GIS for Digital Humanities:

Prospects, Problems, and Lessons for Geographic Information Librarians

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Abstract

Scholars in the emergent academic movement known as digital humanities--the method and

community of practice that uses advanced information technologies to perform research in

disciplines traditionally associated with the humanities--have used geographic information

systems (GIS) to analyze and interpret primary textual sources in novel ways for

approximately the last decade. The use of information systems to produce data visualizations

rhetorically comparable to traditional humanist textual scholarship has been controversial,

however, and has struggled to take root in scholarly institutions. This paper surveys the state

of GIS use in digital humanities and presents lessons and opportunities to geographic

information librarians who seek to lead, serve, or otherwise contribute to its advancement. It

identifies the major theoretical and practical challenges to digital humanist data visualization

applications in general and GIS in particular, describes five recent digital humanities projects

that use GIS, and projects future needs and expectations based upon the degree to which

these projects address systemic problems.

Keywords: digital humanities, geographic information systems (GIS), geographic

information librarianship (GIL), scholarly communication

Limitations

The projects described in this paper were selected through queries of the major

scholarly publications associated with digital humanities and applicability to specific

problems expressed with GIS in the literature preceding and including Martyn Jessop's 2008

articles in *Literary and Linguistic Computing*. Further research is required to acquire a

quantitative measure of the volume and reception of scholarly articles addressing the use of

GIS or specific GIS projects during the timeframe that this paper addresses.

The specific issue of the representation of time in humanist scholarship and in GIS-

based visualizations is also not addressed. While many of the theorists, practitioners, and

projects cited in this paper explicitly confront this important topic, it requires individual

attention in a later paper.

Digital Humanities

In general and for the purposes of this paper, "digital humanities" can be defined as

the use of advanced computing and other information technology applications to perform

scholarly research in fields traditionally associated in academia with the humanities

disciplines, including but not limited to fine arts and art history, history, languages, literature,

and philosophy. The concept has roots in a broader tradition of engaging humanist scholars

in word processing, bibliographic database creation and management, and similarly

foundational efforts of "humanities computing" since the 1950s (Svensson, 2010, 2011; Toms

& O'Brien, 2006). However, coalescence around digital humanities as itself a simultaneous

research methodology and community of practice did not begin until the late 1980s

(Borgman, 2009, Svensson, 2011; Toms & O'Brien, 2006). And while intensive and frequently

contentious, the survey and criticism of research needs and community values that define

digital humanities has only developed over roughly the last decade.

Humanists "generally endeavor to reinterpret and reevaluate our textual legacy in an

evolving understanding of larger historical, social, and cultural contexts" (American Council of

Learned Societies, 1997, para. 22). Moreover they embrace subjectivity, rather than the

empiricism of natural and social scientists, in their interpretation and analysis of text and

context because it "privileges the individual as an active agent and not a passive receptor of

social processes" (Ketchum, Luria, Dear, & Richardson, 2013, p. 313). With great room for

diversity, humanists generally ascribe to the constructivist view of information that rejects

scientific realist notions of observer independence (Ducker, 2013). This identity

understandably clashes with efforts to introduce technologies and processes born of the

necessarily empirical and precise needs of the natural and social sciences into digital

humanities. As a result, discourse concerning the maturation of digital humanities has

exposed broad institutional problems as well as challenges to incorporating specific

information system types.

GIS are discussed as a subset of the latter and in detail in the following section, but

they generally fall under a category of graphical display that is itself particularly controversial

in discussions of digital humanities. Opposing ideologies frame the use of data visualization

in humanities research as alternatively innovative and rhetorically complementary to text-

based interpretation (Jessop, 2008b) or disqualifying positivist for a scholarship that intends

to sustain the subjective agency of the individual reader of text (Drucker, 2013).

In their survey of the information needs of "ehumanists"--essentially early adopters of

digital scholarly research tools and participants in digital publishing--Toms & O'Brien

observed that scholarly research in the humanities begins and ends with the reading of

text(s). Subsequently, "[t]he humanists' analysis occurs during reflection, unaided by

statistical software packages, and in the individual's mind rather than the laboratory" (2006, p.

125). This simple fact is the foundation of scholarly institutions in the humanities that

implicitly and quite often explicitly reinforce and reward individual intellectual achievement,

most notably in publishing (Brockman, Newmann, Palmer, & Tidline, 2001; Unsworth, 2003).

Digital humanists who overcome great hurdles in technical competency therefore still

rightfully fear that their work will not be seen, let alone accepted and recognized, within the

disciplines in which they practice because peer review and publication are still bound to the

model of the print journal, a model that does not support the presentation of complex,

collaborative, and nonlinear research. Nor by extension can they assume that academic

libraries and archives will retain and reliably house the products of their research for future

reference. "No peer review, no publishers, no archives" (Unsworth, 2003, p. 13) was the

professionally dangerous environment into which digital humanities pioneered a decade ago.

There has been significant progress in ameliorating the conditions that inhibit digital

humanities scholarship in the intervening years, both at the institutional and

technical/methodological scales. New open-access journals have been founded and continue

to review and publish research online and in a format complimentary to both the traditional

research article and hyperlinked, visually dense, and "born-digital" products and processes of

digital humanities research, most notably *Digital Humanities Quarterly* (first published in 2007)

and the *Journal of Digital Humanities* (2011), though both of these are still self-described

'experiments' (Alliance of Digital Humanities Organizations, 2014; Journal of Digital

Humanities, n.d.). As projects highlighted in following sections of this paper will show,

libraries and archives have also greatly expanded their roles in supporting the research process and sustaining its digital iterations.

Expanded opportunities for peer review, publication, and sustained reference have also been instrumental to advancing the discourse concerning data visualization. In particular, the journals mentioned above have promoted and incubated further development in text or topic modeling applications, tools for visualizing characteristics of primary texts in two- or three-dimensional space that have progressively gained acceptance among literature and linguistics scholars (Blei, 2012; Gorges, 2011; Schmidt, 2012). The breadth and depth of research interest in this area can be seen among the nearly-400 tools collected for reference, use, and review by the Text Analysis Portal for Research (TAPoR) project hosted by the University of Alberta (Jessop, 2008b; Svensson, 2010).

While lively debates over foundational theory within and among the disciplines now inextricably allied under the digital humanities banner continue, incremental progress like the above slowly build towards discussions of greater institutional support and infrastructure. Interdisciplinary centers, "labs," and courses have emerged at universities across the United States and Canada, produced popular web-based archives and other research tools, and further refined for their members the margins of their practice and the knowledge, technical expertise, and resources needed to research and practice productively under this new paradigm (Cunningham, Duke, Eustace, Galway, & Patterson, 2008; Mahoney, 2009; Svensson, 2010).

GIS: Prospects and Problems

Expectations that GIS could be used to spatially express both quantitative and qualitative information drawn from research in the humanities followed quickly on the heels of the advancements in "mapping" the extra-geographical texts and topics mentioned above (Crampton, 2009, p. 95) and appeared to have precedent in the earlier and ongoing development of HGIS--applications of GIS to historical data retrieved in social science, but especially environmental and economic, histories (Holdsworth, 2003; Gregory & Healey, 2007; Knowles, 2000; Offen, 2013). However, the history of the debate over and incremental implementation of GIS in digital humanities scholarship dramatizes many of the larger problems above and raises still new ones specific to these systems. In brief, as tools developed initially for natural and social science research, GIS were slower to take hold than were modeling and visualization applications novel to digital humanities because they tended to exemplify the problems endemic to conducting and presenting humanist scholarship in realist forms.

Martyn Jessop, Director of Teaching and GIS Project Manager at the Center for Computing in the Humanities (CCH) at King's College London, surveyed the persistent issues inhibiting GIS use among humanist scholars over the course of two articles published in 2008 in the journal *Literary and Linguistic Computing*. The four broad categories of inhibitors that he identifies would sound familiar to anyone who has followed the development of digital humanities in general over the preceding years:

1. The use of data visualizations as rhetorical devices *per se*,

2. The suitability of existing systems to perform and/or represent research in the humanities,

3. The suitability of the kinds of data with which humanists typically work to GIS, and

4. Scholarly institutions and the normative research practices that they reinforce (Jessop, 2008a, p. 42)

The acutely visual nature of scholarly work with GIS is integral to the three other problems and therefore to the continued controversy in the academic discourse. On one side of the ideological debate over empiricism mentioned earlier, graphics are seen as having little utility as either primary source material or expressive mode, in both cases because of their perceived rhetorical inferiority to text. Even among digital humanists then, graphic design is seen in this model as "a kind of accessorizing exercise, a dressing-up of information for public presentation *after* the *real work of analysis* has been put into the content model, data structure or processing algorithm" (Drucker & Nowviskie, 2004, p. 441). To the contrary, advocates of digital visualization remind us that humanists have long relied upon visual representations as secondary sources, including museum or gallery collections, moving images, dramatic recreations, maps and atlases, photographs, and otherwise static images (Staley, 2003). To the disciplines of archaeology, art history, or film studies, to name a few, these visual representations indeed constitute primary sources.

To the issue of the suitability of data retrieved through humanist scholarship to GIS, Jessop concedes that the humanist's data is "fuzzy" relative to the discrete data that is characteristic of the natural and social sciences (2008a, pp. 44-45; 2008b, p. 283). Sparsity or uncertainty does not in and of itself disqualify this kind of data from spatial representation, however. Most GIS software were simply developed to achieve levels of precision beyond the humanist's scope, so "a means of depicting uncertainty needs to be developed" as well (Jessop, 2008a, p. 44). In the meantime, the existing technologies are inaccessible to many scholars by dint of cost and the necessary technical competencies to use them.

As a result, digital humanists have found it necessary to work collaboratively with specialists in fields like geography and information systems, and to find alternative sources of long-term institutional support like project funding, resource hosting, and publishing. While this can lead to greater visual and spatial literacy among the humanist participants and may advance the development of systems specific to humanist research, it exacerbates these scholars' unmooring from standards of scholarly rigor associated with the peer review and publishing processes within their own disciplines. While Jessop is quick to promote that GIS can be used to create resource discovery tools that are less "culturally specific" than traditional textual indexing (2008a, p. 41), for instance, that lack of cultural specificity is tantamount to ceding ownership or authorship in a humanist scholarly pursuit.

To disinhibit humanities scholars from using GIS, Jessop makes four broad recommendations between his two articles:

1. *Visual literacy* - In the long-term, scholars across the humanities require much better comprehension of the rhetorical utilities of visual representations. This would by necessity be a fix that manifests very early in education, however, and possibly even too early for humanist scholars at the university level to influence (Jessop, 2008b, p. 288).

2. *Standardization* - To enable the level of scholarly rigorous review necessary for publication in traditional modes as well as interoperability of data among scholars building upon one another's work, visualizations produced by digital humanists must adhere to explicit standards for computer graphics. Specifically, Jessop references the London Charter for the Computer-Based Visualisation of Cultural Heritage as a standard to which digital humanists could ascribe or otherwise develop to their own

purpose (2008b, pp. 289-291). The London Charter establishes standards for the

accessibility, transparency, evaluation, and interpretation of data used for visualization

in the most general sense, but it provides few details and hasn't developed beyond its

2009 draft status.

3. *Technological minimalism* - Given the myriad problems endemic to conducting

   humanistic scholarly activity with tools native to the sciences, digital humanists can

   and should use the simplest, most widely accessible, web-based or freely

   downloadable tool that can feasibly support their research. Using such a tool "does

   not require scholars to learn how to create and manage a GIS; they are left free to

   pursue their research interests after acquiring only minimal new knowledge or skills

   and without any additional financial outlay." Jessop specifies that recent projects at

   CCH experimented with Google Maps and ESRI's ARCexplorer (2008a, p. 43).

4. *Archiving* - Building on the foundation laid by TAPoR, scholars can create a "one stop"

   resource for exemplary projects, resources, and collaboration. In the short-term, such

   an online archive would supplant the need for strict standards of practice in an

   enterprise that cannot yet support them. In the long-term, the interdisciplinary

   alliances that it facilitates could organically develop common standards (Jessop,

   2008a, pp. 45-46).

While certainly not all of these recommendations could be heeded in the six

intervening years, movement towards Jessop's principles is evident across many recent uses

of GIS in digital humanist scholarship. Insofar as they accurately represent the lessons of

earlier successes in systems development for digital humanities and the most significant

remaining inhibitors of GIS in particular, they provide a metric for GIS's vitality in this area and

for the knowledge and skills incumbent upon geographic information librarians in their

service.

Recent projects

Mapping Texts

Published in the inaugural volume of the *Journal of Digital Humanities*, the *Mapping*

Texts project (http://www.mappingtexts.org) of Stanford University and the University of

North Texas is an example of modest deployment of GIS to enhance scholarly activity in the

conventional modes. Put simply, the project created an online tool that allows users--

primarily scholars of history, communications, languages, and linguistics--to geographically

navigate and discover historical Texas newspapers. The explicit goal of the project is to

provide users with methods of resource discovery based on the image quality and/or

linguistic patterns related to the massive collection of digitized historical newspapers held at

the University of North Texas, not necessarily their geographic attributes. However, project

leaders acknowledge that their mission was also to "experiment with new methods for

finding and analyzing meaningful patterns" embedded in such enormous textual datasets

(Torget & Christensen, 2012, para. 1). While the project presents them through Google's Maps

API, a lightweight and increasingly ubiquitous GIService, the data visualizations ultimately

required a team of eleven professors, students, cataloging librarians, data analysts, and

visualization and web development specialists, spanning Stanford University, the University

of North Texas, and a private web design enterprise, to create (Stanford University & The

University of North Texas, 2011). And while engaging with a geographically and thematically

specific collection of primary source material, the title of the project and of Torget &

Christensen's journal article about it--"Mapping Texts: Visualizing American Historical

Newspapers"--indicate the generalizability it ultimately seeks.

The 19th-Century Concord Digital Archive

        The 19th-Century Concord Digital Archive (http://digitalconcord.tamu.edu), a project led

by Texas A&M University Assistant Professor of English Amy Earhart, is an online repository for

primary texts and maps related to the 19th-century history of Concord, MA. As such it seeks to

interlink digital maps of a narrower geographic specificity than the above project with a wider

range of primary sources and source formats, including literary texts, architectural drawings,

photographs, broadsides, physical artifacts, music, town records and minutes, police reports,

and period newspaper clippings. Directly responding to then-Dean of the Graduate School of

Library and Information Sciences at the University of Illinois at Urbana-Champaign John

Unsworth's appeal for "large datasets [that] will lead to our being able to ask and answer new

kinds of questions" (2003, p. 8), Earhart contends that the site's "standardized" digital format

allows it "to become an ever-expanding dataset that utilizes various tools to view,

manipulate, and interpret primary texts" that "encourages the user to explore different ways

of interpreting materials, spurring new and exciting research questions and outcomes" (2009,

para. 2).

        Since its first appearance online in 2009, however, the repository has actually included

scans and transcriptions of only five literary texts, four town reports, and downloadable

versions of only one historical map and one map inset. To date, no "interlinking" of these

resources is evident. To view an historical map of Concord, site users must download a KML

file viewable in Google's (free) Earth application. This modest amount of material required

Earhart's collaboration with librarians at Texas A&M and the Concord Free Public Library, five

graduate students, and advisory board members from Texas A&M, the State University of

Albany, the University of South Carolina, and the Concord Town Clerk's office, as well as more

than $40,000 across seven separate grants to collect and publish online (The 19th-Century

Concord Digital Archive, n.d.a, n.d.b).

Traveling the Silk Road

     In an explicit effort to marry new technologies to existing models of world historical

scholarship, University of California, Merced Associate Professor of History and World Cultures

Ruth Mostern and Graduate Assistant Elana Gainor designed and delivered an undergraduate

course in Silk Road history that compelled students to create complementary term papers

and digital maps. At the time of its delivery in the spring of 2010, the project was significant

for its departure from the model of the online repository or "digital archive" of scholarly

resources as the primary contribution to scholarly activity. Instead, Mostern & Gainor

intentionally designed their course to teach digital mapping theory and practice specific to a

discrete historical topic, and in so doing to apply standards of review within their field to

scholarly work in a novel medium. The ambition from the project's outset was to inform the

ongoing discussion concerning peer review. "Instructors cannot design digital assignments if

they cannot determine how to grade them," Mostern & Gainor explain, "just as peer reviewers

cannot assess their colleagues' work" (2013, para. 26).

     In appropriately digital humanist terms, Mostern & Gainor split their course between

traditional lecture and new "lab" sections, and indeed used the course as their own laboratory

to test and evaluate review standards. Simultaneously cognizant of the training to a new

generation of world historians that the course represented, Mostern & Gainor stressed

learning outcomes, new technical competencies, and visual literacy in their evaluations of

both their own review process and of the students' term projects. Through their projects,

students learned how to use spreadsheet applications to organize georeferenced

information, write basic HTML and modify KML codes to format their maps' designs, and

design graphics to complement their term papers. Mostern & Gainor in turn graded their

students' work and their own achievement on a rubric consisting of 1) writing, 2) spatial

reasoning and visualization, and 3) storytelling and integration (Mostern & Gainor, 2013, para.

21, para. 29). To support the course, its instructional technology (mainly Google Earth), and its

three project managers, Mostern & Gainor retrieved funds from the Department of

Education's Fund for the Improvement of Post Secondary Education and from the UC Merced

Center for Research on Teaching Excellence (Mostern, 2010). While no online repository of

completed student work exists, examples with explanations of the course's design and intent

can be viewed in a video posted by Mostern to YouTube.

MediaNOLA

        Tulane University's *MediaNOLA* (http://www.medianola.org) is a research project,

curricular device, and online repository with decidedly humanistic origins and goals. It's

participants strive "towards creating a website that show[s] the invisible contributions of

ordinary people, places, and practices in the creation of New Orleans culture and its

representations," by preserving materials relevant to local cultural production, sharing and

illustrating local cultural histories, and enabling citizen engagement in public history (Mayer &

Griffith, 2013, para. 1). More than a static secondary source of scholarship, however, it builds

upon the model developed by Mostern & Gainor above by supporting the curricula at Tulane

across several disciplines and schools, currently including classes in the History, English,

German, Architecture, Music, and Communication departments, as well as interdisciplinary

programs (Mayer & Griffith, 2013, para. 8). In this way the common repository supports the

specific pedagogical and scholarly imperatives of each of its participating disciplines, some of

which--such as Historic Preservation--take to the public outreach and advocacy nature of the

site uncharacteristically easily for students and scholars in the humanities (Wiley, 2013, para.

4). Subsequently, the project constitutes something akin to Jessop's "one stop" with

geographic specificity. It's leads did not anticipate this at the time of the project's initial

planning, but have since accepted the role and reinforced it by adding a public journal, an

orientation video, a handbook, a downloadable research guide, creative commons attribution

information, teaching handouts, and other guidance for writing history or designing courses

to the site (Mayer & Griffith, 2013, para. 25). The project has also taken an unexpected lead

role in Tulane's service learning curriculum, which guarantees it a significant degree of

institutional sustainability as Tulane in turn looks to it as an integral tool in sustaining public

history projects in New Orleans after Hurricane Katrina (Mayer & Griffith, para. 8).

  The project did not initiate with many intrascholastic, community, or technical

partnerships in mind, rather it encouraged participants to seek partnership opportunities as

their own disciplines' pedagogical or technical needs demanded, which its leads regret. "If

anything," they say, "this project has revealed the importance of strong partnerships at the

outset of a digital media project, especially with regard to the creation of pedagogical goals

and ideals" (Mayer & Griffith, 2013, para. 31). *MediaNOLA* also suffered through a trial and

error process in terms of technical design and support. The private developer who was

initially attached to the project decided to take their web application to the commercial

market, leaving *MediaNOLA* to start its front-end development from scratch. The Google Maps

API was chosen as a replacement and still underpins the site's map interface today, but

another custom-developed solution that reinforces *MediaNOLA*'s "identity" is planned (Mayer

& Griffith, 2013, paras. 21-23).

Initial planning for *MediaNOLA* was funded by the National Endowment for the

Humanities (NEH). Continued support comes from the NEH, Tulane University's Center for

Public Service and its School of Liberal Arts, and the Volunteer Louisiana Commission, a

volunteer management and networking organization (Tulane University, n.d.; Volunteer

Louisiana Commission, 2014, para. 2). Team members are still evaluating the best way to

measure return on investment for their project, but point to high levels of visitorship at the

website and especially to the enthusiastic feedback from the public to its publicity campaigns

and on its journal as indicators of success (Mayer & Griffith, 2013, para. 13; para. 33).

Mapping Our Anzacs

Publicity and community engagement of the kind that *MediaNOLA* conducted may be

an entirely new challenge for digital humanists, even those involved in public history efforts

like *The 19th-Century Concord Digital Archive*, but it is not entirely without precedent. While a

project of a government agency rather than scholar(s) or institution of higher education,

Mapping our Anzacs offers scholars an instructive lesson in the balance of disciplinary rigor

and flexibility and in the long-term value of public engagement to institutional support of a

digitally hosted, humanistically oriented mapping effort.

Mapping Our Anzacs is a project by the National Archives of Australia (NAA) to open

the service records of nearly 400,000 men and women who served during World War I. These

records had already been digitized, but NAA archivists sensed value in providing a

geographic discovery tool to more widely share them. This was initially conceived as an

opportunity to create an online exhibition that would coincide with the ninetieth anniversary

of the war's end and the annual observance of Anzac Day in Australia, but the archivists also

knew from the outset that it would be an opportunity to experiment with Web 2.0

technologies that could improve their public presence in this and future projects (Sherratt,

2011, pp. 128-129).

Using these Web 2.0 technologies, specifically Google Maps for geographic discovery

of records and Tumblr to host a "scrapbook" of other artifacts open to public contribution,

required NAA archivists to revisit and design compromises to long protected standards of

professional archival practice. Issues of authority and control over all elements on the site,

familiar concerns to digital humanists who jealously protect authorship and individual

intellectual achievement in otherwise collaborative projects, particularly concerned the

Mapping Our Anzacs team (Sherratt, 2011, p. 129). They found, however, that a small measure

of flexibility on their part was rewarded with a deluge of public interest and support. "By

taking the risk," testifies project team member and Australasian Association for the Digital

Humanities committee member Tim Sherratt, "we have not only gained valuable publicity

and user support, we have opened up the realm of possibilities for future development"

(2011, p. 136).

Future development is an option for this project because using existing and familiar

web services, as Sherratt explains, "gave us a kickstart that enabled us to do a lot with a little"

(2011, pp. 136-137). Regardless, realization of the project required the in-house attention of

four people to control data quality, translate it seamlessly to NAA's existing web environment,

and "marry content and technology" to create a usable resource (Sherratt, 2011, p. 129).

Initiated with the support of the Australian Department of Veteran's Affairs, *Mapping Our*

Anzacs is now essentially self-sustaining.

Lessons for geographic information librarians

As *Mapping Our Anzacs* suggests, there are opportunities in both service and

leadership for information professionals, and especially geographic information librarians, in

digital humanities projects that use GIS. To lead, serve, or collaborate with a network of digital

humanists, however, requires perspective on this user group's peculiar needs and ambitions.

Viewing the five projects above through the lens of the scholarly discourse that preceded and

coincided with them provides some insight into these and their applicability to GIS.

Jessop's suggestion that humanists could focus more intently on their particular

scholarly interests if they were to reduce their technological scope to the minimal necessary

support seems to have traction. All five of the projects above that appeared after his articles

were published essentially rely on the same suite of GIServices--three on Google Maps

specifically, two on Google Earth. In spite of grand suggestions about the "new and exciting"

questions that new tools and methods could answer, there appears to be little interest in

developing completely novel platforms for the visualization of digital humanities data now

that Google's services are so accessible. One project team's sustained interest in a custom

solution that supports its larger aesthetic, however, hints at possible weariness or stigma

associated with Google's ubiquitous products.

"Google-ization" of this realm of the digital humanities may also explain the stunted

state of its exploration into data visualization standards. Only *The 19th-Century Concord Digital*

Archive promotes its contribution to a standardized mode, while *Traveling the Silk Road* and

MediaNOLA notably delegate responsibilities for establishing or maintaining scholarly

standards to the disciplines from which each mapping project originates. The latter is a

strategic decision, however, to accelerate standardization within these disciplines, which in

turn increases the utility and appeal of their products as secondary sources of scholarship as

well as precedents. Contrary to Jessop's recommendation of a "one stop" source for

exemplars then, the momentum may indeed tend more towards discipline-specific resources.

While Google products gain in accessibility and projects continue to refine their foci to

topics increasingly specific to their disciplines, there remains a need for technical specialists in

planning, implementation, and sustained support. If geographic information librarians wish

to, they can grasp this opportunity. Three of the five projects outlined above already relied

upon a librarian, archivist, or combination to manage data, systems, and/or content

representation. Whereas earlier and more experimental projects may have involved more

direct collaboration with geographers, increased specialization and therefore declining

opportunities for research authorship in digital humanities scholarship might continue to

reduce their participation.

In a 2013 commentary in the journal *Progress in Human Geography*, Syracuse University

Associate Professor and Director of Undergraduate Studies in Geography Robert Wilson

opined that "few departments are explicitly seeking geographers with perspectives from the

humanities" in part because of "its seeming lack of practical applications" (p. 311). Librarians

with specialties in the humanities and geographic information systems are not so disinclined.

To the contrary, they are the natural resources to projects that quite often require equal

knowledge and command of project and content management, information design, public

outreach and advocacy, software development, and above all interdisciplinary scholarly

communication. Commenting on his institution's recent experiences digitizing vast

collections of its historical map holdings as if he were evangelizing for just this new role,

Geospatial Librarian and Curator of the Lionel Pincus and Princess Firyal Map Division at the

New York Public Library Matt Knutzen writes:

> Our work as stewards of historical map information and our subsequent efforts to
>
> collaboratively disseminate philosophies, methods, and data are therefore critical
>
> should we choose to collectively advance the state of this art. Additionally, the
>
> substantial costs associated with sustainably developing, documenting, and
>
> maintaining open-source software, together with the costs of mass digitization,
>
> indexing, georectification, and transcription of maps, are far too much for a single or
>
> even small group of institutions to bear, suggesting as an alternative a broad multi-
>
> institutional collaboration as a way forward. (Knutzen, 2013, pp. 22-23)

Historical maps constitute only a fraction of the resources that geographic information

librarians will take responsibility for over the coming years and decades. Knutzen's view of

their stewardship, however, extends naturally to the resources and collaborations

characteristic of digital humanities. If there is ever to be a one-stop resource for geospatially

represented projects in digital humanities, after all, it is librarians who will build it.

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