

The Relationship of Buddhist Studies and Area Studies: New Perspectives from Humanities Computing

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Abstract

A quiet revolution is brewing in the Academy in the cauldron of new digital library technologies and the field of humanities computing. The fundamental relationship between knowledge and community that has governed colleges and universities over the past five decades is being challenged in unprecedented ways. In humanities research, publication, and teaching, this involves major transformations in the areas of collaboration, interdisciplinary approaches, active student reading, internationalization, public outreach, and publication. Particularly interesting for the field of Buddhist Studies is the way in which such developments are enabling a much more radical convergence of religious studies with the broader field of area studies relevant for the study of a particular religion.

My paper will use the Tibetan and Himalayan Digital Library (www.thdl.org) as a test case to discuss these new developments. I will focus on four interlinked initiatives within THDL concerning Tibetan Buddhism. First, the Tibetan monasteries project involves the detailed survey of monasteries combined with rich immersive models of a small set of monasteries. Second, the audio-video initiative is documenting oral traditions concerning literature, history, places, and much else. Third, the Tibetan Buddhist Literature project involves the integration of deep cataloging with extensively marked up e-editions, including the famed Kangyur and Tengyur. Fourth, the rich historical Tibetan dictionary project is documenting terminology based upon the OED's approach. Through discussing these projects and their relationship to research and publication, I will raise broader issues of the changing nature of the academy with the rise of humanities computing and digital libraries. In particular, I will use the test case of Tibet to discuss the relationship of area studies and Buddhist studies, and outline the way in which new technologies are enabling us to readdress the nature and importance of that relationship.

Key words: 1. Humanities Computing 2. Tibetan Studies
3. Tibetan and Himalayan Digital Library (THDL)

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Introduction

One of the most complex relationships in the academic study of Buddhism is the relationship of Buddhist Studies to Area Studies, whether Indology, Sinology, Japanese Studies, Tibetan Studies, or an other regionally focused field of academic research. At the broader level, over the last few decades we have seen a gradual shift in modern scholarship from an early focus on Buddhism as the primary object of attention with a strong integrity despite the variations of the shapes it took within various cultural regions. Instead, increasingly scholars focus on local forms of Buddhism—such as Chinese, Indian, Tibetan, Mongolian, Korean, or Japanese—as primary, thereby engendering a much stronger focus on the given culture’s language, literary traditions, social forms, history, geography, political life, and so forth. In this process, area studies has taken a much greater prominence in Buddhist Studies, with scholars often seeing themselves as much of, say, a Sinologist, as a Buddhologist. This creates a tension between the need for linguistic and content mastery across the quite disparate Buddhist cultures of Asia—such as the classic, but generally unheeded, call to learn Sanskrit, Pali, Tibetan, Chinese, and Japanese—to understand Buddhism comparatively, and the equally intimidating need to learn the history, society, geography, politics, literature, and economics of a given cultural region to properly understand the forms Buddhism takes therein. The need to respond between these two imperatives in both competency and analysis is, essentially, impossible, and practically scholars, and scholarship, are forever shifting back and forth to find a compromise for a specific inquiry.

This relationship is closely related to central methodological questions of the relationship of text to social contexts, the larger importance of literary traditions within Buddhism as a whole, the utility and even necessity of various disciplinary perspectives beyond Religious Studies to the study of Buddhism, the relationship between ethnography and historical inquiry, and the ethical responsibility of scholars to contemporary Buddhist communities. In this regard, there has been during the same time period a gradual shift to incorporate more attention to the social contexts of texts, to place less emphasis on the literary traditions *per se*, to integrate other disciplinary bodies of knowledge and methodologies beyond religious-philosophical ones, to incorporate more ethnography, and to insist increasingly on reflection on ethical issues under the rubric of post-orientalism.

An especially interesting development amidst all these changes has been the rise of humanities computing over the past fifteen years. Humanities computing is the emergent discipline driven by the partnership of information systems technologists and humanities scholars dedicated to researching how technology can be

utilized to explore new types of scholarly activity and products. In essence, however, rather than being a true discipline, humanities computing has developed into a proto-laboratory in which an unusual series of partnerships—computer scientists, librarians, archivists, humanists, professionals, publishers, photographers, and filmmakers—have formed a network for rethinking the fundamental equations that have governed modern academics for the last century. These changes include intellectual approaches, social partnerships, publication, teaching, and community outreach.

A number of interesting initiatives focused on Buddhism have occurred within humanities computing from early on, perhaps in part because of the openness of less dominant fields to new approaches. While not limited to textuality, certainly the largest and best known of these have focused, not surprisingly, on cataloging and reproducing traditional Buddhist literature. In the present context, I will use the specific example of the Tibetan and Himalayan Digital Library (www.thdl.org, hereafter cited as THDL) to discuss how humanities computing affords new approaches to the challenges cited above for the field of Buddhist Studies. While beginning as a classic Buddhist Studies digital cataloging initiative focused on a central Tibetan scriptural canon, since 1999, THDL has rapidly expanded into other areas. It thus constitutes an excellent case study to reflect on these broader tensions, and possibilities, that characterize the study of Buddhism in other cultural regions and how technology is affording us the opportunity to rethink many of our scholarly practices and assumptions.

Beginnings: Buddhist Catalogs

The seeds of THDL began in the mid 1990s with an initiative to create unusually deep catalogs of *The Collected Tantras of the Ancients* (*Rnying ma rgyud 'bum*) using SGML markup language at the University of Virginia. *The Collected Tantras of the Ancients* is the result of an ongoing effort from at least the fourteenth century onwards to redact together the various tantras and associated commentaries that formed the unique legacy of the Nyingma tradition of Tibetan Buddhism, but which had largely been excluded from the mainstream Tibetan redactions of the Buddhist scriptural canon (the famous Kangyur [*bka' 'gyur*] and Tengyur [*bstan 'gyur*]). As such, many were the product of processes of concealment and revelation in a complex visionary movement, and the canon came to exist in a number of different redactions. Traditional print catalogs are limited primarily through length constraints, the fixed linearity of presentation, the lack of non-textual resources, and the inability to directly link to resources of other types. Our initial goal was

to surmount these traditional limits through offering a far more extensive level of analysis of what, in digital terms, is called metadata.

Digital catalogs allow for more extensive detail, non-linear and complex access through both multi-layered browsing and searching, relatively easy incorporation of non-textual items, and ready ability to directly link to other types of resources. For example, traditional print catalogs tend to give only a single title, whereas a given Buddhist scripture may have a broad array of titles—opening line, colophons, margin titles, titles at end of chapters, titles used in commentarial literature, and more. Thus we set out to comprehensively analyze all known titles so that users could easily locate a text through whatever title to which they might have access, as well as identify citations with more confidence. Traditional print catalogs also tend to focus on the author and translator of a given text, but there are many other agents involved with the specific form and history of a given text—Buddhas who are put forward as speakers, divine questioners, concealers, revealers, transmitters, and more. Our digital system thus attempted a taxonomy of all possible agents affiliated with the text’s form(s) and movements through time. Another issue concerning issues of extent is detailing the internal structure of the text, whether as simple as a table of contents detailing the chapters, or a more complex analysis of internal topical outlines governing the text’s structure. This formed an integral component of our design, since it provides invaluable indications of the text’s structure, scope, and content. In addition, the digital nature of the catalog allows for flexible means of access rather than the simple linear sequence of pages, and the modest finding aid of a basic print index. Instead, the same catalog can be browsed in flexible ways, while searching procedures allow for very analytical means of interacting with the resources that completely bypasses fixed modes of presentation.

These conservative extensions gradually developed by the end of the 1990s into a plan to use the deep level catalogs as a basis for building what is called a “thematic research collection.” Such collections use the catalogs to integrate their extended intellectual access with direct access to the texts themselves in various forms, as well as to scholarly analysis. The former include images of texts as well as typed in editions capable of multiple forms of viewing and analytical interaction, while the latter include extended bibliographical notes on topics (the implications of a given title, the role of a given individual in the text’s formation, etc.), summaries of chapters and other components of the text, or extended analytical essays. While still focused exclusively on Buddhist texts and scholars’ textual responses to them, this development was important in retrospect for three reasons. First, it marked the development of a new model of publication in which basic reference resources

are directly linked to scholarly analysis. Second, it developed a platform that was intrinsically collaborative in its intent, in which individual scholars pursuing their own aims are put into collaborative relationships by virtue of the technical and social infrastructure. Third, it began to suggest a process of taking the power, form, and possibilities of publishing back into scholarly hands.

Authority Files to Reference

However, several of the most important developments were rooted in two areas which began off to the side of our core tasks in peripheral issues that emerged out of our cataloging. The first issue was in the encounter with various repeating forms of metadata that we had to track in our cataloging, and our desire to both normalize standard forms from the diverse variants we were encountering and to provide basic descriptive information to identify the item in question. The second issue was in our tentative exploration of incorporating non-textual materials—images, audio, video, three dimensional objects—for purposes of illustration as well as documenting issues of use and reference within texts. Thus both issues converged on the issue of the wider contexts of texts, but, as they were pursued, gradually migrated from the periphery to the center as they became the basis for the transformation of a Buddhist Studies cataloging project into an area studies-based digital library.

The first issue of repeating metadata concerned our struggle with people's names, events, technical terms, place names, and topics that were occurring either within colophons (people's names, place names, events), or within the actual body of the text itself (technical terms, topics). We initially kept track of these with simple flat files with a minimum of associated information and referred to them, following standard library practice, as "authority files." They were used to document the identity of divergent terms—such as two names for one person, or two spellings of a given term, normalize linguistic transformations such as phonetic renderings of names or English translations of technical terms, and document very basic information about the item in question. How did we keep track of the personal and place names referred to in colophons? The translation lexicon for rendering texts in English? How to deal with the cultural setting of these religious groups and movements? As we worked on the need to manage this data and the workflow necessary to keep track of it, each of these simple authority files began to develop into complex databases and projects in their own right. The simple lexicon of translation terms developed into a rich historical dictionary of Tibetan language; the list of place names evolved into a complex Gazetteer directly linked to a complex

array of GIS datasets, maps, and other place-keyed information; our struggle with topical information formed the basis of an ambitious Encyclopedia initiative; and our documentation of events led to a still under development database of Tibetan historical events. As these different projects were designed, we quickly realized that it was necessary to document more than simply Buddhist items, because of how any Buddhist item—a text, a person, a place, a topic—is irreducibly bound up with other such items with the broader historical, spatial, and social dimensions constituting its broader contexts. Thus as the databases evolved, they were designed as broader repositories and reference resources as much about Tibetan culture as about Buddhism.

The second issue first emerged in our interest in using visual materials for illustrative purposes, and our interest in the possibility of audio-video to document both the way texts are recreated and extended in oral commentaries. Visually, many of the tantric texts we were dealing were intrinsically bound up with visual materials in the complex depictions of mandalas and the associated visualization practices of deities. In addition, we were interested in artistic portraits of the various authors, contemporary pictures of the sacred sites and temples, and images of items otherwise hard to understand (ritual items, daily contraptions, and so on). We thus began to collect images, but also explore the various types of metadata necessary to both keep efficiently keep track of images, and to facilitate their use and analysis. This gradually evolved into a database of images now exceeding 30,000 individual pictures.

The use of video recordings in part came out of similar issues in terms of short pans of places, and films of things that could only be understood as a process, rather than a fixed form amenable to photographic documentation. Examples of the latter include making a ritual hand gesture or a variety of other ritual practices, the making of religious paintings called *thankas*, and also ordinary activities that may be referred to within a text. In addition, however, we were impelled by our interest in the vibrant oral tradition of Tibetan Buddhism, and how that oral tradition showed the way in which texts were taken up in performance and dialog in ways that often revealed quite different dimensions of the text in question. Such oral traditions are also often independent phenomena with their own integrity and structure which are complimentary to textual traditions, and not necessarily derivative of them. Tibetan Buddhist texts also are often highly experiential and practical in character, with many genres devoted to the presentation and scripting of ritual and contemplative practices. Here too audio-video recordings are of unique value. For these reasons we gradually embarked on a complex initiative to build a collection and title management system both for workflow and end presentation/analysis, as

well as transcriptional software to facilitate the use of Tibetan language medium materials for end users not conversant with Tibetan.

As these different initiatives grew in fits and starts, they began to constitute a sprawl of unfinished projects that constituted an unwieldy mandala configured around the tightly organized and conceived canonical cataloging project. They were in a direct sense evolving inquiries into the contexts of texts, but the infinity of those contexts and interconnections, and the very finite nature of our resources were in direct conflict with each other. It was thus in 2000 that, with the realization we had arrived at the Tibetan world from the Tibetan text, that we christened—with more aspiration than substance—the Tibetan and Himalayan Digital Library as an initiative devoted to those contexts, to that world.

1. Terminology

The second part of the paper will then look at four specific initiatives growing originally out of the Buddhist cataloging project, and then conclude by discussing the overarching framework we have used to bind these together into an area studies-based Digital Library.

To address words and thematic topics of diverse sorts, we have developed an interrelated dictionary and encyclopedia project. The dictionary is modeled upon the Oxford English Dictionary, which famously began with a system of cubby holes in which slips of paper documenting the actual use of language in various texts were solicited from around the country, and gradually the world. Inspired by this example of building a dictionary out of actual usage as well as archiving a rich archive of those usages, we have designed an online system for enabling collaborators from around the world to work together on building such a dictionary for Tibetan. The design is being directly integrated with our original literary catalogs and electronic text editions, as well as the database of audio-video recording transcripts. Thus, when available, users can proceed directly to consult the sources in question to see the broader context of the passage or utterance. In addition, multimedia content is being integrated into the design, so that audio recordings of sentences, illustrative images, and the like can be linked to as relevant. When completed, the dictionary will enable dynamic connections to be made from anywhere within THDL in editions of texts, scholarly essays, or reference repositories. In this way, users will be able to proceed directly from the occurrence of a given Tibetan technical term to access extended information about that term, as well as many other examples of its usage in written and oral discourses.

The dictionary also upon completion will be integrated with our Encyclopedia

project. This project involves determining a specific thematically defined area—such as literary genres, languages, religious sects, or tenet systems—and then building an ontology of it, i.e. a hierarchically arranged series of classifications that map out the elements within that area and their mutual interrelations. After a communal debate of these knowledge maps, the work proceeds by soliciting brief summaries of each node or classification, thereby allowing users to browse through each area to gain a systematic introduction to its scope and structural situation. These hierarchical classification trees are then utilized to index THDL's entire resources—images, audio-video, thematic bibliographies of print and web resources, journal/book reprints from THDL digitization projects, electronic editions, and scholarly essays. The thematic Encyclopedias thus become expert guides to orient people in specific areas, and then provide extensive affiliated resources at each node for them to explore topics in depth drawing upon different media and format of resources. When an Encyclopedia node is Tibetan term based—the name of a sect, literary genre, or language—then the dictionary entry for that term explicitly points to the corresponding Encyclopedia entry. Finally, these thematic trees, specific nodes, any given essay written explicitly for an Encyclopedia node can all be referred to directly from any THDL edition or essay. Thus users can again seamlessly consult extended information on a given topic in a self-contained way while the essay or edition in question remains relatively concise in its own right.

2. The Oral, Practical and Social Dimensions of Literature

Tibetan Buddhist literature has in the past often been studied as if texts were self-contained entities that made sense in their own right. And yet the slightest acquaintance with texts in actual use within Buddhist communities in Tibetan areas reveals a quite different reality, where texts only can be understood in conjunction with oral traditions, traditions of practice, and their social conception and use. Audio-video technologies are of exceptional value in documenting these three dimensions; with the practical and social aspects, there is also a rich body of embodied performance and tacit knowledge that can best be communicated with visual and aural documentation in conjunction with written analysis.

Tibetan Buddhism is marked by a diverse array of oral genres, which are both deeply bound up with scriptures and are often quite independent traditions. Despite this, we have poorly understood the range of genres, nor have we properly analyzed how such oral traditions converge with, and diverge from, written traditions. On the practical side, a large number of literary genres in the Tibetan Buddhist canon are defined by virtue of their either offering the liturgy and instructions

for specific types of rituals, or being more general presentations of specific ritual and contemplative systems. Thus the interplay of texts and practices is a crucial topic for research, both in terms of understanding the practices outlined by texts, and the precise role a text plays in the actual transmission and implementation of a given system of praxis. Finally, texts are important material objects in Tibetan culture, and many of their most important functions are not primarily concerned with the intellectual content or even reading. These include the widespread practice of amulets containing texts of types, village fertility rituals involving processions carrying scriptures in circumambulation routes, the practice of worship of texts, and the like. While textual analysis of course plays a critical role in understanding all of these, audio-video recordings, their transcription, and their analysis are of unique value.

However, the traditional focus on relatively long documentaries limits the utility of audio-video. Users are given no tools to analyze the film, there is no easy way to search across large bodies of materials, nor is there any easy way to disassemble the film into its building blocks and reconfigure it in one's own interpretative work. We have thus focused especially on filming, archiving, and processing a large number of short clips, ranging over 30 second panoramas of place, to 4 minute songs, to 6 minute social enactments, 20 minute lectures, and 20 hour oral commentaries. In addition, we have emphasized rich transcription and translation, which gives users a way to potentially search according to linguistic criteria, as well as a way to manipulate the playback of resources in very granular fashion. In addition, this initiative merged with the dictionary project in that the expanding body of recordings and transcripts constituted an excellent base to include oral citations of the use of specific terms to stand side by side with the citations of historical and modern literature.

3. From Place to Cultural Geography: Monasteries

Place—along with time—is of course a universal dimension that affects all aspects of human culture, whether texts (where composed? where printed? where stored? etc.), institutions, dialects, ethnicities, distribution of traditions, and much else. In addition, places themselves are prominent elements that must be described and indexed whether small settlements or vast regions, and whether the schemes delineating them are cultural, natural, or administrative in character. Despite this, much scholarship on Buddhism suffers from an inadequate knowledge and sensitivity to spatial issues as evidenced in wildly inaccurate maps, a tendency to broadly treat geographically-keyed issues without sufficient attention to internal

diversity, and so forth. To address this lacuna, it is necessary to build large amounts of base data and interrelate them—changing toponyms over time, latitude and longitude values for each point and region, broad regional schemes such as administrative units, cultural regions, environmental areas, and so forth. The scale of such work, as well as the imperative that it be accessible in an integrated fashion, demands collective work hosted by a central institution. However, such centralized resources—broad in scope but relatively shallow in depth—should in turn be deployed as an infrastructure to solicit, publish, and disseminate individually generated documentation and analysis, which by necessity is generally much narrower but potentially far deeper.

Our work with places in THDL began with the need to keep track of places referred to in colophons—site of composition, locations of transmission, place names occurring in people’s names, monastic affiliations of individuals, and so forth. We created a simple spreadsheet keep tracking of the place names, variant names, sources, and type. However, to create maps we needed to have latitude and longitude for each feature, or locate features with regards to a spatial scheme such as modern administrative units. The latter led to a need to document the relationship of features to each others—that, for example, this county is contained by this districted, and, in turn, contains this township. This work thus gradually led to the design of a generalized Gazetteer to keep track of toponyms, variant names (each sourced and time stamped), identifiers, type (monastery, temple, county, etc.), GIS location (latitude/longitude), other forms of location (administrative, culture), relationships to other features, and other types of basic descriptive data. In addition, we are using GIS software so that each feature can be visualized on a common base map via its latitude/longitude value.

As we explored the utility of the Gazetteer to the Digital Library, monasteries emerged as the key type of feature for which we would explore the full spectrum of possibilities. The key issue here is distinguishing between the Gazetteer as a resource in and of itself for finding feature names and basic descriptive data which can be spatially visualized on the one hand, and the Gazetteer as a service that provides functionality in other repositories. In short, the feature identification number the Gazetteer assigns to a given feature is used to geo-index other collections such images, audio-video, immersive objects, text editions, essays, specialized databases of such things as census data, and indeed any other repository. Thus, for example, the location of a photograph in the metadata for an image is registered through the feature ID from the gazetteer for that location, rather than just typing in the feature name or keeping a local list of feature names within the image database. This allows users to proceed from a given image directly to Gazetteer-based

information about its location. More importantly, however, the Gazetteer can proceed in the opposite direction, so that users viewing the entry for a given feature can request lists of associated resources based upon the use of its id in indexing those resources—all images shot at that location, all recordings of interviews conducted there, all essays that discuss the location, pertinent census data, and more. This allows for the automatic assembling of a great array of materials for a given place long before anyone ever deliberately places them side by side. In the case of Monasteries, the Gazetteer as a resource and as a service thus would allow users, pending available of such resources, to take the name of a monastery and quickly see the history of its names, visualize it spatially on a map, see images of it, listen to interviews on its oral history from elderly monks, consult scholarship discussing the monastery, access an annotated bibliography of external resources on the monastery, or see the occurrence of the monastery's name in e-editions of classic Tibetan texts. We plan eventually to extend this functionality to also post searches against our holdings of electronic editions of Tibetan texts, so that users can also see how a given feature name is found within the literature.

The Gazetteer thus functions as both a resource for finding and analyzing place names as well as visualizing their location cartographically, and a service to collate together other resources that are related in some fashion to a given place. In addition to these dimensions, we are gradually developing specialized feature databases that are intended to systematically keep track of more elaborate and tailored types of data for specific types of feature. These types of resources are understood to constitute an Encyclopedia with individual components keyed to feature types. While the Gazetteer's descriptive data is limited in extent and breadth since it consists of a select range of types of data universal to all places, the Place Encyclopedia is designed for more expansive, in depth, and specialized types of data. For example, the Monastery Encyclopedia's structure covers the following areas: Naming (history), Types and affiliations (religious community, sectarian affiliation), Current status (summary, residents, education), Space (administrative location, cultural location, linguistic location, location description, global position, individual buildings and structures, spatial lay out), Time (history, calendar), Agents (people, specific people, gods and spirits, specific gods and spirits), Social and Institutional Life (internal organization, external institutional affiliations, individual external institutional affiliations, relations with local communities), Activities (ritual life, annual rituals, other ritual traditions, education, work, economics), Things (books, art and other sacred material objects, utilitarian artifacts), and Reference (essays, books, Web sites, images, audio-video, maps). This thus provides for the accumulation of more detail, but still highly structured, information about features.

Likewise, the basic spatial visualizations offered by the standardized GIS output maps offered by the Gazetteer can be expanded through the creation of interactive maps of specific monasteries keyed to very granular resources and documentation. The basic model is that individual buildings and spaces are separately identified, and then linked to structured descriptions which include type, organizational affiliation, description, and relevant types of data such as architectural detail or patron deity. These are then further linked by their feature IDs to associated resources, such as images or audio-video recordings. A related capacity is the design of three dimensional renderings of a specific monastery, or building within a monastery, which then acts as a geoindex of individual rooms and spaces within the monastery. Room IDs are then again used to automatically collate resources on a room by room basis. The end result is a tool to facilitate a very granular spatial understanding of the monastery.

All of these enhanced resources are keyed back to the Gazetteer entry for the given feature by force of the use of the Gazetteer feature ID with each resource. In this way, there is always a central location where users can see at a glance all structured and interpretative documentation and resources available for a given monastery. A final possibility is for a comprehensive project to be designed that systematically solicits and develops materials of various types about the most important aspects of a given feature. Thus, for a monastery, such a project may utilize a similar overall structure as the specialized monastery feature database (time, space, agents, etc.), but each of those areas would hold possibly quite lengthy essays rather than short descriptive data. In addition, these essays may very well draw extensively upon other resources, with direct incorporation of references to maps, images, audio-video recordings, immersive reconstructions, and the like. Whereas the Gazetteer's indexing services automatically pull together a comprehensive index of all resources relating to the monastery, a Monastery project instead deliberately designs a comprehensive structure and then actively develops an integrated set of resources to publish within that structure.

Such an integrated suite of archives and tools for documenting places gradually builds a large body of structured information that can be analyzed in powerful ways by users. Such capacity enables the identification of patterns that are otherwise very difficult to discern. In the other direction, in depth studies and resources on specific monasteries allow for users to explore in holistic and immersive manners the nature of a monastery as a place, an institution, and a culture. As a publishing forum, it provides an unprecedented means for integrated publishing of quantitative and interpretative data, textual and multimedia formats, primary scholarship and reference resources, and textual data and cartographic representations.

4. Community

Communal issues are often neglected in our contemporary paradigm of individual scholarship in the humanities and social sciences, of dispassionate “objective” analysis, and a general disjunction between community development work and scholarly activity. The present initiative sees technology as offering a unique resource to facilitate new models of collaborative work that ranges across institutions, nations, disciplines, and professions. Such collaboration can consist of explicit partnerships facilitated by communication and data sharing tools, as well as implicit partnerships created by individuals working entirely separately from each other yet using integrated technical repositories that automatically create interconnections. An excellent example is the Monasteries initiative discussed above. Collaborative approaches have the potential to systematically address tasks that otherwise are simply beyond the scope of individual scholars, or the mere passive accumulation of unconnected individual scholarly initiatives. In addition, collaboration across areas of specialization—an anthropologist working with a geographer, a textual specialist working with a photographer, a researcher in Eastern Tibet working with a researcher in northern Nepal—makes possible the discovery of patterns of interdependence and divergence that otherwise would remain inaccessible simply by virtue of the need for competencies that rarely, if ever, coincide in a single individual.

However mere, collaboration only effects the quality and scope of scholarship, leaving unchanged the basic social contract between academics and the communities they study and often live within. The standard modern academic approach utilizes a rhetoric of objectivity and critical reflection to remain distant from actual constructive engagement with the communities they study, or concerns for how their activity and intellectual products impinge upon those communities. At first glance, technology would seem to contribute to this distance, with the digital divide involving increasingly sophisticated forms of publication for which other communities lack the infrastructure to even access, much less utilize in any significant way. In addition, technology is often thought to decrease direct interaction between individuals, and participatory communal events and activities. We thus based our project from its onset on a resolute commitment to the intersection of knowledge and community, and in particular, to how our scholarly activity could be utilized to benefit local Tibetan communities and to aid the development of their capacity to express and access knowledge of all types. Technology plays a central role in terms of aiding in communal uses of technology, since information technology is a central gate keeper in contemporary society to education, revenue, entertainment,

political representation, and much else. Thus helping adapt technology for use by communities in terms of internationalization for local writing scripts, adapt tools and repositories to reflect communal perspectives and needs, and arrangement of training and collaboration opportunities can constitute critical contributions to the development and support of local communities. In addition, technology with its capacity for developing integrated resources with different languages and arrangements suiting different communal realities and needs can be vital in feeding knowledge back into communities, as well as providing communities broader avenues to represent their own needs, situations, and perspectives to outsiders. In these ways, digital initiatives within area studies have a great potential for significantly expanding partnerships of engaged activity between scholars and local communities.

Conclusion

In summary, a quiet revolution is brewing in the Academy in the cauldron of new digital library technologies and the field of humanities computing. The fundamental relationship between knowledge and community that has governed colleges and universities over the past five decades is being challenged in unprecedented ways. In humanities research, publication, and teaching, this involves major transformations in the areas of collaboration, interdisciplinary approaches, active student reading, internationalization, public outreach, and publication. Particularly interesting for the field of Buddhist Studies is the way in which such developments are enabling a much more radical convergence of religious studies with the broader field of area studies relevant for the study of a particular religion. My paper has used the Tibetan and Himalayan Digital Library as a test case to discuss these new developments. Through discussing its various projects and their relationship to research and publication, I have raised broader issues of the changing nature of the academy with the rise of humanities computing and digital libraries. In particular, this test case of Tibet and technology raises issues of how new technologies are enabling us to readdress the nature and importance of the relationship of area studies and Buddhist studies, and the web of issues caught up in that relationship.

Out all of all these disparate steams of documentation and inquiry that spilled out of our struggle with the cataloging of Buddhist texts, we thus ultimately organized them around the central notion of Information Communities. This is an often neglected issue in technological initiatives, and indeed in academics overall. The most wonderful and sophisticated technology will fail miserably if adequate attention is not paid to communal issues, to the human-human relationships that

technology is supposed to facilitate, not displace. In my experience, technology is creating unprecedented communities and transforming extant ones, not further distancing us from the communities we should inhabit more fully. Academics can no longer simply conceive of themselves as solitary individuals generating knowledge, with the exception of occasionally being dragged into the classroom to work with students. The formation, support and education of communities should be at the center of the Academy—communities of scholars, of students, of multiple cultures, of the academy and society at large. The library of the future thus comes to reclaim its heritage from the library of the past—the central nexus of knowledge's production, dissemination and reception, and the site where communities devoted to knowledge come together.

The human basis for the Digital Library is the Information Community, a community of knowledge. In essence, an information community consists of three elements: people, collections, and tools. Each of these is fundamentally transformed in relationship to the traditional library, and together are engendering a radical transformation on the nature and constitute of communities based on, and devoted to, knowledge. People are the creators, archivers, disseminators, users, publishers, technologies; traditional roles are merged, and users become creators, thereby fashioning a self-sustaining loop. Collections involve fundamental datum as the building blocks of knowledge as well as complex presentations of that data, the unusually granular with the unusually extensive, media of diverse types, essays integrated with reference resources, and common interfaces across disciplinary divides to create implicit synergies. Tools then involves the tools for creating and processing knowledge, including the ability by any user to analytically interact with collections and produce new user-defined collections, and the capacity for flexible presentation so that the same resources can serve specialized and broad audiences, as well as different communities across linguistic and cultural divides.

Digital libraries based upon such communal notions and practices are thus quietly laying the groundwork for an alternative vision and practice of the modern University even as the rigid structures of the current Academy become increasingly bound by disciplinary, departmental and regional limits. The transformative possibilities of technology are nowhere more evident than in area studies, with its challenge of multi-lingual communities, collaboration and dissemination across highly uneven national boundaries, and inherently cross-disciplinary scope. We might summarize the general benefits of such an approach under five rubrics: active learning, collaboration, interdisciplinary approaches, internationalization, and communal outreach. Active learning is encouraged amongst students and the public by providing access to the underlying data as well as finished analysis, and

providing them tools to allow them to reconfigure the data in alternative ways so as to encourage them becoming active producers of knowledge engaged in fundamentally creative processes. Collaboration is facilitated across individuals, institutions, cultures, and nations despite its relative rarity in the humanities as a whole, thereby forming explicit and implicit partnerships that are far more capable of addressing the impossible challenges of exploring the infinite webs of context for a specific topic within Buddhism and the cultural overall. This is particularly manifest in the profoundly interdisciplinary vision of area studies which is proactive and integrative, not simply different disciplines passively thrown together. In addition, such approaches help enable more international approaches such that different perspectives deriving from specific cultures can be represented, disseminated, and put into nuanced conversation with each other. Finally, knowledge is made relevant and accessible to a far broader audience, such that the social implications and value of knowledge become an explicit consideration, while in particular, we as scholars are encouraged and enabled to consider the positive and negative impact of our activity on the communities we study, especially in terms of helping them act as agents of representation in their own right. As a whole, such initiatives at least suggest a quite new model of how we might study Buddhism and area studies in a collaborative, holistic, interdisciplinary and ethical fashion which may start or return to texts and specialized practices, but also ranges over the region's people, history, language, culture, environment, geography and other dimensions which form the ultimate matrix of those texts and practices. In exploring the contexts of Tibetan Buddhist literature, we thus arrived at, well, the Tibetan world—culture, history, environment, community. From this world, we can return to the text with new perspectives and nuances in understanding.

佛學研究和區域研究的關係

——從人文科學電腦應用而來的新觀點

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提要

一場學院的靜默革命正在數位圖書館的新科技和人文科學電腦應用的溶爐內生成，在過去五十年內轄管高等學院思維的知識與社區間的根本關係正被前所未有地挑戰，在人文科學的研究、出版與教學，這新氣象帶動合作模式、跨科際向度、學生的主動閱讀、國際化、走向公眾與出版的重大轉化。對佛學研究而言，這些新發展使人特別感興趣的地方正使宗教研究與適切於該宗教的區域研究朝向一個相當激烈的融匯。

我的論文將以西藏與喜馬拉雅數位圖書館 (Tibetan and Himalayan Digital Library, THDL, <http://www.thdl.org>) 作測試個案，討論這些新發展。

我將主要探討 THDL 裡關於西藏佛教的四個互相環扣的創見性項目。第一是西藏寺院專案，它對寺院作詳盡測量，同時對一小部份寺院採用深入的投入式研究；第二個項目將以視聽技術記錄口傳傳統中的文學、歷史、地點及其他很多的內容；第三個項目是西藏佛教文獻專案，它將結合深入的編目與廣泛標記了的文獻電子版，其中包括著名的甘珠爾及丹珠爾；第四就是把牛津大辭典的編修方法應用到內容豐富的藏語歷史辭典的詞匯條目解釋上。

透過討論這些項目和它們與研究及出版的關係，我將提出隨著人文科學電腦應用和數位圖書館而來的學院的性質轉變的更廣泛議題，我將以西藏作測試個案，討論區域研究和佛學研究的關係，並勾劃新科技使我們重新面對這關係的性質與重要性的方式。

關鍵詞：1. 人文資訊學 2. 西藏學 3. 西藏喜馬拉雅數位圖書館 (THDL)