality that indicates a familiarity beyond a traditional professional relationship. Posters often sign messages with only their forename and the list is routinely used for birth and death announcements as well as the more traditional conferences and calls for papers.

As networked technologies help to support and build this community of scholars, the community in turn helps to support the digitization efforts. As seen in Chapter 9, these scholars readily share resources, but also have a strong sense of obligation to contribute to the upkeep and improvement of existing projects as well as to partner on new efforts.

Rimmer et al. found in 2008, that the sense of community was an important theme across the humanities, and one that should be particularly supported by work in a library.

Another common theme raised within the context of descriptions of their working environments was that of a sense of community, and its importance to the experience of being a humanities scholar. When asked about the difference between using electronic and physical texts this scholar offered: “but it’s also a sense of community, because you know, yes, you can look at the stuff at home with your laptop, but at least if you’re going to the reading room it feels that you’re not the only person doing it. . .so there are loads of other dusty people, you know somebody to go for a coffee with, there is the idea you are going to a workplace.” (2008, p. 11)

This emphasis on community and the library’s ability to sustain reflects the importance of the role of success of digitization in supporting the community of Tibetan and Himalayan scholars.

Three of the five embedded cases directly cite collaboration or community building as one of their goals. The director of the *Tibetan and Himalayan Library* spoke even more directly about

¹¹² The two relevant H-Net listservs (<http://www.h-net.org/>) were closed to outside scholars, but “Himal-Research,” a Yahoo Group, was monitored through the course of this research.

building an “information community” that was intended from the beginning to pull together “people, collections, and tools.”

Take a collection, pull together the people that are involved with it in some sense: creators, producers, students, whatever their role. And give them tools to interact with it in creative ways...And so we built this generalized notion of digital library that was people, tools, collections, and we built these web site that was basically were mostly empty. They expressed the ambition. That was how THDL was born.

There is still some question, though, about whether online tools can actually build communities or simply sustain them between face-to-face meetings. Thorny Staples, creator of Fedora Commons, emphasized the importance of the serendipity that comes from face-to-face interactions:

Interviewer: Do you think that the serendipity of interaction can be created online?

Staples: No, but it can support and accelerate it. Fedora was created by email, etc., but it was essential that we meet and eat and drink together. It is critical to be co-located sometimes. The information architecture needs to be there and be seamless to support these projects and these communities between meetings (T. Staples, personal communication, April 21, 2009).

At this point, the foundations for online collaboration are still offline communities. Digitization is facilitating these communities but there is still an important face-to-face component. For many of these scholars, though, that sense of community no longer comes from working in their local research library. Proximity it seems can be in part sustained through digitization.

Eli Noam (1995) spoke about the importance of proximity in libraries fifteen years ago—proximity to other people and to materials. He speaks of the Royal Library at Nineveh as a place where wise men congregated to use the information and to add to it (para 4).

Ironically, it is the university that pays for the network connection that helps its resident scholars to shift the focus of their attention to the outside world – or, in the jargon of electronic communications, to join virtual communities in cyberspace. As this happens – and we are only at the beginning of convenient technology – the advantage of physical proximity of scholars in universities declines steeply. (Noam, 1995, para 10).

Within the context of the scholar-centric model of libraries, then, support for communities becomes a critical service.

Chapter 11: Discussion and Conclusions

During the three years in which this research was conducted, the fate of the academic research library has been continually debated in the popular and scholarly press (Benton, 2010; Gilman, 2010; Kolowich, 2009; Rausing, 2010). Increasingly, those critics who decry the academic library as a waste of the university's space see digitization as a potential replacement (Shaw, May-June 2010). This thesis research has attempted to address this very pressing situation by examining a case—Tibetan and Himalayan studies—where the needs of many scholars (beyond simply access to primary resources) are being successfully met through digitization. In understanding *why* and *how* the needs of these scholars are being met, this research also proposes a new model for academic libraries in which access to library collections through digitization is only one of a collection of services that define the library. In other words, if the future for users lays in accessing library collections online, then the goal here has been threefold: 1) to understand how the needs of academic library users can be successfully met online through the delivery of collections, 2) to elucidate the implications of the change in relationship between scholars and libraries, and 3) to propose a way forward to strengthen this relationship. Only so much, of course, can be accomplished within the scope of a single thesis. The focus, therefore, has been on providing the empirical evidence to support the first two of these goals.

The previous five chapters have been used to present the findings from this research within the context of the research questions laid out in the first chapter. We have seen how the digitization of rare and difficult to access materials is having an impact on the field of Tibetan and Himalayan studies, and how the changing relationship between scholars in the humanities and primary resources is affecting the library. What is left, then, is to determine the significance of these findings within the context of the current literature that surrounds this work as well as to underscore the significance of this research within the context of the academic research library.

This work does not attempt to fit into a single discipline and can therefore not rely solely on a single body of literature to contextualize its findings. As discussed at length in Chapter 2, there are several literatures that contribute to the framing of this research, but ultimately there is a void at their intersection. In arguing for the significance of these findings, then, this is also an attempt to support the evidence laid out in Chapter 3 that argues for the necessity of a new theory of libraries—one that builds on several existing literatures but which innovates to accommodate the changing relationship between scholars and primary resources as well as provide for the expansive view of scholarship taken here (see section 7.1).

11.1 Implications and Lessons Learned

11.1.1 A new understanding of success and sustainability.

One of the greatest difficulties—and most unexpected outcomes—from this research was in understanding the significant demarcation between the success of digitization across an entire discipline and the relative success of individual projects. At the outset, the latter was thought to be the most important factor for understanding the impact of digitization and its implication for libraries. In other words at the beginning, the underlying assumption was that some projects were clearly successful, while others were not; and that understanding the characteristics of successful projects was the most important outcome (See section 9.3 and Figure 48). The reality, of course, was far more complex (Figure 49).

One of the first significant contributions to be made by this work is in its reframing of the traditional notions of success and sustainability in regard to digitization projects. Most literature deals with these themes separately; projects are discussed as being successful or not successful (Bailer-Hainer & Urban, 2004) and models are proposed for the overall sustainability of digitization projects (Middleton, 2005; Guthrie, Griffiths, & Maron, 2008). Much of the existing literature covering both of these topics is instructive in nature (Lampert & Vaughan, 2009; Hughes, 2004; OCLC, n.d.).

Here, though, success and sustainability are inextricably linked. This link is implied in other literature, such as the LAIRAH report (Warwick et al., 2006), and other project-specific evaluations (e.g. Terras, 2009) but here the connection is made explicit. In Chapter 1, successful projects are defined as “those that align the intentions of every participant, such that everyone is getting enough out of the project to sustain the continued contribution of whatever they’re putting in” (C. Mackie, personal communication, 23 January, 2009). In other words, successful projects are defined by their sustainability. This is significantly different from the more common definitions of success that are usually not explicitly discussed, but rather inferred by the instructive documentation that attempts to guide project managers to success (Bailer-Hainer & Urban, 2004; Lampert & Vaughan, 2009; OCLC, n.d.; Warwick et al., 2006). The problem with the way that much of this literature deals with success is that it often attempts to quantify it. It assumes that success can be measured through an economic model, a business plan, or through an ideal number of users. These are not *bad* ways of looking at digitization, but they do not account for the nuanced relationship between scholars and how they find and use primary resources.

Throughout most of the extant literature about digitization projects is in an unanswered (and often unspoken) question—can a digitization project be successful if it has only a few users? By separating the achievement of success from the number of users, this research is refusing to engage this question. A 2007 survey conducted by Schreibman and Hanlon supports this notion. They attempted not to define the success of projects and tools but to determine their perceived value by their developers. Two of their questions related directly to whether the respondents felt that their tool was successful and why. The responses indicate support for the idea that the definition of success needs to be disassociated from the number of users. “Survey responses did demonstrate that low adoption rates were something that developers felt hurt the value of their tools, but it was not their biggest concern: level of adoption was ranked fourth among four potential measures of a tool’s success” (para. 15). Indeed, respondents felt that the most important

determinant of success was whether the tool was actually setting out to do what it was intended to do (para. 25). This echoes earlier findings in the LAIRAH project where participants were concerned that “resources that were well regarded and used in a small community should not therefore be seen as inferior to those that were relatively superficially used by a larger community” (Warwick et al., 2008, p. 96).

By defining the relative success of a project through its sustainability, the dilemma of quantity is removed—it no longer matters how many users a digitization project has, only that there is a strong enough group of users who find value in it such that they are willing to see to its sustainability. And perhaps most importantly, this definition does not contradict the ultimate outcome of this research in regard to success—that the success of individual projects should be analysed separately from the success of digitization as a whole or across a field. This research, follows a growing trend in the related research and looks more broadly at the impact of the use of digital resources, rather than at their individual successes: the LAIRAH project (Warwick, et al., 2006), the Berkeley studies on “Use and Users of Digital Resources” (Harley et al., 2006) and the “Future Landscape of Scholarly Communications” (Harley et al., 2010), and the Impact of Digital Resources on Humanities Study from Rice University’s Fondren Library (Spiro & Segal, 2007). What these reports hint at—that the success of digitization cannot be measured through the success of individual projects—this research tackles more directly. Strengthening the relationship between success and sustainability, allowed this research could be carried forward in a way that put the focus on the success of digitization as a whole within the context of an entire discipline—looking at the act of digitization across the field rather than focusing on the relative success or failure of individual projects or activities. This new perspective allowed the researcher to put forth the notion that that all future research about the impact of digitization is best understood, assessed, and analysed into two distinct categories: 1) the success of digitization as a whole across a given field and 2) the differences between the kinds of projects and how each

succeeds and fails. These areas will not be wholly distinct, of course, as successful projects will clearly contribute to the success of digitization across a field. Yet, any approach to impact assessment should begin with an understanding of where these two categories overlap and where they are discrete.

11.1.2 Reiterating the convenience and speed of digitized resources.

Some of the early findings from this research reiterated work that has been around for many decades. For example, the respondents in this study continually cited speed and convenience as one of the primary factors for use of digitization projects (See Chapter 7). The end-users with whom Bates (Bates, Wilde, & Siegfried, 1995) worked in the Getty Online Searching Project clearly recognized online searching as speeding up the identification and retrieval of research information. Similarly, the concerns voiced by respondents in section 8.4.2 about the vast quantity of resources to which their students have access through digitization projects is also not new, it echoes the very longstanding debate on “information overload” that by some accounts goes as far back as the history of writing (Noonan, 2010) but which first came to a head in the 17th century (Blair, 2003). Within the context of finding information on the Internet, though, Bates’ long-term study of end-users provides a detailed account of researchers’ awareness of the problem within the context of online resources.

They identified the danger of getting great quantities of information and not being selective enough in using the material. As one noted: ‘I. . . creativity has to do, to a very large extent, with selectivity, and flooding people with masses of data is just as bad as not having any, in a way . . . ‘I. Another said: “I’m afraid there are going to be more very boring articles of the sort that just quote thousands of other articles.” Others pointed out that scholarly creativity- “putting the information together in an interesting way and doing new things with it”-is different from the mere gathering of the information. (Bates, Wilde, & Siegfried, 1995, p. 35-36)

This research supports the findings of Bates and others (Rimmer et al., 2008) who have documented both the recognition and the impact of the increased speed of research in the humanities. What this work intends to do, however is to go beyond the simple documentation of

the increased pace of research to provide a greater understanding of the impact of this acceleration. Bates' participants almost inherently understood the implications that widespread use of the online search tools would have on the nature of their work as well as their respective disciplines. "Several respondents felt that the availability of online searching would increase the standards of scholarship, and make it necessary for scholars to be aware of a wider range of literature" (Bates, Wilde, & Siegfried, 1995, p. 35-36).

This research presents evidence indicating that as researchers have become comfortable with both online searching techniques and the use of digitized content, the process and outcomes of their work are beginning to be transformed (see section 7.2.3.1). What was suspected by Bates' participants can now be documented. Take, for example, the interviewed scholar described in section 7.2.3.1. The process described by the respondent in section 7.2.3.1 is in itself not new, it is a form of Key Word in Context (KWIC) searching, which is in turn a variation of what Busa was trying to achieve many years ago through the automation of a lemmatized concordance. Unlike Busa, though, this user is performing sort of concordance creation on the fly—the concordance or KWIC index is never actually created in any form, but the methods of concordance-creation are used to facilitate the research process. In essence, the process has been streamlined and a step removed. The concordance is never created, but it is *implied*. This is reiterated in the later discussion of the demise of the printed index in the discussion on formats (section 8.1). The evidence presented here is not intended to imply a widespread transformation of research processes across the humanities, but this example may provide the impetus for further research in this area both on the positive and potentially negative impacts of evolving research practices. From nearly the inception of online search tools, researchers have warned of the potential negative impacts of dealing with such large quantities of information. In her study *Indexing for the Humanities* (1994), Helen Tibbo cautioned readers:

While automation can pull together resources dispersed in time and place, such action, particularly if the systems cannot make fine discriminations among items, can create

further problems. As Lester Asheim (1982, p. 215) has noted, “increasing the amount of information and speeding up access to it is more likely to result in information overload and entropy than it is to improve the receiver’s ability to benefit from the information (p. 607)”

Importantly, though, what has been documented here has been an instance where the quantity of information available and the speed with which it can be accessed has in fact improved “the receiver’s ability to benefit from the information” (p. 607).

11.1.3 Understanding the role of usability and accessibility.

As mentioned above, at the outset of this research certain assumptions were made: namely that accessibility, usability, and sustainability would be the key characteristics of successful digitization projects (see Figure 48). From the data, though, three other themes emerged as the most significant properties of and factors for success: critical mass, community, and innovation. As with the redefinition of sustainability and success, the emergence of these three themes fundamentally changes the understanding about the role of usability and accessibility in assessing the impact of digitization.

The current literature about the accessibility of collections on the web tends toward providing instruction and guidelines for making web content available to the widest possible audience. The W3C, for example, makes the guidelines for creating accessible web pages easily available on their web page (<http://www.w3.org/TR/WAI-WEBCONTENT/>). In this way, literature about “web accessibility” is often geared toward ensuring web content is “accessible” to users, particularly those with disabilities. Increasingly, though, accessibility is being tied to usability; and together, both are being informally linked to measuring the success of a web site. Web usability expert Sarah Horton, for example, defines accessibility and usability in the web version of her book, *Access by Design* (2005) (<http://universalusability.com>) [emphasis in the original]:

Accessibility is concerned primarily with making the content and functionality of web sites accessible—within reach—to all users. Universal usability goes one step further, striving to make the content and functionality accessible *and usable* by all.

As Horton accurately illustrates, accessibility and usability overlap. While the literature mentioned above about accessibility does indeed tie it to functionality, to understand more about the literature of web *usability* one needs to look at the intersection of cognitive science, design, and computing variously known as human computer interface design, human computer interaction (HCI), and user experience design. Donald Norman is perhaps the most well known in this field and brings a combination of cognitive science and industrial design to bear on his evaluation of good interface design. Norman's approach provides very practical—but also very vague—guidelines for interface designers such as, "make sure that (1) the user can figure out what to do, and (2) the user can tell what is going on" (Norman, 1988, p. 188). Norman's business partner, Jakob Nielsen, provides a similarly practical approach, the outcome of which is commonly seen as a set of heuristics for testing the usability of web sites (Nielsen, 2005).

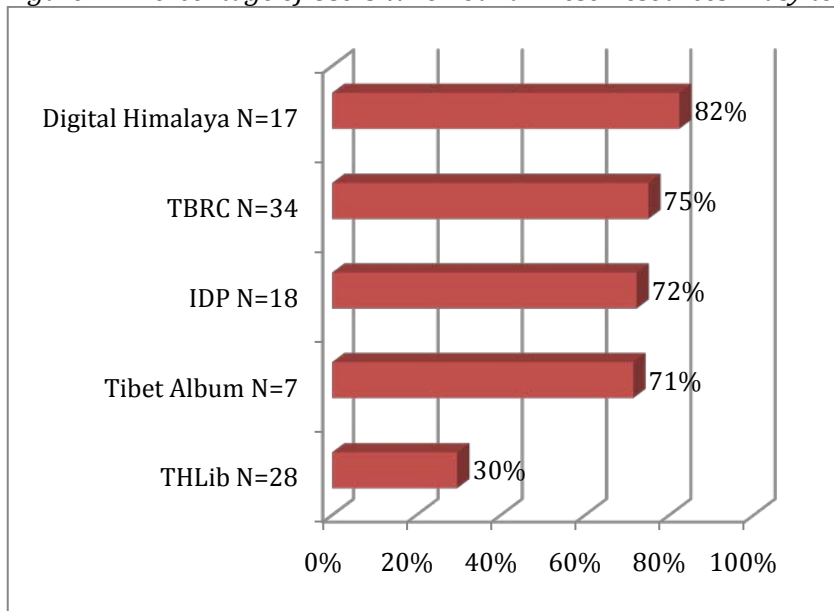
Whatever their ultimate approach to usability in web design, Horton, Nielsen, and Norman share a common goal—to provide extensive and practical advice for the creators of web sites.

Not limited simply to the design of web sites, Ben Shneiderman's work is much more specific to the design of computer interfaces. His approach can be characterized by some of his earliest work (1980, 1981), which called for the consideration of human behaviours in the design of computing systems. Today, Shneiderman's research focus is on information visualization but he remains most well known for some of his practical guides to "universal usability." His Universal Usability in Practice web site (<http://otal.umd.edu/uupractice/>), for example, promotes a set of principles and strategies to "enable the widest range of users to benefit from web services" (para. 1).

There is no doubt that the work of Horton, Nielsen, Norman, and Shneiderman, provide significant guidance for web developers and project managers on creating usable web interfaces for digitized collections. One approach to this research might have been to use a set of heuristics derived from their work to assess the usability of the sites considered in the sub-cases. This would have followed on the work of some of the early "digital library" literature that set out guidelines

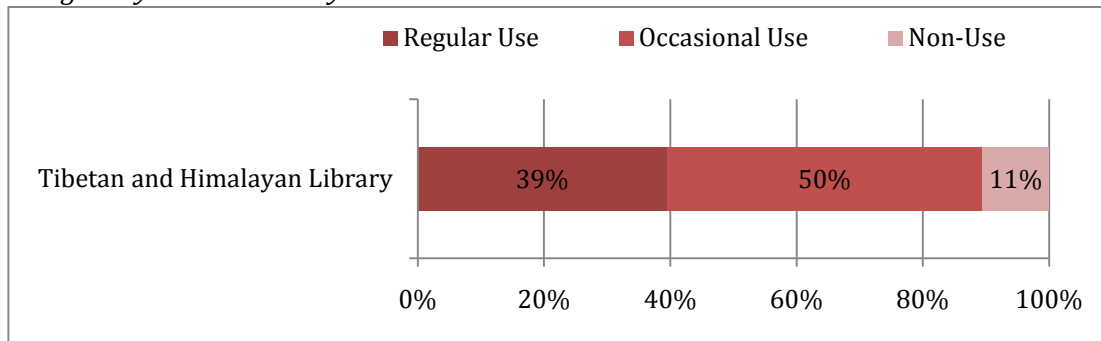
or principles for success (Arms, 2000; McCray & Gallagher, 2001) There is no assurance, though, that the usability of an individual site could have been correlated to its impact on any given scholar's practice or outputs. Instead, the findings here complement other research that supports the proposal that even if users deem a website to be difficult to use or navigate (that is, lacking in usability or accessibility), if the content is important enough, the researcher will still use the site (Meyer et al., 2009; Spiro & Segal, 2007). In the survey of Tibetan and Himalayan scholars, for example, only 30% of respondents who were aware of the Tibetan and Himalayan Library found it "easy to use." This was by far the lowest of all of the sub cases.

Figure 62: Percentage of Users Who Found These Resources "Easy to Use"



Despite this, 91% of respondents who were aware of the site still use it.

Figure 63: 89% of the Respondents who are Aware of the Tibetan and Himalayan Library Use It Regularly or Occasionally



Other factors beyond the importance of content that may explain this sort of use have been explained before in the existing literature. Disciplinary and professional specificities (Talja & Maula, 2003) and even mental models (Makri et al., 2007) can influence use and number of users. Therefore, by dispensing with the ideas of usability and accessibility as significant factors for use, the possibility opens of finding other factors that allow for the assessment of the impact of digitization in the aggregate—across a discipline. It is only in minimizing the importance of accessibility and usability as well as in understanding the revised relationship between sustainability and success that the other, less understood themes of community, innovation, and critical mass can be understood.

11.1.4 Community

The findings of this research show that the success of digitization in Tibetan and Himalayan studies is due in part to a strongly connected community of scholars whose engagement can be easily supported and fostered by technology. Within this community, the scholars are generous with their time and resources and feel a personal and passionate commitment to both their community and their work. The result is twofold: the presence of the community influences the way the projects are constructed (that is, they are constructed with a particular community in mind), and the strong connections between members of the community support the overall creation and use of the digitization projects.

There is a vast literature that touches on the role of “communities” in the use of both digital technologies and e-resources, but only some of that literature harmonizes with the idea of the “community” as it is employed here. In their 2007 paper, for example, Talja, Vakkari, Fry & Wouters (2007) undertake a quantitative analysis of the use of electronic resources from a particular supplier (FinELib) to try and understand the wide variations in use across different fields. They do acknowledge the already well-established observation that “a field’s publishing patterns, reading patterns, and e-resources usage patterns are intertwined (Tenopir et al., 2003),” but Talja et al., attempt to explain the connections between characteristics of research cultures and wide use of wide variations between different disciplines. The research is conducted by looking not at communities, though, but at “groups.” Talja et al. look at group membership as a proxy for microdependence (i.e., colleague dependence) (p. 1679). The authors’ finding that “members of tightly knit groups used e-journal databases and alert services more than did members of loose groups and scholars working alone” (p. 1682), may be supported here, but the goal here was never to compare one kind of group to another.

Other work regarding the relationship between communities and use of electronic resources focus on patterns of communication within a designated field. Törmä and Vakkari (2004) found that communication patterns in the local research environment significantly influenced e-resource use. Kling and McKim (2000) were looking directly at how patterns of communication varied across academic communities.

Work on the role of communities can also be seen in Barrett (2005) and Buchanan, Cunningham, Blandford, Rimmer, and Warwick (2005), the latter of whom found that “[h]umanities academics, particularly those established in their field, used the academic community as an important source of recommendations” (p. 277). This is supported by the findings here that illustrate the role of community in the overall awareness and dissemination of digital projects (section 9.2.2.8), but this is also widely documented elsewhere (Borgman, 2007; Meyer et al., 2008).

What is common throughout most of this literature is an attempt to understand the influence of communities, disciplines of practice, and disciplinary characteristics on use of e-resources by looking at the characteristics of the field or discipline at hand. Researchers looked at communication patterns (Törmä and Vakkari, 2004; Kling and McKim, 2000) searching patterns (Bates, 2002; Talja et al., 2007), and perceived availability of resources within a discipline (Tenopir, 2003; Törmä & Vakkari, 2004). Most of this work also tends to generate data for the purpose of comparing fields or subfields (Kling and McKim, 2000; Fry and Talja, 2004).

A group of colleagues does not necessarily a community make, though. As Borgman states, “disciplines and fields are often too large an aggregate on which to draw inferences about behaviour” (2007, p. 151). In most of the work that is ostensibly about communities, the “community” is used as a convenient way of grouping scholars, it is used as a shorthand for a set of researchers with a common interest, but it is hardly ever studied in depth. A notable exception to this is the work of Eric T. Meyer in studying the effects of adoption of digital photography on the work practices of marine biologists (Meyer, 2007). His in-depth study shares much with the techniques and definitions presented here.

The representation of the community here draws much more from Wenger’s “community of practice.” (Wenger, 2006). Borgman (2007) uses the concept of the community of practice to describe the flow of communication between scholars (2007, p. 151), but what is more important in this research is Wenger’s rich characterisation of a community of practice. “Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (2006). As described in Chapter 9, the passion, personal commitment and moral imperatives of the members of the community of practice described here are significant factors in the overall success of digitization in the field of Tibetan and Himalayan studies.

This research is certainly not the first to deal with the influence of communities on the use of digital resources, but what is what sets this research apart from most is the attention on the qualities of the community, rather than the characteristics of their outcomes. The intention was to look not at the frequency of their communications, but at the quality of them. For example, the act of sharing resources that have been hand-encoded or personally scanned can be seen as one that ties the community of practice together. The word-of-mouth aspects of these sorts of acts of information sharing is well documented, but this work attempts to provide a richer description of what that act of sharing looks like and what its consequences are. The qualitative analysis of interviews, site visits and document analysis are intended to make for a more nuanced understanding of the qualities of the community at hand. No attempt was made to quantify the characteristics of this community through its communication patterns and attempts to use link analysis to illustrate an online reflection the close and loose ties between members of the community failed. Instead, what emerges is a rich description of a strong community of practice. That community of practice both supports and is supported by the digitization projects they create. More research is clearly needed in this area to fully understand the impact that a single community of practice can have on the success of digitization across a discipline, but this research is intended in some ways to provide a heavily qualitative view that complements the relatively quantitative extant literatures.

11.1.5 Innovation

The nuances of innovation—that is introducing enough innovation to promote use but not enough to discourage initial exploration—emerged as a critical but unexpected factor in this research. As with any field, some projects in Tibetan and Himalayan studies can be said to be more innovative than others; and one of the important patterns that emerged from this research is the understanding of the tradeoffs between innovation and number of users (Figure 62).

Innovation has not been well covered in the extant literatures of digital humanities or digitization projects and it is an area ripe for further exploration. Firstly, it would be worthwhile attempting the application of the model describing the tradeoffs between users and innovation to other fields. It is possible that cross-disciplinary comparisons might lead to further understanding of the reasons for adoption of highly innovative tools and projects by some and not others. In this case, the literature discussed in the previous section regarding the qualities of communities and disciplines may help to illuminate such findings.

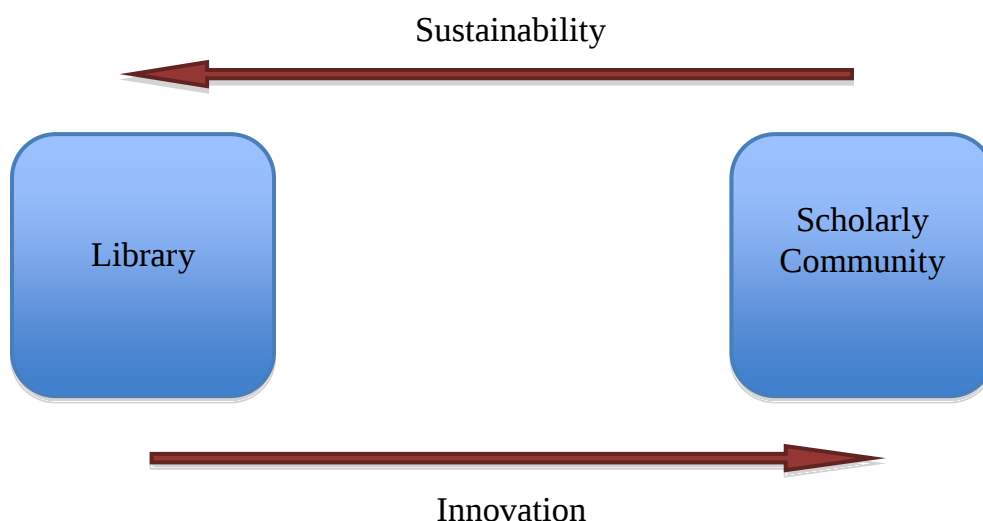
From a practical perspective, there are two important outcomes that can arise from having a greater understanding of the role of innovation in the use and success of digitization projects. Firstly, if there proves to be a great disconnect between what large numbers of users need and want and the relative innovativeness of a project, this could have radical implications for funding. There is no doubt today that innovative projects are more likely to get funded.

Granting agencies reward innovation and originality, not steady, measured progress. No one writes a grant application to say, “With just two more years of funding we can finish the good work we’ve started. No, we’re not going to be doing anything new. We just want finally to put this thing to bed” (Kirschenbaum, 2009, para. 3)

Yet, if the findings here prove generalizable, funding agencies will need to understand that they are supporting the creation of projects that can have a transformative influence on the research of a few, but may not be useable by the widest number of people.

Similarly, there is a practical lesson in here for libraries, who need to understand not only the role of innovation in creating successful digitization projects, but how to support innovation. This is vital for the continued relationship between libraries and humanities scholars. The evidence here suggests that scholars are finding the most support for innovation in the creation of digitization projects *outside of the library*. Yet every sub-case analysed here was looking toward a university library for the long-term sustainability of their project. This creates a constant tension between scholarly communities and libraries (Figure 65).

Figure 64: The relationship between libraries, scholarly communities, innovation, and sustainability.



The implications of this model are immense for libraries. If they are not involved in the creation of digitization projects, the sustainability and preservation of this technologically diverse set of projects will be particularly difficult. Conversely, if they decide not to preserve or sustain these projects, libraries will be missing the opportunity to collect and disseminate what is rapidly becoming the intellectual output of humanities scholars. Again, this issue touches on one of the big underlying (and unsolved) issues in the sustainability of digitization projects—digital preservation.

11.1.6 Critical Mass

The importance of having a critical mass of collections online cannot be underestimated in the success of digitization across a field. Each of the sub-cases analysed here contributes to an overall impact on the inputs, practice, and outputs of scholarship in Tibetan and Himalayan studies. The *Tibetan Buddhist Resource Center* has amassed a collection of texts that are so fundamental to the work in this field that users have been willing to overlook its (formerly) cumbersome user interface. The *International Dunhuang Project* too, is successful because of the importance of its collections, but has provided a service in the form of its high quality images. THL has, on the other hand, succeeded in changing structures of collaboration and work on a small (individual)

scale and most noticeably visibly changed the outputs of scholarship. *Digital Himalaya* is changing sustainability models by lowering overhead costs and simplifying infrastructure. The *Tibet Album* is successfully creating a bridge between resources for scholarship, teaching and museum exhibitions. It is only together, though, that these projects are succeeding in changing the field of Tibetan and Himalayan studies as well as providing a form of digital repatriation—preserving and disseminating the textual and visual culture of Tibet and the greater Himalayan area. Several of these collections (and TBRC in particular) have formed a critical mass of online resources that are comprehensive enough to allow for changed information seeking behaviour of scholars in Tibetan and Himalayan studies. In short, research look for materials online because there is a high likelihood that they will find something that they need.

Early literature—such as Abby Smith’s *Why Digitize*—addressed the issue of critical mass head on by calling for institutions to collaborate so that they might form one (1999). She would later address this issue at some length in her 2001 *Strategies for Building Digitized Collections*. She observed that “critical mass” was present in “nearly all the written guidelines for selection and is commonly noted in conversation” (p. 17) with regard to the creation of digitization projects, but was still “ill-defined” (p. 17). Achieving critical mass was a particularly daunting objective ten years ago, when digitization was expensive and the thought of mass digitization nearly unfathomable (Rieger, 2008). Yet, with the announcement of the Google Books Project in 2005 (Carlson & Young), discussions of critical mass have largely stopped. Materials are still being digitized independent of Google Books, and collections are still being gathered from existing digitized content. As the pressure to illustrate the impact of digitization increases, the role that critical mass plays in meeting the needs of scholars should be readdressed.

11.2 Contextualizing the Debate About Reward Systems

In section 8.1 there was evidence of a clear lack of agreement amongst scholars—and those that support them—about whether the electronic output (digital humanities resources, digitization

projects, and other less categorizable outputs) of scholars constitutes scholarship or whether these are simply tools that *facilitate* scholarship. In section 8.2 this debate was extended to incorporate the current discussion in regard to reward systems. This debate about the role of digital projects in reward systems has been ongoing for many years now and is well documented. It is a steady topic in *Digital Humanities Quarterly* (Flanders, 2009; Raben, 2007; Schreibman & Hanlon, 2010; Unsworth, 2009), and Bethany Nowvitskie talks about this issue frequently on her blog, encouraging humanities scholars interested in digital technologies into “alternative academic careers” (see, for example, “the #alt-ac track: negotiating your “alternative academic” appointment” (Nowvitskie, 2010)). While informal communications by Nowvitskie and others provide innovative solutions for scholars seeking recognition for their electronic work, more formal and traditional venues seem to be painting a rather bleak picture for the career paths digital humanists. In 2007, the Modern Languages Association convened a Task Force on “Evaluating Scholarship for Tenure and Promotion” to address in part “the worry that forms of scholarship other than the monograph are not properly recognized or evaluated, especially when they come in electronic form” (p. 13). Their initial findings indicated that academic departments were in fact not getting more inclusive or thoughtful about the inclusion of electronic formats, but less. “While publication expectations for tenure and promotion have increased, the value that departments place on scholarly activity outside monograph publication remains within a fairly restricted range” (p. 10-11). While ultimately the MLA task force would make a recommendation encouraging departments to “recognize the legitimacy of scholarship produced in new media” (p. 63), their conclusions were not hopeful,

Even more troubling is the state of evaluation for digital scholarship, now an extensively used resource for scholars across the humanities: 40.8% of departments in doctorate-granting institutions report no experience evaluating refereed articles in electronic format, and 65.7% report no experience evaluating monographs in electronic format (p. 11).

These findings have been supported as recently as 2010, when the field of history was still described as “a book-based field” (Harley et al., 2010, p. 389). Many humanities scholars—particularly those pre-tenure—are still portrayed as conservative in their publication outputs (Harley et al., 2010; Madsen, 2008a) and “[m]ultimedia websites, archival databases, and other digital activities are seen not as full-fledged scholarly products, but rather as methodologies that support or extended the monograph or formal articles” (Harley et al., p. 389).

Nonetheless, researchers focusing on this area still see hope for change. Some of that hope stems from what was described earlier in this research as the “superstars” of digital projects in their given fields—those who are able to raise money for their projects while still maintaining their academic status. As reported in the LAIRAH project:

The advocacy of key individuals who are respected equally for their scholarship and digital knowledge may have a galvanizing effect on the production of digital resources. If such scholars are seen to have attained recognition and promotion as a result of their digital research activities, the products of such digital research ought themselves to acquire prestige, in an analogous fashion to the respect accorded to books written by distinguished scholars. (Warwick et al., 2006, p. 39)

Beyond strong leadership, there is further hope on the horizon for those eager to see digital projects carry weight in the reward systems of academia. In 2014, the Research Excellence Framework will replace the Research Assessment Exercise for setting benchmarks and “establishing reputational yardsticks” (HEFCE, n.d.) at institutions of higher education in the UK. This new approach will focus not on quantity of research outputs but on their quality and impact. The definition of “research output” has been broadened significantly for the REF and all types of outputs from research (defined as “a process of investigation leading to new insights effectively shared” (HEFCE, 2010, para. 2)) will be considered for evaluation. As the decision to nominate research outputs for consideration in the REF will be up to the department themselves, the onus will in some way be on them to forward the consideration of digital formats for evaluation.

11.3 Further Implications for Libraries

The discussion of rewards and recognition once again illustrates the reason for insisting that this work be understood within the context of libraries. With the coming of the REF in the UK, the pressure that libraries are under to play a greater role in assessing impact is made explicit. By insisting that this work be understood within the context of libraries, the intention is in part to prepare libraries for their inevitable future. Libraries will be under pressure to set up institutional repositories and to work with and provide bibliometric data.

Even though the final configuration of the REF's requirements has yet to be finalized, librarians are already planning for it. This may involve setting up a cross-institution publications system, workflows, profiling systems and linking up disparate information elements. Some institutions have opted for an open access mandate to ensure the flow of research outputs into institutional repositories, and many are looking to buy bibliometric data from commercial suppliers in bulk and import it into their local systems. (OCLC, 2009, p. 33)

This will also mean that methods will need to be devised for understanding and incorporating the impact of other forms of scholarship as they begin to be recognized by these bodies.

The future of the relationship between scholars and the library hangs in the balance and the decisions made in the next few years will solidify their future relationship. It has always been the role of the library to collect, organize, and make accessible the scholarship of the community it supports. Within the context of this research the current dilemma becomes apparent. Most of the sub-cases studied here were created outside a library and not initially making use of library digital infrastructure. Yet, all the projects recognize that their future sustainability lies in an academic research library. So this research is in some way to call to arms for libraries to both recognize and act on the current situation. The presentation here of a framework in which the creation and support of these projects can be more strongly integrated into the library is intended to do just that. The new model of library that is proposed here is fluid and dynamic. It is defined as a set of services to meet the needs of scholars, but as those needs change so will the library. Some libraries are already moving toward this new model—reincorporating the functions of their campuses publishing houses (Abbott, 2008; Meyer, Madsen, & Fry, 2010) and working with

scholars to dynamically understand the impact of new trends in academia, such as the open access movement (JISC, February 2010; OCLC, 2010). The presentation of this new model within the context of this research is intended to make these new directions explicit, but it is also a proposition. It endeavours to both indicate an awareness of the significance of these findings for the future of the academic research library, but also to propose a way forward that allows for the strengthening of the library within the context of the scholarly process. In looking at the impact of digitization, then, the impact of the changing nature of scholarship on libraries cannot be ignored. To reiterate Berger's insightful understanding of the power of the social sciences, "[w]e have the possibility of stopping in our movements, looking up and perceiving the machinery by which we have moved up. In this act lies the first step toward freedom" (Berger, 1963, p. 176).

This is not the first such attempt to move the purpose of the library forward in synch with the purpose of digitization. In 2000, David Levy made an impassioned plea for "stronger participation from the traditional library community" in setting the agenda for "digital libraries" (p. 25).

The current digital library agenda has largely been set by the computer science community and clearly bears the imprint of this community's interests and vision. But there are other constituencies whose voiced need to be heard. We have an opportunity, as yet unrealized, to debate our purposes with a broader of the population whose lives will be affected by the work that we do (p. 25).

A decade later, the computer scientists may not dominate the "digital library agenda" but arguably, libraries don't either. This research is an attempt—at least in part—to provide yet another opportunity for libraries to recognize the opportunity before them, to work with the constituencies they serve, and to continue to actively shape their purpose rather than to have it shaped for them.

11.4 Limitations of This Research

On a large scale, the individual shortcomings of each of the projects studied here can be overlooked as each of these projects is still in existence. In that way, they meet the definition of

success set out at the beginning of this research. Ultimately, though, the long-term sustainability of any of these resources has not been resolved. They remain in the hands of strong and resourceful leaders, but there is an open question as to whether that leadership can be transferred or whether the projects can succeed without it.

It was hoped that a clear model for sustainability would emerge from this research, but it has not. Ultimately, the task of creating sustainability models is beyond the scope of this research and therefore sustainability has not been addressed here as holistically as some may have wished. Designing a sustainability plan needs to consider the particular architecture of any given project. In some cases the data may be easily sustainable, but the interface through which it is accessed, not. These questions then lead to discussions about methods of digital preservation. Similarly, any significant discussion of sustainability would need to consider the individual economic model of the parent institutions and organizations. Nonetheless, each of the projects studied here contributes something new or significant to the general discussions of sustainability (see section 9.3.3), but a full-scale assessment of sustainability models would be a whole project in and of itself. Finding a sustainability model is not as simple as cumulating the individual successful characteristics of these projects and it therefore must be left for others to discuss and debate in more detail. Several groups are doing significant work in assessing and creating sustainability models for digitization projects. Most notably, the JISC has put significant effort in this area. For more information see their page on the *Sustainability of Digital Collections* (JISC, n.d.).

Another limitation of this research is of course the boundary created by the selection of the case. The benefits of this case were discussed throughout this thesis and the importance of finding a discipline where the impacts of digitization were so apparent and could be studied at close proximity with a significant number of the scholars in the area were significant. It is just a single discipline, though, and although efforts were made to understand the overlap with other sub-disciplines in the humanities, these findings cannot necessarily be generalized broadly. This

research provides evidence that in the field of Tibetan and Himalayan studies, the practice and output of humanities scholarship is changing as a result of the digitization of primary resources. Just as access to journal literature online shifted practice across the disciplines, it is possible that continued (and eventually thorough) digitization of rare materials will similarly revolutionize the practice of scholarship across the humanities, but more data will have to be collected in other fields to understand this.

The projects remain very unique to a particular faculty or sub/sub-discipline. So in this way digitization has not changed the humanities—it remains a loosely tied group of disciplines with unique characteristics in practice and outputs. (M. Hemment, personal communication, June 30, 2008)

This approach does advance a framework for assessing digitization projects, their development and impacts on scholarship, thus allowing for the replication of the methods, which allows for either the reinforcement of the findings or for other patterns to emerge across the broader humanities.

11.5 Future Directions

The importance of understanding the role of digitization and how it is changing the relationship between scholars and libraries is more important than ever. This research is intended to provoke the field of library and information science into a more holistic understanding of the current problem. Most importantly, this research raises the question: if the field focuses solely on matters of information, what will be lost? To that end, there are a number of future directions for related research that emerge out of this thesis.

The methods used here could easily be replicated in other disciplines and fields. It would be interesting to see if replication reinforces the roles of community, critical mass and innovation, or if new themes emerge. Importantly, though, any replicating research must take into account the critical divide between studying digitization across a discipline and examining individual projects.

Michael Hemment,¹¹³ faculty liaison for library-based digital projects at Harvard University, says that digitization projects are changing scholarship in the humanities, but he sees it as a “generational thing” (M. Hemment, personal communication, June 30, 2008). There is evidence that changes in the inputs, practice, and outputs of scholarship are both present and growing, but according to this research these changes are not necessarily coming from one generation. Instead, these projects are being led by those who are secure enough in their positions to be willing to “experiment” with digitization and digital scholarship. Across the humanities this means that a series of “superstars” have emerged—those who have the time and stature at their institutions to experiment with something new and who are repeatedly successful in gaining funding from outside organizations.¹¹⁴ As Hemment noted, overall, “there is still not a lot of support for digitization.” In the coming months and years, it will be important to follow whether this structure continues in place or whether new reward and/or funding systems emerge that allow a larger number of faculty and scholars to take part in digitization efforts.

In section 9.2.2.5 the issue of digital or virtual repatriation was touched on in regard to the overwhelming consensus from the analysed projects that their work is intended at least in part (if not primarily) to give back these materials to the cultures from which they came. Digital repatriation is burgeoning field that has a long history in museum and archival studies. This was too big of a topic to address successfully within the topic of this research project but is an important area to keep abreast of, particularly with regard to the digitization of non-western materials by western scholars. There is an extant body of literature that deals with the ethics (Britz and Lor, 2004; Boesrup, 2005; DeLusenet, 2007; Lor, 2008; Lynch, 2008) of digitization but more work could be done to mainstream this important discussion.

¹¹³ Hemment is in an interesting place to comment on this situation—he is the primary faculty liaison at Harvard for library-based digitization projects.

¹¹⁴ Looking across the digital humanities you have people like Gregory Crane (the Perseus Project) and Jerome McGann (the Rossetti Archive). Within the dataset concentrated on here, David Germano fits this description.

Finally, the scholar-centric model of libraries proposed here offers a space for debate, discussion, and replication/extension of this research. This research began with the hope and expectation of finding an example of a true “digital library”—that is, one that fit the scholar-centric model proposed here. What was ultimately discovered was that the library itself—the core functions that define a library—are dispersed. Some are online (resources), some offline (social networks and communities of practice) or facilitated by electronic media (social networks) but all are sustained by people. The disintermediation of the scholarship process is still in a formative stage in the humanities and the role that the library will or will not continue to have in that relationship will be an increasingly important area of research. The scholar-centric model proposed here will hopefully provide an opportunity to provoke debate, discussion, and empirical research about the changing role and relationship of the library in the process of humanities scholarship.

Appendix 1: Interview Framework

The following questions were used to guide and shape each interview.

Questions for Project Personnel

- What do you see as the primary motive for digitizing these materials?
- Who do you see as the target audience?
- What steps have you taken to tailor this project to your target audience?
- How successful do you think you have been in reaching that audience?
- What do you know about how people are using the online collection?
- Have there been any surprises or unexpected outcomes?
- Who were your intended audiences when you began this collection?
- Can you describe the ways in which people may have accessed these resources before the digitization project?
- To what extent do you feel you have reached your intended audiences?
- What measures do you regularly track? How often do you do this? Who is involved in analysing those reports or data? Can you show them to me?
- What do you know about the use of the collections?
- What kind of feedback do you get from users? Has this changed during the lifetime of the resource?
- Do you keep track of them / in touch with them? If so, how?
- How was the project marketed / disseminated? (Paper, conferences, events?)
- Do you feel these marketing strategies reached your target users?

Questions for Scholars

- Can you tell me a little bit about your work? How you would describe your specialization?
- Can you tell me a little bit about your research process, how you identify new projects or topics?
- Has your work changed since you started in this area? Do you think the field has changed?
- Do you use digital resources in your work now?
- Have you ever been surprised at what you have found online or not online?
- Do you do a lot of travel to see primary resources?
- Do you think your behavior is typical?

- Do you think this sort of availability will change the questions that you will ask in your research?
- Do you have any suggestions on how to get in touch with some of the students in your department?

Questions for Experts (examples only)

- What do you know about how faculty are using digitized materials?
- Do you have any thoughts on what makes something usable or not?
- You work closely with faculty, do you play any role in designing digitization projects and/or selecting materials for digitization?
- Do you have a sense of what makes a successful / usable digital collection?
- What do you think is the relationship between the field of digital humanities and digitization projects?

Questions for Subject Librarians

- Could you tell us a little bit about your role as subject librarian, particularly in recommending resources to users
- How do you find out about new electronic resources?
- Do you try out the new resources yourself before recommending them?
- Do you recommend subscription resources as well as free ones?
- Are there differences between how you find out about each, or about how you judge each?]
- How does this differ from the analogue resources that you recommend
- At some good analogue vs. digital questions.
- Do you get feedback from users?
 - If so, by what means (contact, email, etc)
- Are you approached by users who need help using or accessing digital resources?
- Are there any resources that you think are great?
 - Any digitization projects (as opposed to subscription databases) in particular?
- What makes it/them great?

Appendix 2: Survey of Scholars and Potential Users

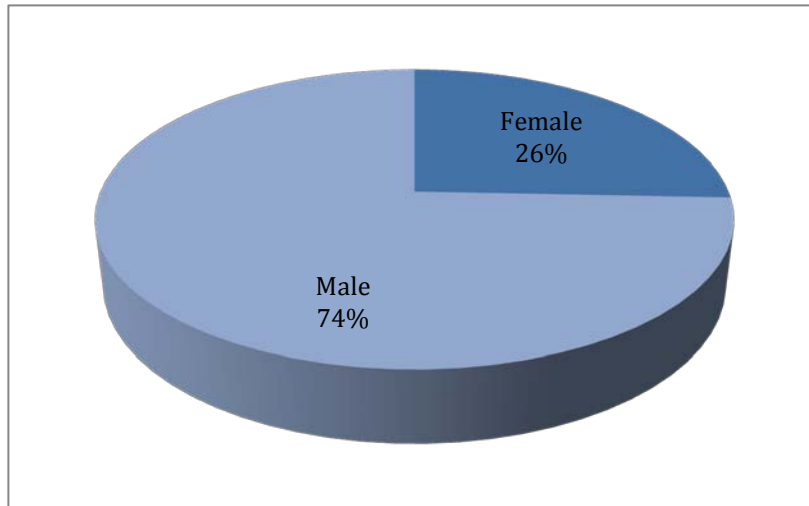
Introduction

This survey was designed and administered in November and December of 2009. A full description of the methods used can be found in section 4.4.3 of this thesis. The results are not presented here in the order fielded, but in a structure that facilitates their reading within the context of the goals set out (p. 94). The TIDSR survey (Meyer et al., 2009) is referred to throughout the analysis of these findings and where appropriate figures from that survey are presented to facilitate an understanding of the relationship of Tibetan and Himalayan studies to the broader humanities. The full set of those results can be found starting on page 131 of the TIDSR final report (Meyer et al., 2009).

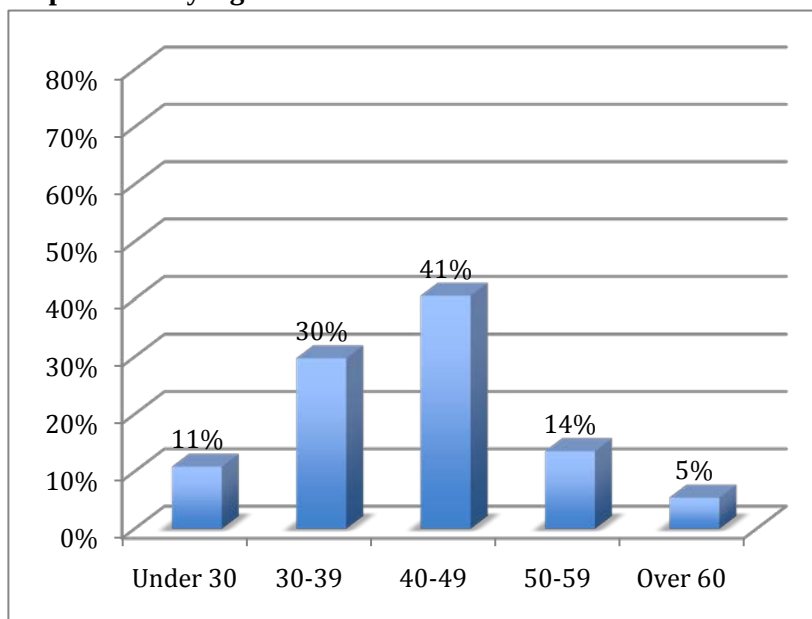
Survey Results

Part I: About the Respondents

Respondents by Gender

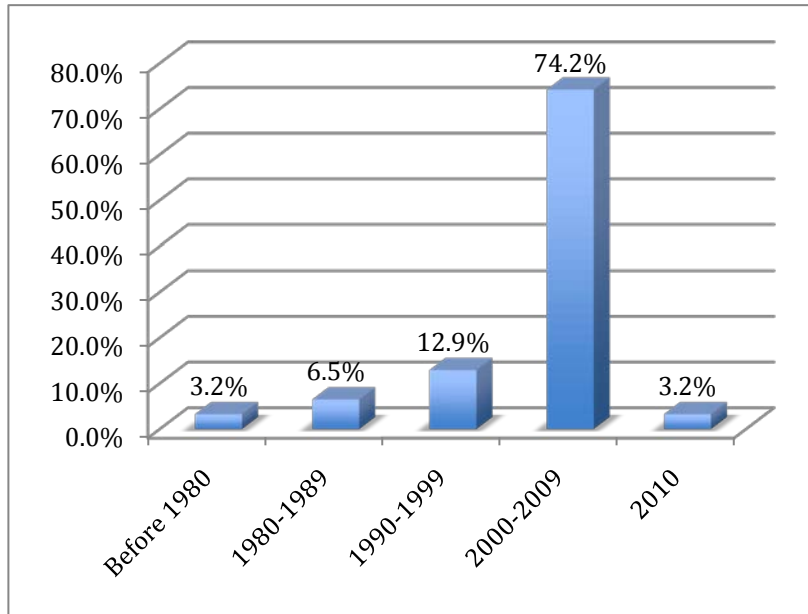


Respondents by Age

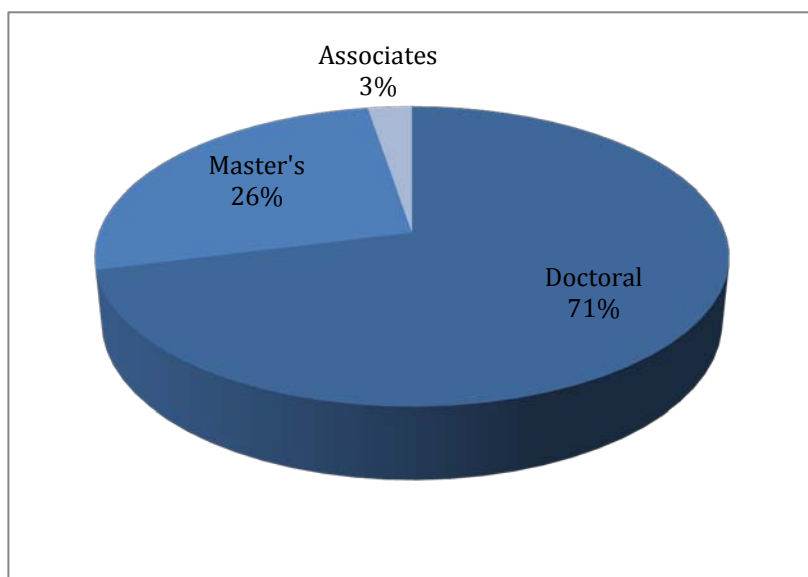


The average (mean) age of respondents was 42, the median 41. 55% of respondents fell between the ages of 40 and 59, with 19% over the age of 50. While this indicates a slight skew towards older respondents, the vast majority (77%) have earned their last degree since 2000 (see next chart).

In what year did you earn your highest degree?

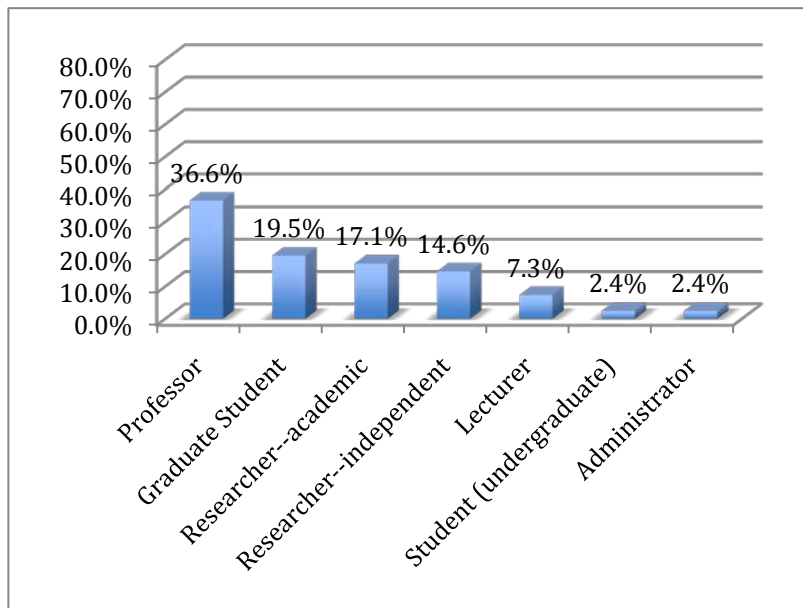


Which of the following best describes your highest degree earned?

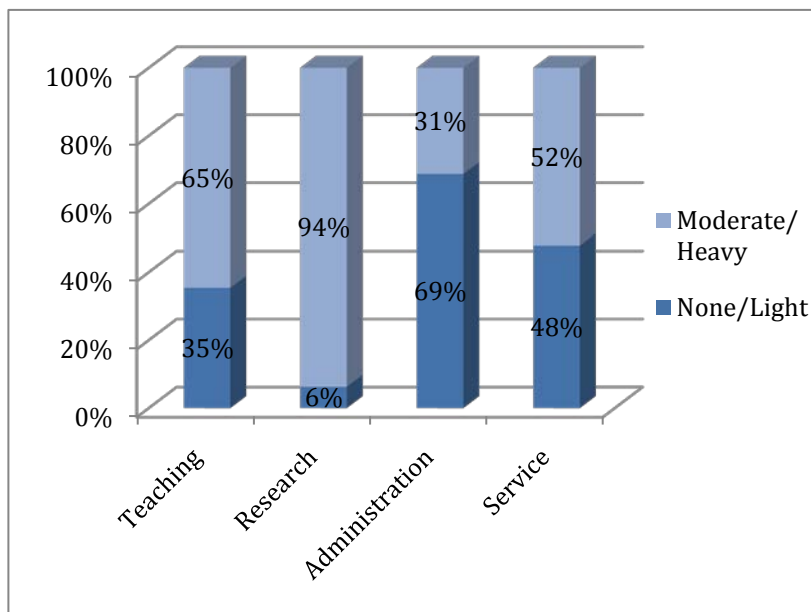


71% of participants hold a doctoral degree, with an overwhelming 97% holding an advanced professional degree of some sort. This is a much higher percentage than was found in the TIDSR survey where 50% held a doctoral degree and 85% with an advanced degree.

What is your current job title?

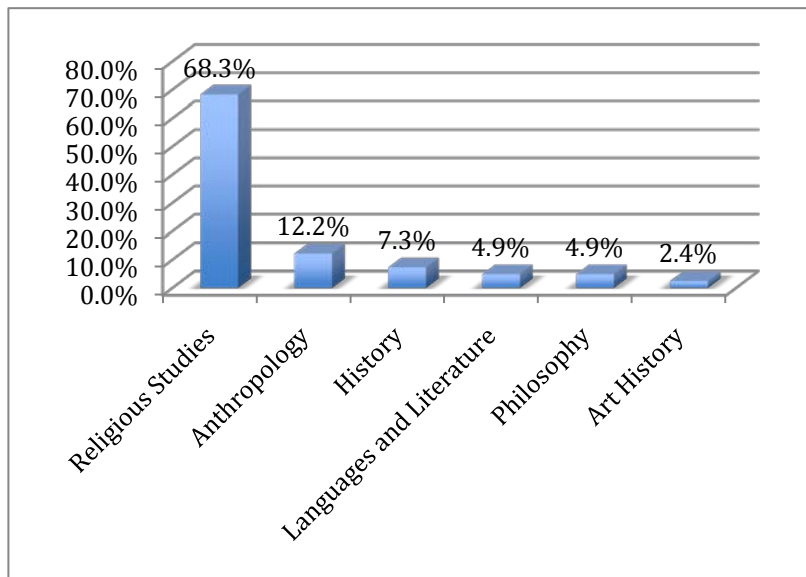


How would you describe your level of involvement in the following activities?



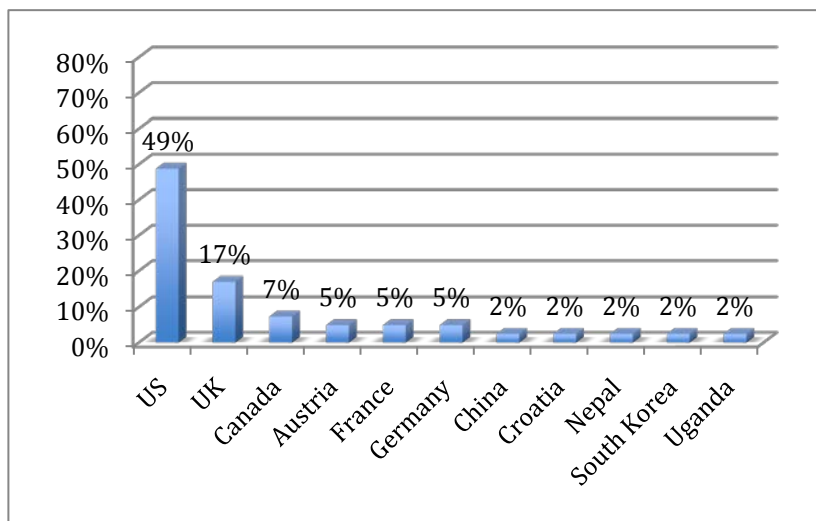
More than 75% of the respondents were employed in academia, (22% were students), with research being by far the most common activity, followed by teaching. The emphasis on research echoes the results of the TIDSR survey (90% heavily engaged in research, 51% in teaching.)

What is your field of specialization?



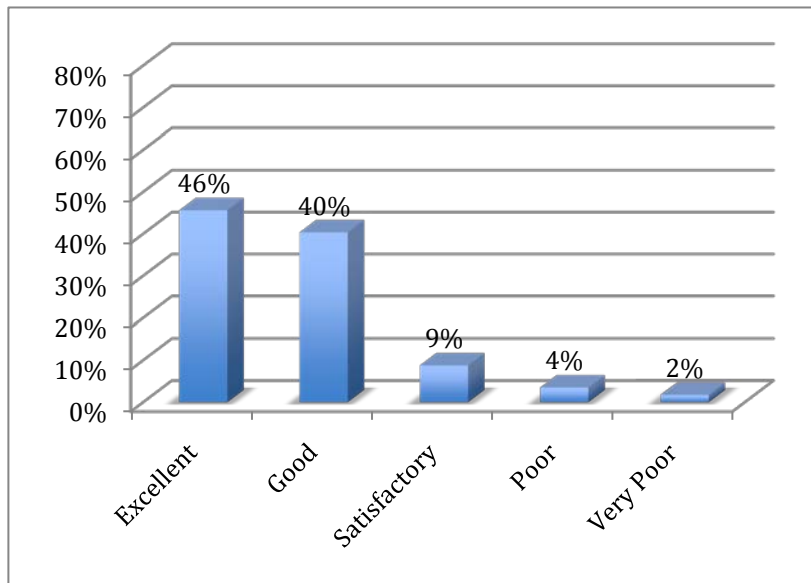
The most common field of respondents was religious studies, with many respondents indicating their field specifically as “Buddhist Studies.”

What country do you live in?



Respondents were gathered from 11 different countries, with the majority, 66%, from the US and the UK.

How would you rate your expertise with technologies like the Internet and e - mail?

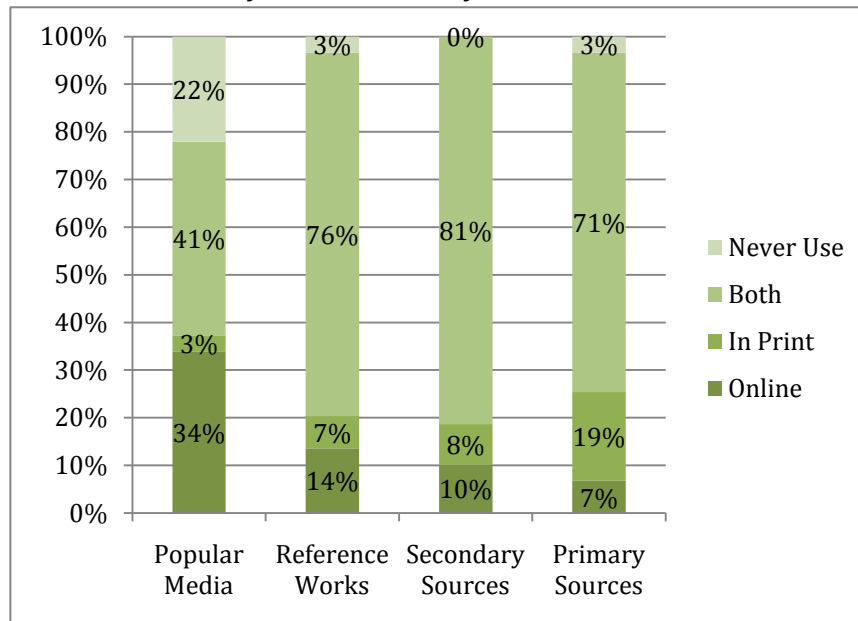


Just under half of respondents feel that they have “excellent” ICT skills, with 15% indicating only satisfactory or below. This set of respondents was slightly more pessimistic about their ICT skills than the rest of the humanities as found in the TIDSR survey, where 93% of respondents considered their ICT skills to be “excellent” or “good.”

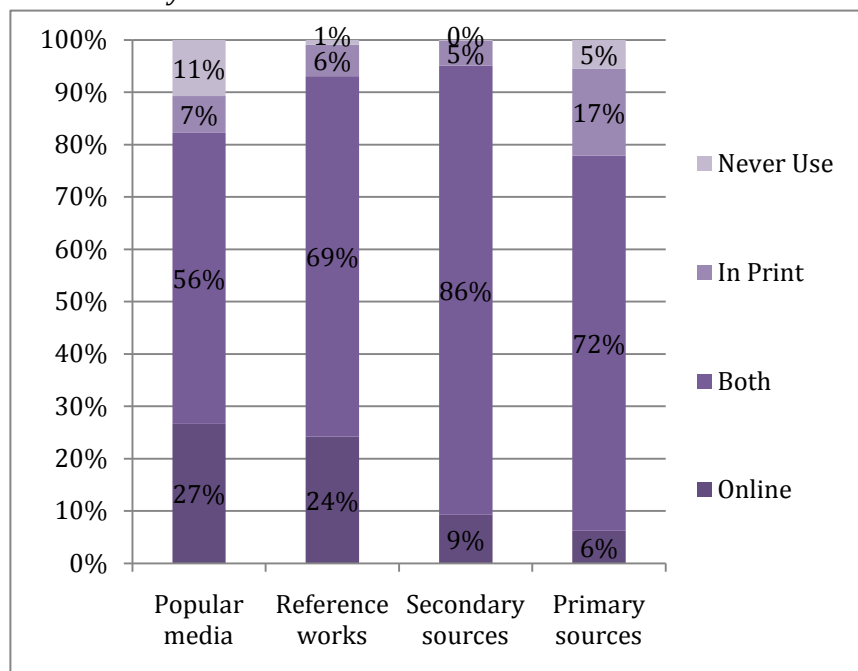
Part II: Online Work and Research Habits

When you use the following sources in your work do you access them online, in print, both, or do you never use them?

Tibetan and Himalayan Studies Survey



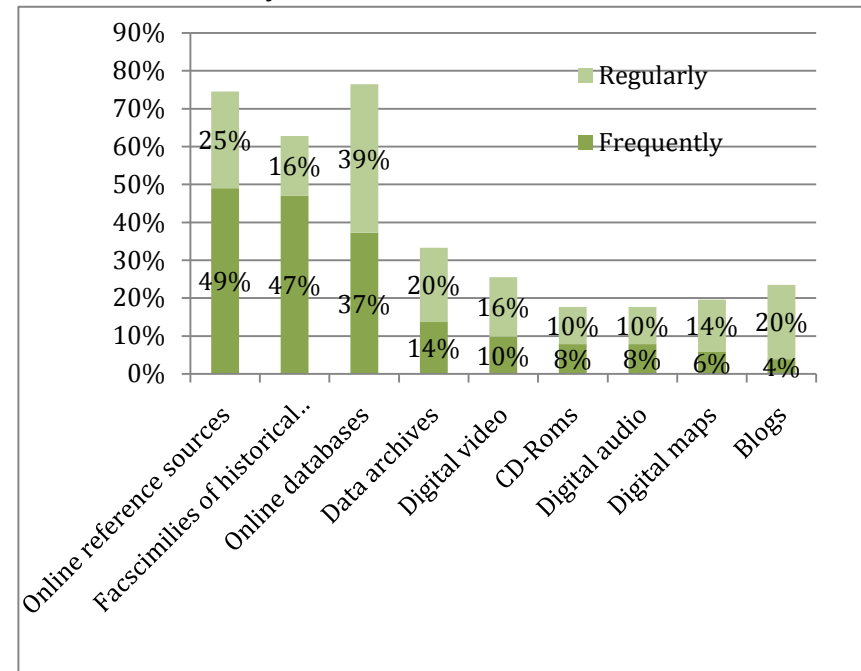
TIDSR Survey



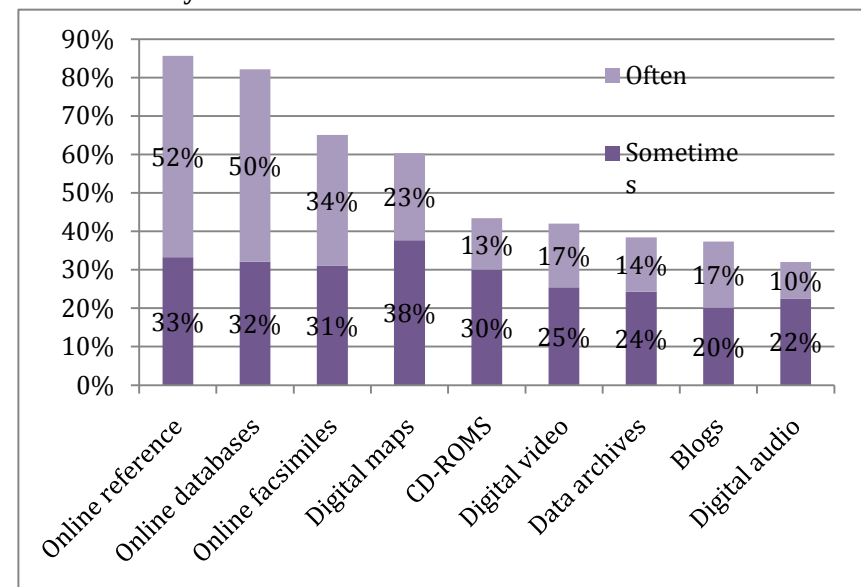
The majority of respondents access primary and secondary resources both online and in print. These numbers were strikingly similar to those found in the TIDSR survey.

How often do you use the following in your work?

Tibetan and Himalayan Studies



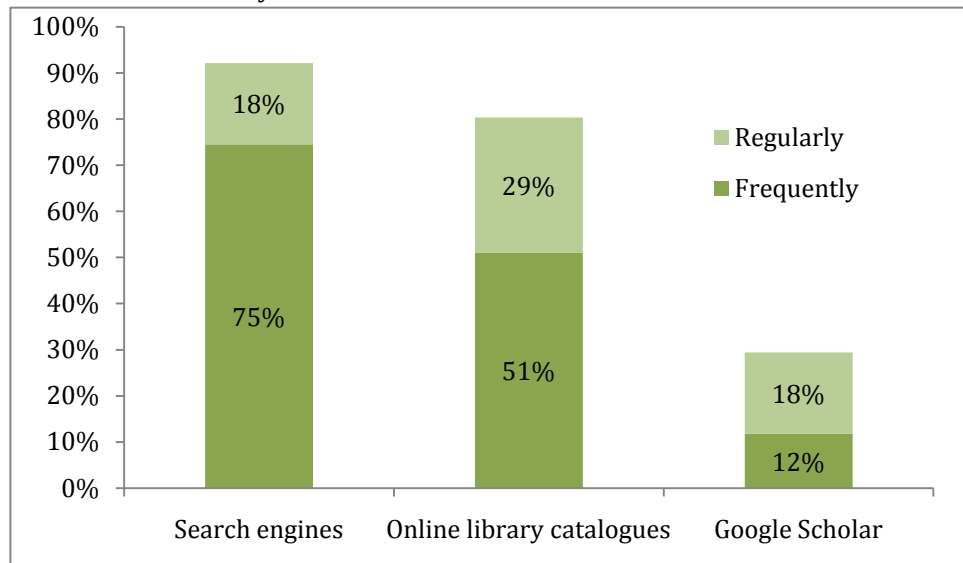
TIDSR Survey



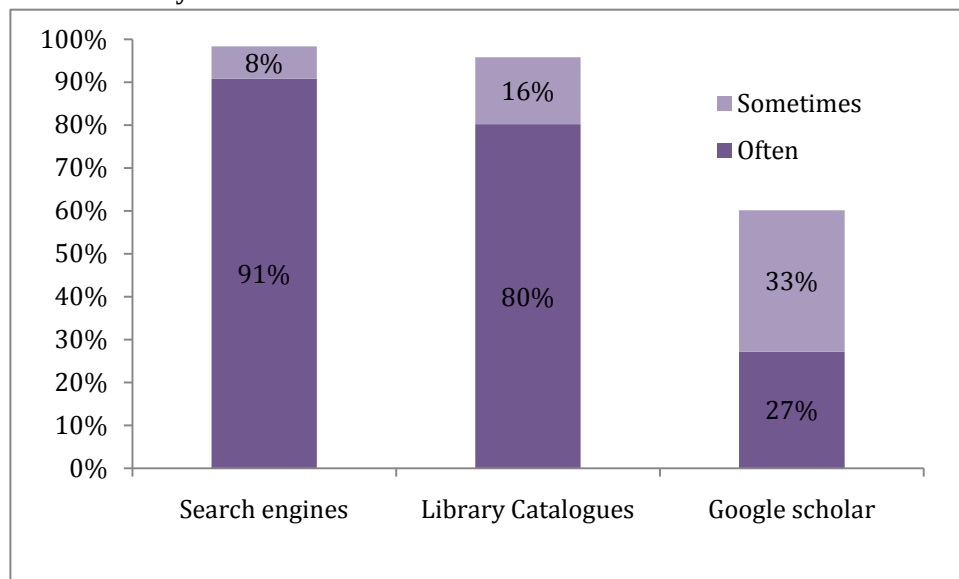
Overall use of digital content (audio, video, maps, blogs) was much lower in the group of Tibetan and Himalayan scholars, but frequent use of online reference resources and facsimiles was higher (47% versus 31%).

How often do you use the following in your work?

Tibetan and Himalayan Scholars



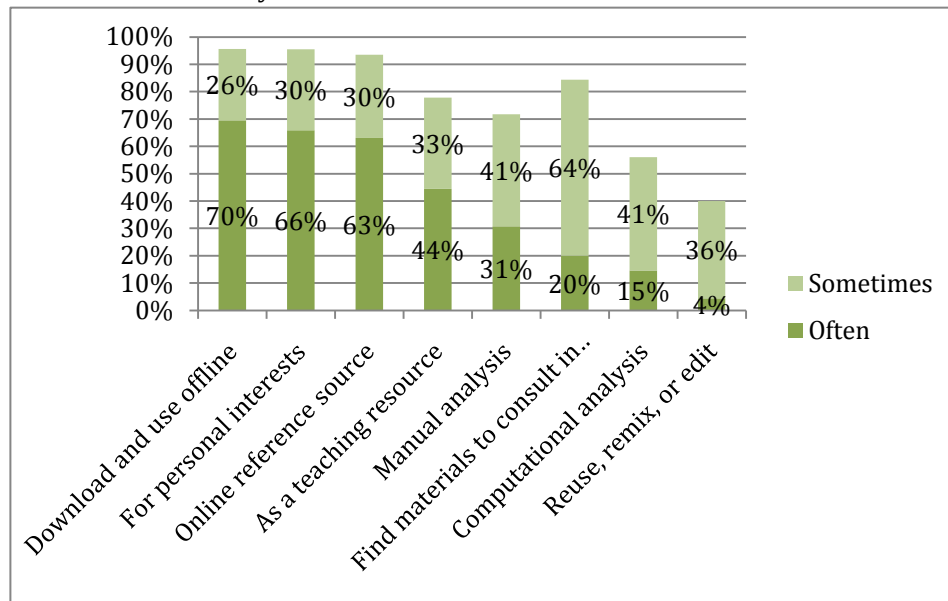
TIDS SR Survey



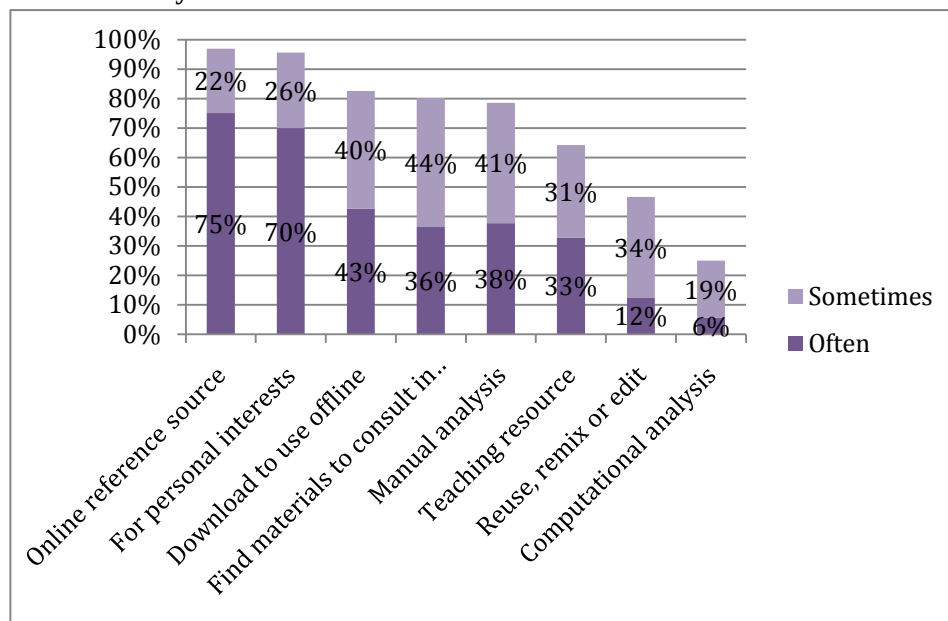
Overall use of general search engines and library catalogues was about the same, with use of Google Scholar higher amongst the general humanists than the Tibetanists.

Please describe how you generally use digitized resources.

Tibetan and Himalayan Studies



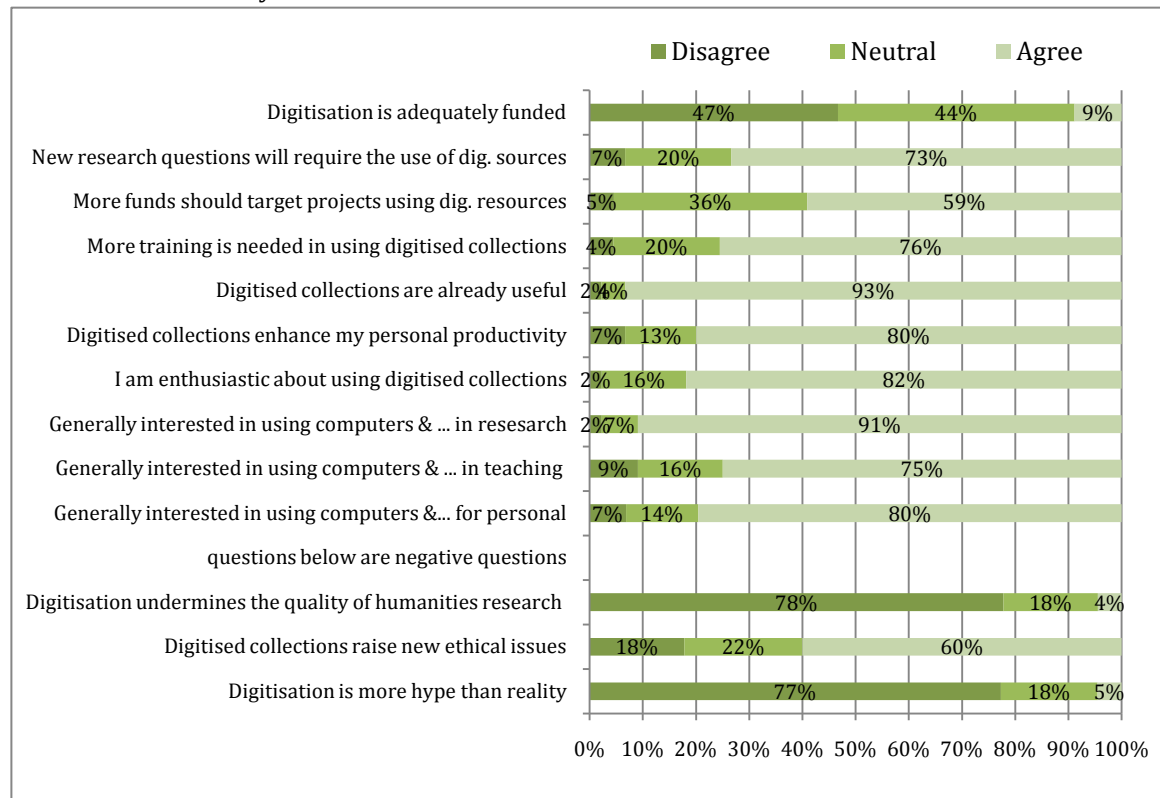
TIDSr Survey



70% of respondents in Tibetan and Himalayan studies often download digitized materials to use offline. This compares with only 43% in the humanities more generally. Rates of computational analysis were also much higher in THS, with 56% engaging sometimes or often in this.

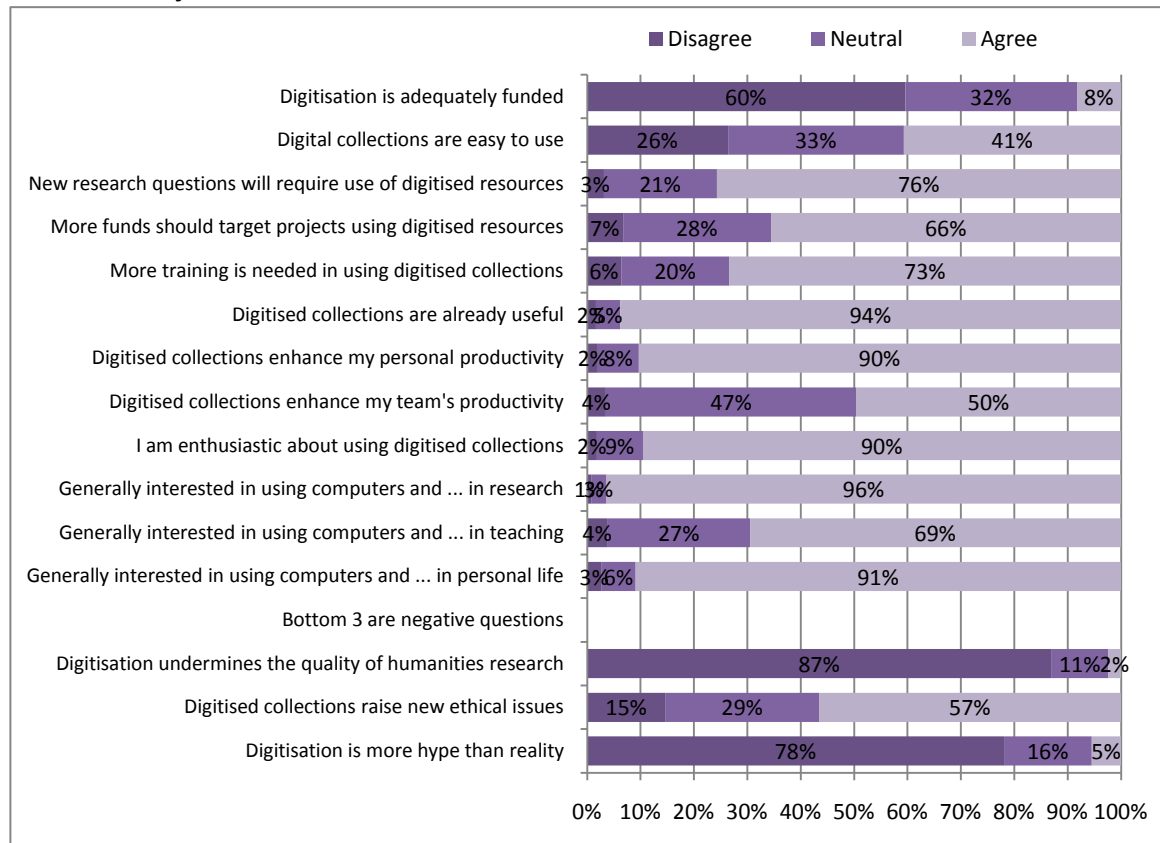
Please indicate whether you agree or disagree with the following statements.

Tibetan and Himalayan Studies



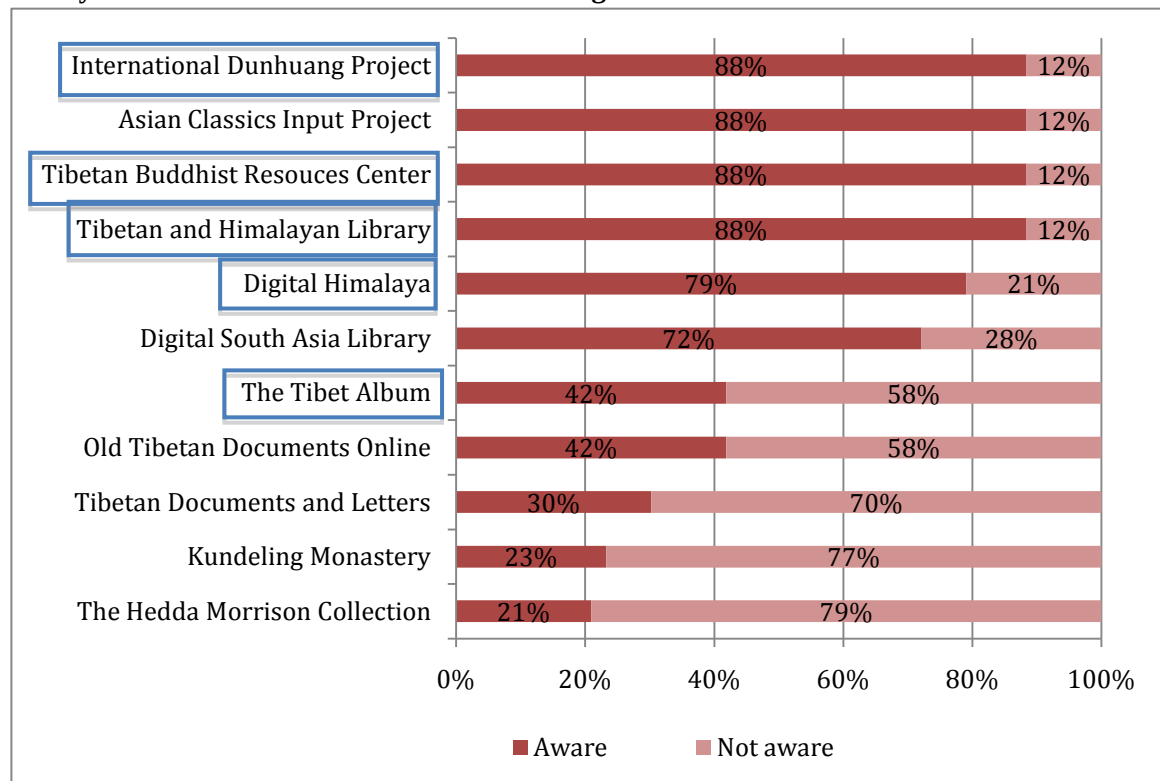
Overall attitudes toward digitization were very positive, with respondents showing enthusiasm for using digital collections in their research (91%), teaching (75%) and personal use (80%). 93% agreed that digital collections were already useful in their work. These numbers were quite similar to the findings in the TIDSR survey (see next page).

TIDSR Survey



Part III: Awareness and Use of the Five Embedded Case Projects

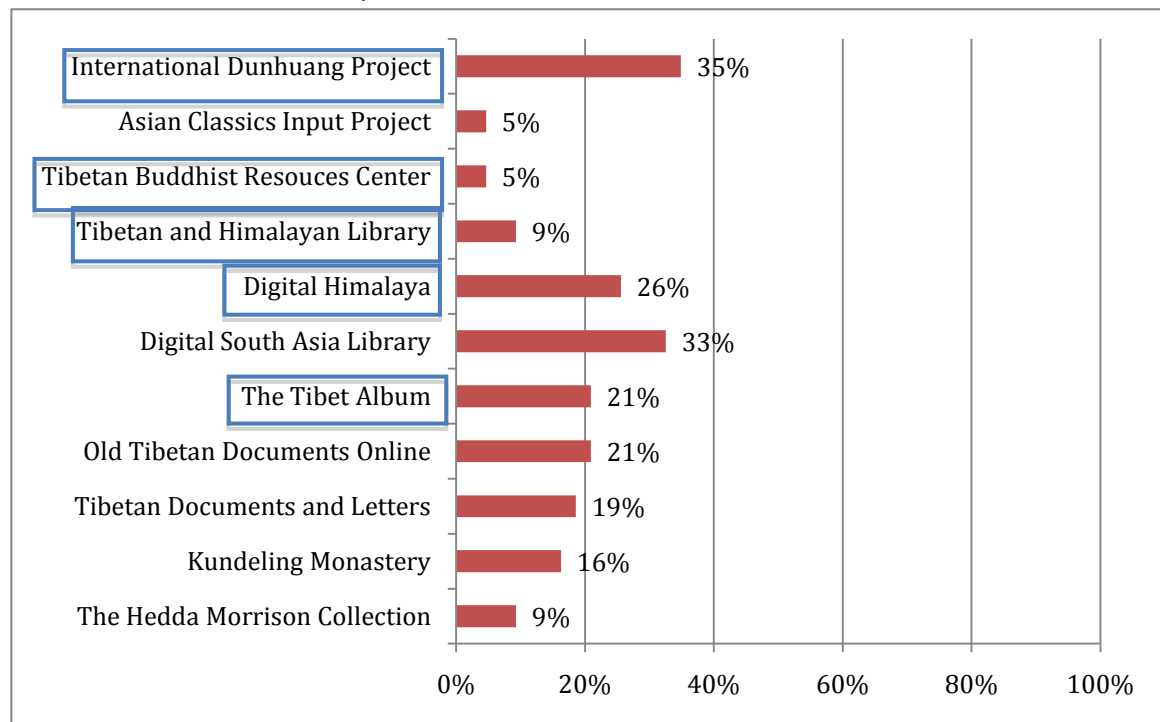
Have you seen and/or used each of the following resources?



The average overall awareness of all digitization projects was 60%, with the average for the embedded case sites (in squares) higher at 77%. These results should not necessarily be equated with or understood as a measure of overall impact, but instead a result of successful outreach or marketing strategies. Awareness should also not be equated with use, as an average of 18% of respondents (19% for case projects) were aware of these resources but did not use them (see below).

Reasons for non - use of resources

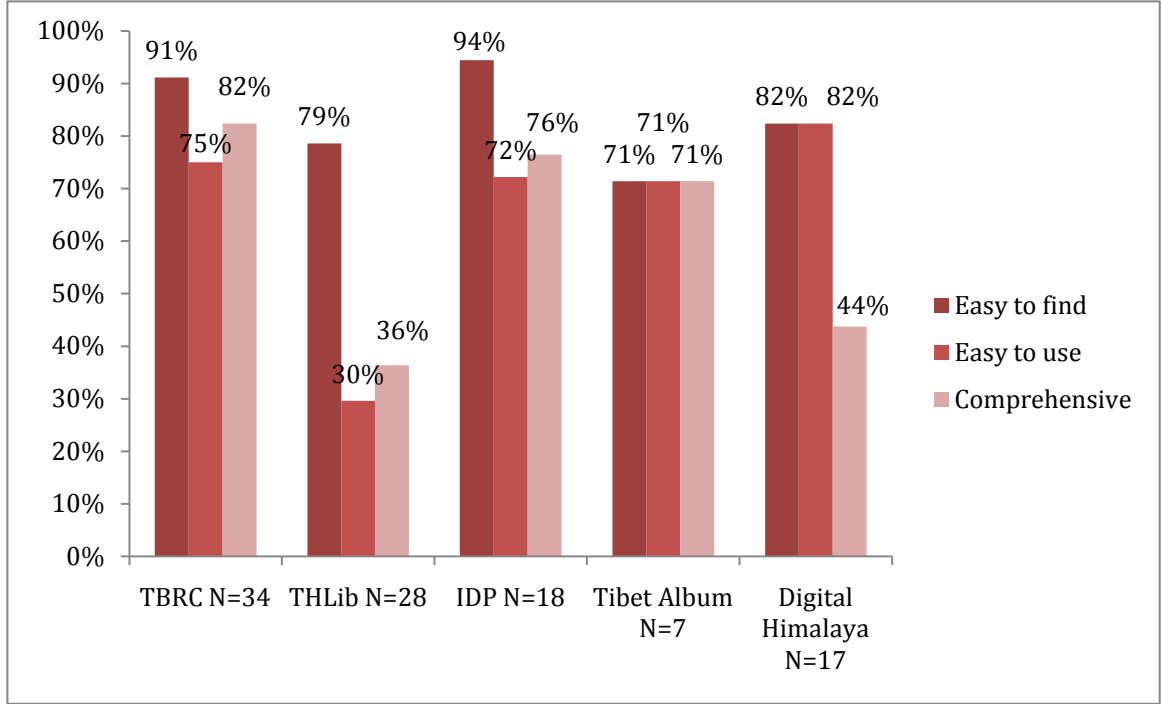
“I am aware of this resource, but I do not use it”



The most common reasons for non-use was a mismatch in the content. There were no responses that indicated that people had difficulties using the web sites, only that the content in these sites was not relevant to their current work.

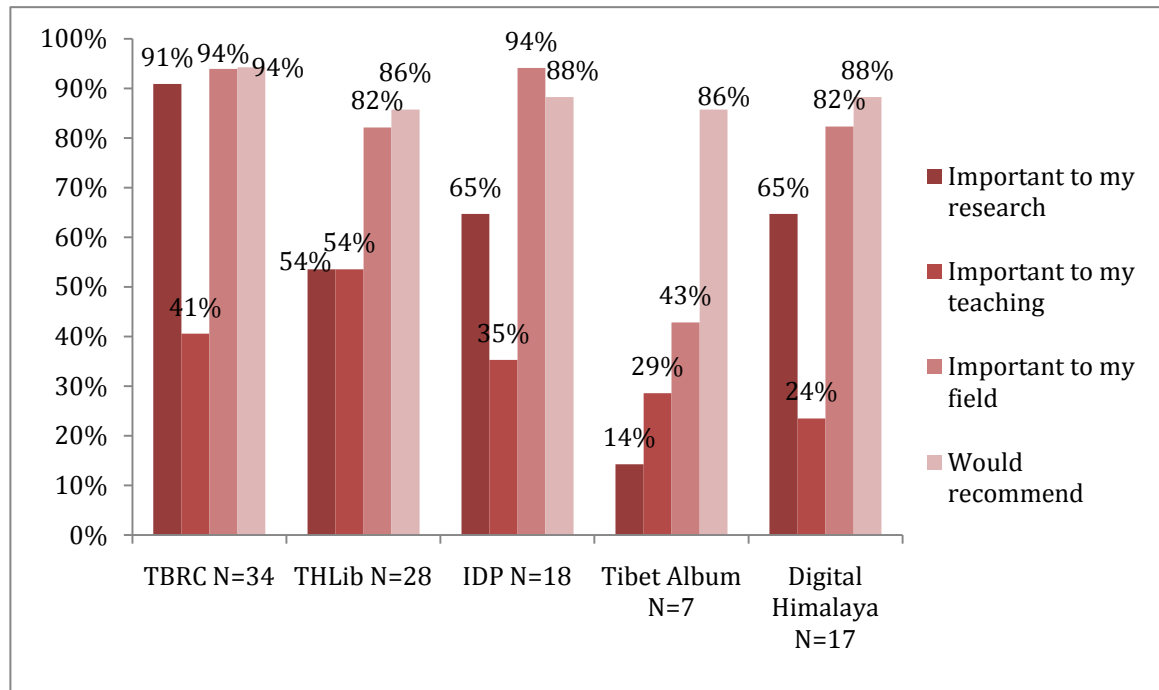
Please use the scale below to indicate our level of agreement with the following statements.

This resource is:



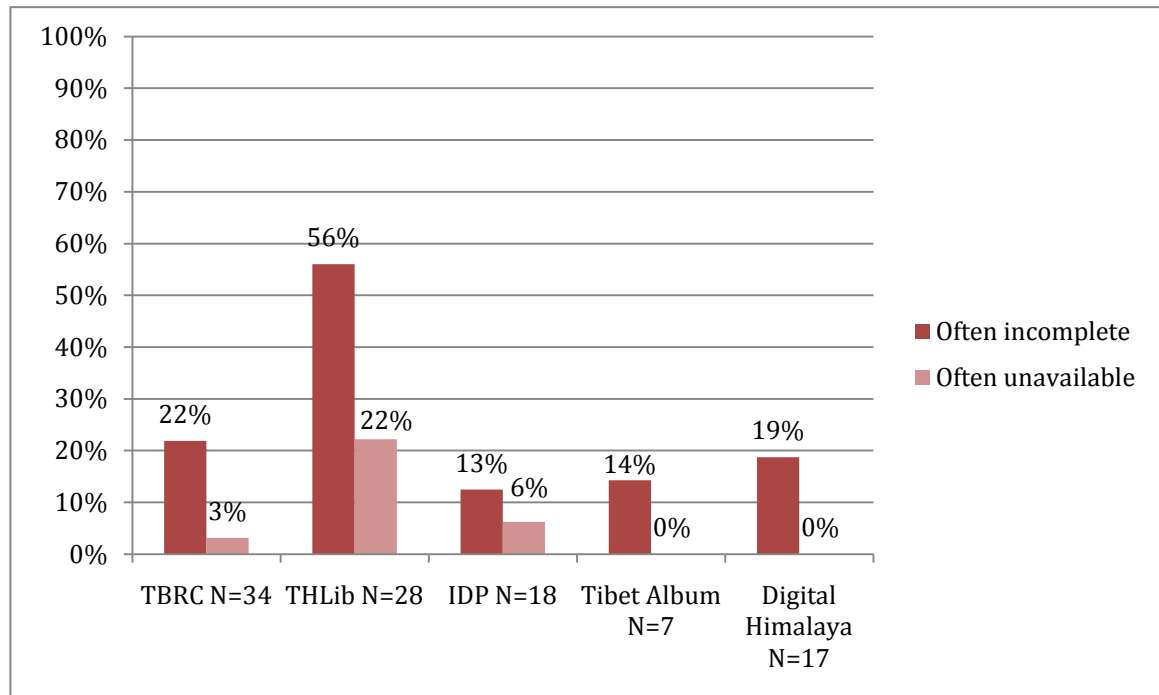
The vast majority of these users found these resources easy to find. The response for “easy to use” was positive in only out of the five embedded cases. The results of “this resource is comprehensive” were mixed, but several of these projects are in continual development and do not make claims of comprehensiveness.

This resource is:



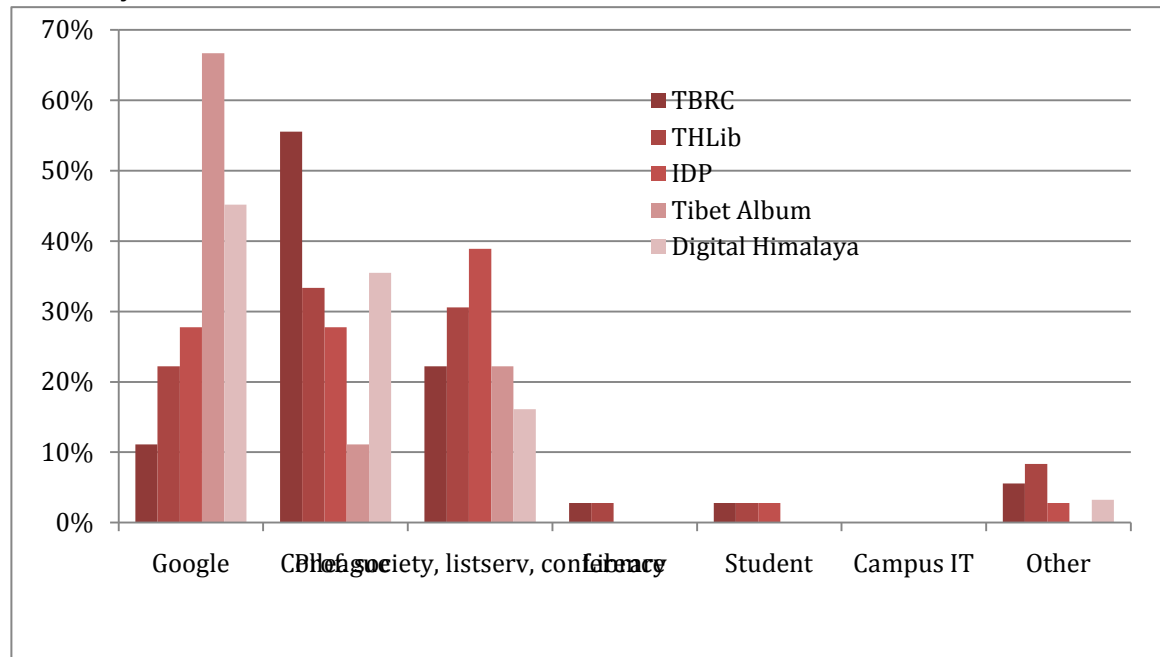
The vast majority of respondents would recommend all of these resources to a colleague or student, and for most of the projects importance to the respondents' field was also ranked highly.

This resource is



Responses to the corresponding negative questions were low, supporting an overall satisfaction with these resources. Responses for the *Tibetan and Himalayan Library* indicate a general frustration by users that was also revealed in the free text answers at the end of this section.

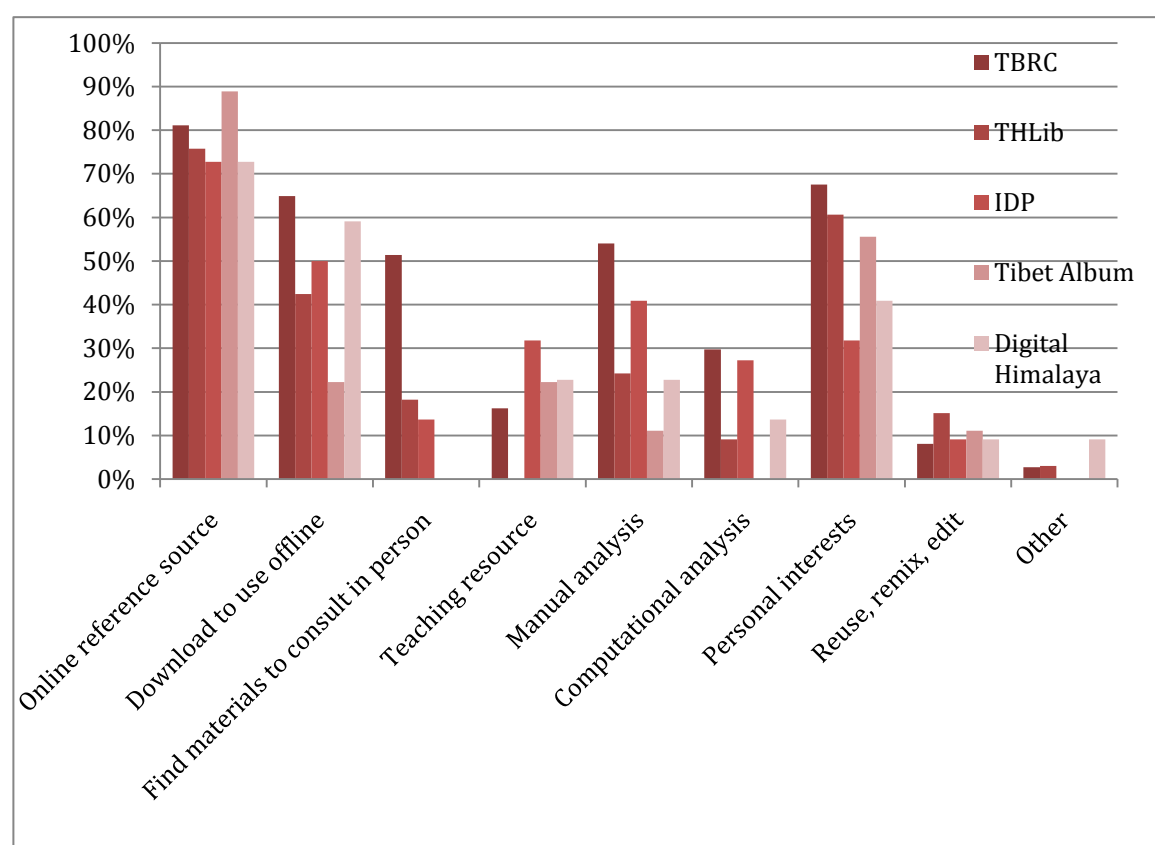
How did you find out about this resource?



	TBRC	THL	IDP	Tibet Album	Digital Himalaya
Google	11%	22%	28%	67%	45%
Colleague	56%	33%	28%	11%	16%
Prof. society, listserv, conference	22%	31%	39%	22%	16%
Library	3%	3%	0%	0%	0%
Student	3%	3%	3%	0%	0%
Campus IT	0%	0%	0%	0%	0%
Other	6%	8%	3%	0%	3%

While Google dominates as the means of discovery for the *Tibet Album*, it was also the resource deemed by respondents as the least useful to the respondents research. For the other sites, discovery through a colleague or professional society or event was fairly high, indicating a strong network between the researchers for sharing resources.

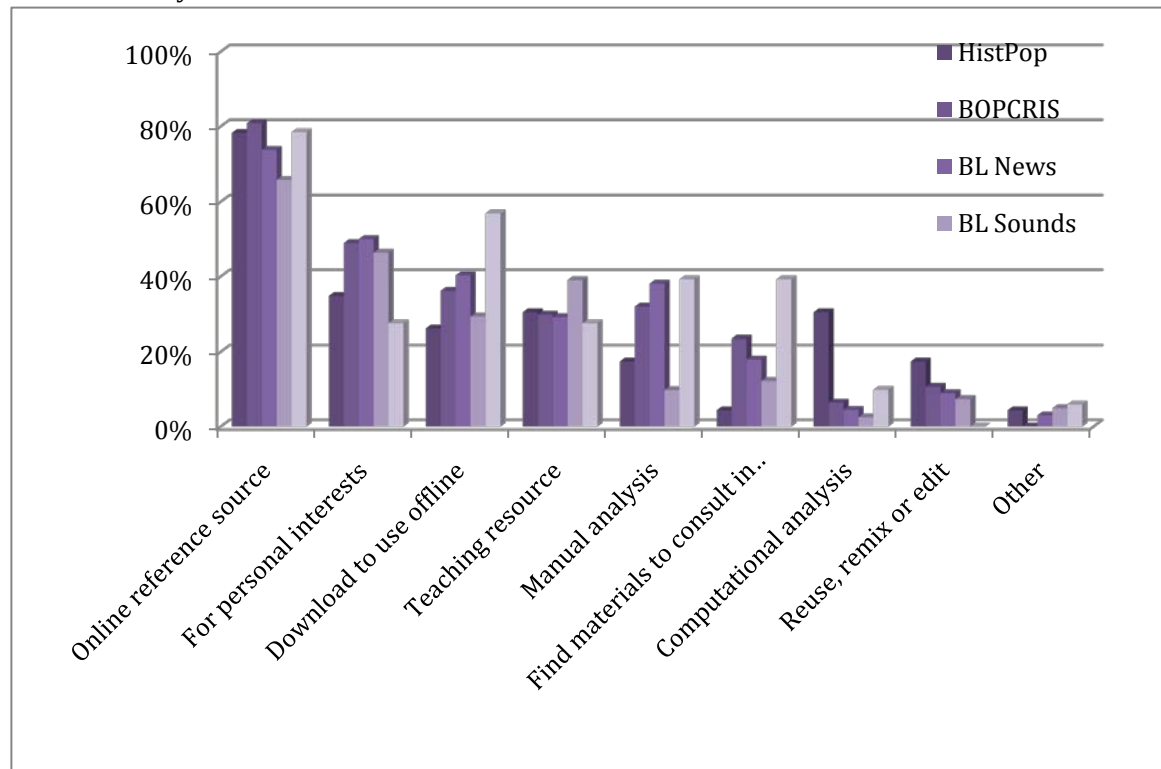
Please describe how you use these resources?



	TBRC	THL	IDP	Tibet Album	Digital Himalaya
Online reference	81%	76%	73%	89%	73%
Download & use offline	65%	42%	50%	22%	59%
Consult in person	51%	18%	14%	0%	0%
Teaching resource	16%	0%	32%	22%	23%
Manual analysis	54%	24%	41%	11%	23%
Computational analysis	30%	9%	27%	0%	14%
Personal interest	68%	61%	32%	56%	41%
Reuse, remix, edit	8%	15%	9%	11%	9%

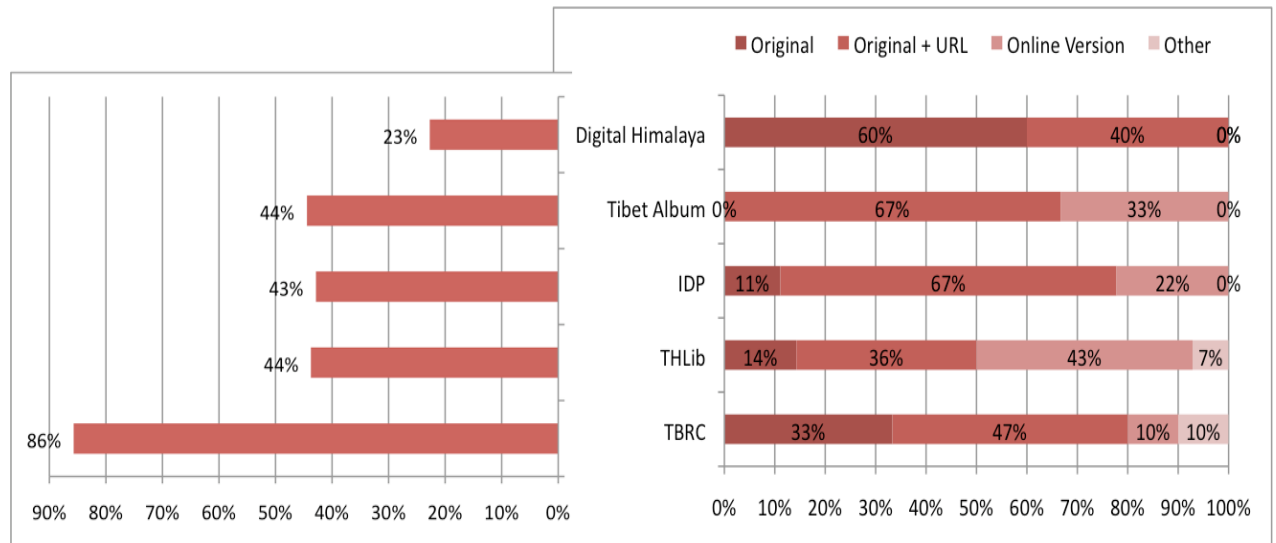
Most respondents use these collections online, although downloading for use offline is far more common than was found in the TIDSR survey (see below). In both cases, computational analysis and remixing and editing were relatively infrequent. 51% of respondents use the *Tibetan Buddhist Resource Center* to locate materials to use offline, which indicates its close correspondence to the print and microfilm collection known as “PL480” discussed in Chapter 4.

TIDSR Survey



Have you ever created a piece of work for which you have used these electronic resources?

If yes, how did you cite the electronic version or the originals?



Most respondents cited the original documents within these collections, although with the exception of *Digital Himalaya*, they usually included the URL. The *Tibetan and Himalayan Library* had the highest percentage of respondents who cited the online version only (43%), which may correspond the prominence of a “How to Cite” feature on their home page (see below).

The screenshot shows the THL website home page. The navigation bar includes links to Home, Projects, Collections, Places, Encyclopedias, Reference, Community, Tools, and THL Index. The main content area features a featured project (Sera Monastery), a contributor spotlight (José Cabezon), and a sidebar with a list of links. A blue arrow points to the 'How to Cite' link in the sidebar.

Featured THL Project

Sera Monastery

Sera Monastery is a famous Geluk monastery in the north of Lhasa with extensive hermitages in the mountains above; a project led by José Cabezon.... [Explore!](#)

THL Contributor Spotlight

José Cabezon

José Cabezon, Professor of Tibetan Buddhism at the University of California, Santa Barbara, is director of the impressive Sera Monastery Project and co-editor of the ... [Read More](#)

Staff Spotlight

Introduction

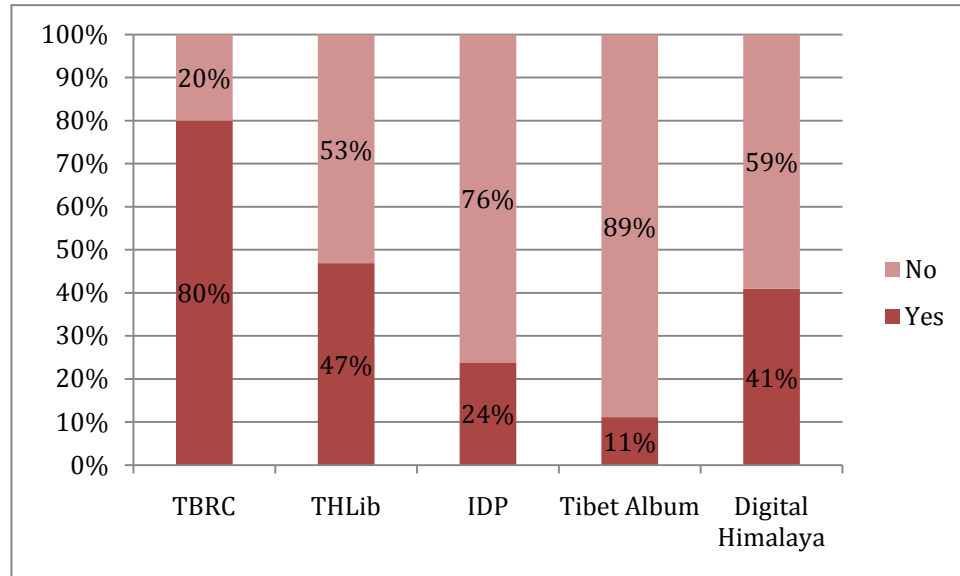
- » THL Overview
- » First-Time Visitors
- » Tibetan Studies News
- » Guide to Resources
- » THL History
- » About Us
- » How to Participate
- » Help
- » THL Sponsors
- » THL Partners
- » **How to Cite**
- » THL URLs
- » Contact Us

☐ THL Status Reports

☐ THL Mailing List

☐ THL Donations

Have you ever used the original version of the documents available on this site?



The high percentage of users who cite the original versions of the documents on the *Tibetan Buddhist Resource Center* also corresponds with the fact that 80% have indeed used the originals. The average use of the original documents in these collections is 41%, which was similar to the findings in the TIDSR Survey (45%). With the exception of TBRC, though, where the “originals” are widely distributed around the world through the PL480 collection, the original materials in the other collections are much less commonly consulted (an average of 31%), indicating that they are rare or difficult to access.

Full Text Responses

Have any of these digital resources changed the way you do your research? For example, have they enabled you to ask new research questions or collect different kinds of data?

While nine respondents answered that these resources had not changed the way they do their research or enabled to do anything particularly new, the majority of the responses were positive. Many respondents had clearly considered the question deeply and were able to articulate a clear difference between having access to more materials, or having faster access to materials, from the kind of research these resources were enabling. The most transformative uses seem to come through full text searchability and indexing.

Analysis of Word Frequencies in Full Text Answers.



Analysis of the word frequencies in the positive full text responses to the question of how this changes respondents' research indicate that access to these materials is one of the key factors, while the ability to search is also important. The project mentioned most frequently in response to this question is the *Tibetan Buddhist Resource Center*.

Complete Answers

NO

- Nope
- Not particularly.
- No-that is, they make printed sources available online and therefore easier to access; I find nothing intrinsic to their digitization that generates new questions. The questions come from reading the texts. I haven't used the video sources.
- nope
- no--I am not a specialist on East Asia and therefore resort to this web site for personal interest.
- Mainly as an online source of reference for Tengyur Kangyur and other gsung 'bum material.
- no not really
- No
- no

YES

- TBRC and IDP have hugely empowered everyone who uses them.
- I have been able to ask new research questions, gain access to more material within my research, and become aware of much more and varied types of data that would have easily slipped through the cracks.
- Most significant are (i) the ability to search large text collections, like the Nyingma Gyubum at THL, and the Tibetan canonical texts at ACIP. This significantly lessens the time needed to search for specific passages, or compare texts.
- They have enabled access to many documents which are either unavailable or available only through extreme difficulties, particularly in a places with comparatively poorer library services, like my native Croatia. I also believe that they have enabled me to
- Yes to both questions. They've also introduced new problems.
- yes
- I use them to search out instances of words that I want to examine philologically, and can now do that much more quickly.
- yes
- For one project, I've been working with digitized Dunhuang documents. The kind of comparative analysis of large quantities of Dunhuang documents I am undertaking would not have been possible without the accessibility of these digitized images.
- I use Chinese Sanskrit and Pali materials more than Tibetan materials. But digitization has completely and dramatically changed the ways I interact with the materials. I am enthusiastic about digitization.
- Yes. TBRC allows me to access resources that I would not otherwise have the ability to access or which would take me many hours to retrieve. Its not so much that new research questions are arising, but rather that the research questions are enriched & con...
- These resources have certainly contracted the time it takes to do research. I can download and compare information from articles and texts more rapidly, so that I arrive at pertinent questions quicker. I'm not sure if they've enabled me to ask new kinds
- They make it easier to survey the extant literature on a given topic.
- The TBRC has made it much easier to compare sources across a topic, particularly when the texts are short and scattered across collections.
- These resources make it possible to store on your computer the entire Tibetan canon and search most of the scholarly literature. Thus for my work the value of these

resources is the access they provide to content, not necessarily potential for new research

- They have allowed me to have access and therefore analyse and compare more data.
- I have not used any of these resources extensively but other digital resources that I have used have indeed facilitated new questions etc
- Yes, and learn more by jumping from one point I knew to one point I ignored.
- Certainly, esp. the ability to collate large amounts of data and doing quantitative analysis and mapping.
- Yes, being able to see thousands of titles, and author and commentator lists is invaluable. Also, when the THL work is finished on the Kangyur and Tengyur, being able to search through all the colophons will take research on these texts as well as research
- I teach at a university in a rural area, the availability of online primary source material is essential for me to continue my textual research.
- I was able to access otherwise unavailable sources through the IDP.
- TBRC and IDP have many massive materials available for my research, and TBRC has provided a quite reliable reference-work for dates of persons.

Do you use any other electronic resources in your work that you think are particularly useful?

- PL 480 microfiche catalogue.
- Library manuscript scans which are good can be extremely helpful. However, many libraries have poor quality and expensive scans, which are useless and frustrating.
- JSTOR and AnthroSource archives most of the journals I use for my research and where I am likely to find the material I need. I also find the Bibliography of Asian Studies online to be a valuable resource to find articles on the topics of my research.
- Asian Classics Input Project (ACIP) -- though far from complete, this is still the largest collection of input text versions of the Tibetan canon, and other Tibetan Buddhist material.
- Anthrosource (journal database of American Anthropological Association)
- google images often useful for quick access to useful images
- <http://www.dharmadownload.net/>
- GRETEL, many library research engines, particularly those providing access to bibliography of scholars (e.g. SOAS, Japanese CiNii)
- Google Books
- http://www.sub.uni-goettingen.de/ebene_1/fiindolo/gretel.htm<http://www.tipitaka.org/romn/http://dsal.uchicago.edu/dictionaries/pali/http://www3.aa.tufts.ac.jp/~tjun/sktdic/http://webapps.uni-koeln.de/tamil/http://www.bodhgayanews.net/pali.htm><https://www2.h>
- blogs, dictionaries, on-line journals
- MWDict, much faster than paging through for a wordHuet's sanskrit.inria.fr site is useful for illustrating stuff for studentsI use digitized texts from the UWest sanskrit library and other resources found on indology.infoACIP is helpful when I don't have time
- I use CBETA¹¹⁵ and CSCD¹¹⁶ every day. I also use www.sutracentral.net almost every day. <http://buddhistinformatics.ddbc.edu.tw/BZA/> is also useful as are the Greta texts and the Buddhist Digital Library and Museum, and the Digital Sanskrit Buddhist Canon site.
- Rangjung Yeshe Wiki on-line dictionary provides a useful first take on some Tibetan words. Berzin Archives contains some useful secondary material on certain topics.
- Google Books and Rangjung Yeshe Wiki (http://rywiki.tsadra.org/index.php/Main_Page), the Tibetan Calendar Converter app (http://www.phlonx.com/resources/tibetan_calendar/)
- vIpassana research institute online tipitaka. Online Pali dictionary at DSAL.
- Digital Dictionary of Buddhism. SAT.
- himalayanart.org
- ACIP because I can search it with romanized transliteration. Google for anything - reference works, dates, names,etc. Several online dictionaries such as Yellow Bridge, Apte (on dsal), etc.
- Indica and BuddhicaCBETA
- Foguang shan Buddhist Dictionary
- CBETA ~ but this covers Chinese Buddhist materialSAT ~ ditto
- <http://www.lotsawahouse.org/> - translations and other toolshttp://www.rigpawiki.org/index.php?title=Main_Page - interesting information collected herehttp://rywiki.tsadra.org/index.php/Main_Page - lots of great information

¹¹⁵ CBETA refers to the Chinese Buddhist Electronic Text Association: <http://www.cbeta.org>

¹¹⁶ CSCD is a full text version of the Pali Tripitika. It stands for Chattha Saṅgāyana CD and is available for download and use offline from:<http://www.tipitaka.org/>

- CBETA (<http://www.cbeta.org/>)Resources collected at:
http://www.ddbc.edu.tw/en/digital_archives/projects.htmlTripitaka Koreana
Knowledgebase (http://kb.sutra.re.kr/ritk_eng/index.do)

Are there any other resources you would like to see online?

Aside from a general enthusiasm for seeing more searchable texts online, the answers to this question (below) indicate one of the key gaps in this field. There is as of yet, no complete, comprehensive, fully-searchable version of the Tibetan Buddhist canon (the Kangyur and Tangyur) available online. TBRC makes page images available through their subscription-based site and while the Asian Classics Input Project advertises such a resource, many users find their version riddled with errors.

- lots of searchable e-text
- Studies in Nepali History and Society
- oxford PhDs, USA PhDs (Proquest: Oxford does not subscribe to the downloadable PhD facility).
- manuscript collections need to be made available and ancient sanskrit, tibetan, and other script charts (with examples from datable texts) would be a huge benefit to the field
- South Asian newspapers! At least the main ones, with complete archives.
- Complete text versions of the Bka' 'gyur, Btsan 'gyur and Rnying ma rgyud 'bum, and other Tibetan Buddhist material.
- More accurate translation websites for converting Asian languages like Chinese, Korean, Japanese to English.
- No, just more accessible.
- different editions of Tibetan Buddhist canon
- A fully searchable, complete, and accurate edition of the Tibetan Buddhist canonical collections.
- More full text books, and I wish Gene Smith would make the whole of the Kanjur and Tenjur immediately accessible, even if not for download. I don't know anyone who can drop \$8k on buying the electronic versions.
- yes, a complete digitalised version of the Kanjur and Tenjur (comparable to ACIP, but more thoroughly done and complete)
- More and more texts.
- I would really like to see the whole Derge canon and the whole collection of sanskrit Buddhist texts digitized on a CD ROM with a spiffy search engine just like that of CBETA. If the Chinese can do it, there is no reason these other canons can't be done.
- A database of Tibetan works in translation (English, Chinese, French, etc.).
- A searchable and comprehensive database of the multiple extent editions of the Kangyur and Tengyur collections would be excellent, but I believe that's still in process via THL.
- I would LOVE to have a searchable Bka' 'gyur/Bstan 'gyur. ACIP has made some gestures in this direction, but is difficult to access and often unresponsive to attempts at communication.
- more digitally inputted texts to search for terms
- Other important dictionaries (Edgerton's Hybrid Sanskrit for ex), more searchable primary texts.
- Complete e-text version of Tibetan Kanjur Mongolian Kanjur
- Better, searchable maps.

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