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The Library in Digital Humanities: Interdisciplinary Approaches to Digital Materials

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Introduction

Digital Humanities and Library & Information Studies (LIS) share a common interest in the collection, organisation, preservation, and use of digital materials. The academic library acts as a hub for digital humanities activities on many campuses, and this close relationship has led scholars to extensively interrogate how library services can support, and contribute to, DH (Green, 2014; Hartsell-Gundy, Braunstein, & Golomb, 2015; Hartsell-Gundy et al., 2015). What little work exists that focuses on the nexus of information studies and digital humanities has attempted to establish common intellectual ground (Robinson, Priego, & Bawden, 2015), to compare each discipline's respective strengths and weaknesses (Koltay, 2016), or to express the ways in which DH can enrich the study of information work (Clement, 2016). In response, it has been noted that training for librarians must change in order to meet the changing demands of their scholarly communities (Moazeni, 2015). To date, though, we have been less successful

in expressing the direct contribution of LIS to knowledge creation in DH, and several scholars have noted the erasure of library and archival scholarship from the humanities (Caswell, 2016; Whearty, 2018). This erasure is paralleled elsewhere, due to the distributed nature of LIS research; its researchers inhabit not only departments of information studies, but are dispersed across DH centres, and departments spanning the arts, humanities, social and computational sciences. They contribute to knowledge across the academy by this very act of dispersal, while drawing on their own intellectual history, disciplinary and professional knowledge within several disciplines.

In this chapter, I will concentrate on two key questions: why is LIS as a field of study so underrepresented in the DH literature? And how are methods derived from LIS taking forward work in, and on, the digital humanities? In order to answer these questions, I will explore three interwoven topics that provide a framework for understanding the contribution of information studies: first, how communities of practice within each field are influenced by our epistemological perspectives; second, how the imbalance in recognising academic labour in DH has been addressed in the literature; and third, how user studies represent a divergence in practice that emphasises the unique, values-led contribution that scholars of information studies make to the intellectual development of digital humanities. The chapter will conclude by discussing how research inspired by both DH and information studies approaches questions of method that engage with both fields as truly interdisciplinary spaces.

Digital Humanities in the Library

The title of this chapter was inspired by a recent book, *Digital Humanities in the Library* (Hartsell-Gundy et al., 2015), which explores the role of subject specialist librarians in relation to DH. The volume makes a valuable contribution to our understanding of how specialist

library roles are adapting to changing research and infrastructural needs for the humanities in the United States of America. The conceit behind placing DH within the library is quite accurate, at least in the USA and UK. In both countries, DH centres are often physically located in close proximity to university libraries, which provide space and expertise to support DH teaching and research (Burns, 2016; Kretzschmar Jr & Gray Potter, 2010; Svensson, 2012). The continued shrinking of permanent or tenure-track jobs, and the clear intellectual overlap offered by alt-ac jobs in the GLAM sector, has led many postdoctoral humanities scholars to view the library sector as a logical home for their work. The intellectual link is clear for DH researchers, many of whom bring computational skills and work on problems that are also central to LIS:

Motivated to theorize the digital, networked information systems that they construct, those DH scholars are expressing their desire to connect their training in the humanities with theories around topics such as information organization, information behaviour, information retrieval, sociotechnical systems, human-computer interaction, computer-supported co-operative work, and information systems (Clement & Carter, 2017, p. 1395).

The result is an influx of so-called ‘non-credentialed’ librarians from DH-related backgrounds: - highly skilled researchers with relevant knowledge, but without formal accredited qualifications in librarianship – into libraries and archives. Michelle Caswell expresses despair at this influx of humanists, noting that routes into library and archival careers are sometimes viewed as an alternative for those who are unsuccessful in obtaining permanent research posts:

As if being an archivist was a fallback career that did not require its own postgraduate-level education and training. As if every act was not laden with theory. As if archival studies could not offer its own important intellectual contribution (Caswell, 2016).

Her despair is representative of a continuing pattern of decline in the number of jobs requiring Masters in librarianship over more than twenty years (Grimes & Grimes, 2008). DH is not the

cause of deskilling in libraries and archives, but it is one facet of a longer-term shift in the skills required in the information sector. Indeed, DH competencies are increasingly finding their way into the curriculum of taught library courses (Moazeni, 2015; Sula, 2013) and vice versa (Warwick, 2012). Bethany Nowviskie notes the positive aspect of this infiltration:

PhD-holding librarians and alt-ac digital scholarship staff come at their work from a certain useful vantage. They have performed scholarship and experienced our humanities collections, interfaces, and services as students, as researchers, and as teachers – in a word, as library users. They are our new colleagues, who have taken a look at librarians from the other side of the reference desk (Nowviskie, 2013, p. 58).

I will pick up on the significance of this outside perspective later, as it is characteristic of the way that LIS adopts ideas from other disciplines and intellectual traditions. Information studies can be understood as a “field of study” (Hirst, 1974), which allows new methods and theory to cross-pollinate its practice and scholarship. New epistemological practices can be transformative for research into information. As a result of these complementary forces, DH research often takes place in libraries and archives, or in collaboration with librarians, and addresses what can be understood to constitute traditional library activities (Sula, 2013, p. 17). The results of such collaborations are frequently published in major LIS journals, but it has been argued that the opposite is rarely true except in the case of studies that directly address this interaction between DH and libraries (Robinson et al., 2015, p. 46). The preponderance of such studies demonstrates that the significance of DH for libraries is firmly established.

What, though, if we flip the sentence around and ask not what DH is doing in the library, but what LIS *as a field of study* is doing in DH? The spaces, and practices, of our libraries are in

the process of being reordered, but a glance at the DH literature suggests this process is unilateral. Theories and methods that define the “meta-discipline” of information studies (Bawden, 2015) are underrepresented in relevant areas of DH, but a similar erasure has not occurred for computer science, literature, or history. When Borgman, for instance, asked where the social sciences are in DH, she referred to the body of work “that has informed the design of scholarly infrastructures for the sciences, and is a central component of cyberinfrastructure and eScience initiatives” (2009) rather than cognate work from information studies. This is despite the presence of several leading DH scholars that have a background in libraries. This chapter will explore the methodological implications of that erasure.

Hierarchies: Where is LIS in the Digital Humanities?

My reversal addresses the uneven relationship between DH and LIS, whereby it is assumed that the former acts upon the latter, performing fundamental change upon a physical institution and its staff. Focusing on how DH changes the library fits the normal order of technological discourse whereby it is often assumed that the new, seemingly more complex innovation must inevitably enact transformation upon the traditional institutions that it operates within, and upon. By adopting this narrative, we produce echoes of an outdated academic hierarchy that positions library and archival staff as in servitude to the ‘real’ academic business of knowledge production (Rockenbach, 2013, pp. 4–5). The digital humanities have begun to redefine how the library operates as a space for scholarship, by entering its physical and virtual spaces; its jobs; its curriculum; and its publications. The library is thereby judged by the extent of this alteration. Sarah Buchanan, however, provides a note of difference to this link by presenting DH and libraries in a bilateral process of knowledge exchange. She describes the relationship thus:

It recasts **the scholar as curator and the curator as scholar** [original author's emphasis], and, in doing so, sets out to reinvigorate scholarly practice by means of an expanded set of possibilities and demands, and to renew the scholarly mission of museums, libraries, and archives (Buchanan, 2010).

Despite this, there is an imbalance in the terminology applied to each field by many writers. They recognise the broad practice-based contribution of librarianship to DH – in teaching (Burns, 2016; Green, 2014); facilitating research (Sula, 2013); and resource creation and training (Hauck, 2017). But Hauck's description of the direct involvement of library staff, for instance, is typically self-effacing: "librarians are encouraged to contribute their skills to digital humanities projects as full partners doing what they already do quite well" (Hauck, 2017, p. 435). *Quite well*. Compare this modesty with the language used by Buchanan to describe DH: "revolution," "fundamental reshaping," "transformative" (2010).

Michelle Caswell's work has become a recent touchstone because it addresses the erasure of archival studies scholars from debates in the humanities. She argues that humanities scholars view "the archive" as a theoretical space in relation to the systems and structures of Foucault, or Derrida's death drive; whereas archival scholars focus on archives as a plural representation of "the archival":

For archival studies scholars and practicing archivists, archives – emphasis on the "s" – are collections of records, material and immaterial, analog and digital (which, from an archival studies perspective, is just another form of the material), the institutions that steward them, the places where they are physically located, and the processes that designated them "archival" (Caswell, 2016).

As a result, there are two parallel tracks of discussion into archives, and the fields are not taking part in the same conversations, establishing a shared language, or benefiting from mutual exchange of ideas. Caswell diagnoses this as a failure of interdisciplinarity in relation to archives for humanities scholarship. This failure leads to gaps in vocabulary, citation practices that reinforce the status quo, and a resultant inability to engage with the specific interventions of information studies in a truly interdisciplinary conversation. The following section will address how the nature of interdisciplinarity is itself a product of how each community of practice has emerged and cohered around particular intellectual structures.

What does it mean to be an interdisciplinary field?

Vakkari notes that “to define universals is always an effort” (1994, p. 1). Indeed, the process of arriving at a universal definition of DH has been a key challenge for the field. The definitional drive of DH seems to continue unabated, with each new attempt filtered through the disciplinary or methodological frames of the definer. Here, though, I have shied away from the idea of universal definitions of LIS and DH, and focused more on the multiple spaces they inhabit – on *how* they operate as interdisciplinary fields. Klein’s broad synthesis of work into interdisciplinarity can assist in defining its nature and scope:

Interdisciplinarity has been variously defined in this century: as a methodology, a concept, a process, a way of thinking, a philosophy, and a reflexive ideology. It has been linked with attempts to explore the dangers of fragmentation, to re-establish old connections, to explore merging relationships, and to create new subjects adequate to handle our practical and conceptual needs. Cutting across all these theories is one recurring idea. Interdisciplinarity is a means of solving problems and answering questions that cannot be satisfactorily addressed using single methods or approaches (Klein, 1990, p. 196).

Two important points emerge from Klein's definition: first, interdisciplinarity involves solving problems with reference to a variety of methods and approaches from more than one discipline. Second, Klein emphasises that in order to cross disciplinary boundaries, it is necessary that the boundaries are defined in some form. These boundaries are derived from the values, assumptions, and methods of an academic field that give it a community identity and cohesion. DH and information studies both provide a central space for multiple disciplines to approach a shared problem, but the extent to which this is truly interdisciplinary depends on each scholar's approach.

I have focused here on definitional work that enhances our understanding of how each field operates as a convergence point for several disciplinary approaches. For LIS, the key works in this area have focused on the scope and nature of the field. Lyn Robinson, for instance, defines LIS as follows:

A field of study, with human recorded information as its concern, focusing on the components of the information chain, studied through the perspective of domain analysis, and in specific or general context is based on a rather longstanding perspective of the field, combined with more modern insights (Robinson, 2009, p. 587).

Her use of the term "field of study" is meant in the sense introduced by Paul Hirst (1974); it is indicative of a field that is focused on a particular subject or topic area, and that uses any methods or forms of knowledge that may be helpful in studying it. Most contemporary definitions of LIS are in rough alignment with Bate's claim that its focus is "the study of the gathering, organizing, storing, retrieving, and dissemination of information" (Bates, 1999).

However, Hirst's term is not unproblematic as an explanation of the field. His "field of study", as originally developed, refers to fields that are not additive to the scholarship on a topic; for instance, Hirst argued that educational theory was a field of study because it produced no unique forms of understanding about education that were additional to the fundamental disciplines (Hirst, 1966). Biesta argues that constructing educational studies as a field of study both denies autonomous disciplinary status to the field, and "locates all the 'rigorous work' within the fundamental disciplines" (Biesta, 2011). The challenge, then, is to interrogate how LIS has provided a unique contribution to their domains of knowledge. Here, Bates argues strongly for what makes LIS unique and significant:

We are always looking for the red thread of information in the social texture of people's lives.

When we study people, we do so with the purpose of understanding information creation, seeking, and use. We do not just study people in general (Bates, 1999, p. 1048).

Bawden expands upon this to propose that information studies gains its unique identity through a focus upon the human information chain, by describing it as a "multidisciplinary field of study, involving several forms of knowledge, given coherence by a focus on the central concept of human recorded information" (Bawden, 2007). As such, LIS has been a voracious adopter of methods from other disciplines. It engages with the computer sciences, through Human-Computer Interaction, informetrics, and informatics. It draws upon the social sciences through ethnography, case study research, surveys, and questionnaire research. It engages critically with the humanities by engaging with texts as theoretical spaces that are in conversation with the people that create, curate, and use them, and the interfaces through which they are presented. By noting this broad sphere of influence, we arrive with a conception of the field that hints at its unique contribution to digital humanities. We may cautiously say that the social sciences are interested in the people, and the structures, that overlap with the information

lifecycle; and that the arts and humanities are interested in studying information in relation to the outputs of human culture. LIS, though, is ultimately interested in overlapping questions that assist us to understand how information is created, transmitted, and used in a variety of contexts. It operates as a field of study that draws on a multidisciplinary tradition, in aid of a focused study on recorded information.

Despite this, the organisational structure of the field within universities is not always clear, and broad interdisciplinarity becomes a vehicle that normalises LIS practices within specific disciplines; in other words, to make them invisible within alternative epistemological frameworks. I saw this process in action first-hand in my first postdoctoral position. Despite being a trained librarian, whose PhD work spanned libraries and digital humanities, I was employed as a Research Fellow in DH, in a department of media studies. Here, my work was understood not by its difference, but by its similarity: a well-meaning colleague, explaining how my work could be made relevant to my colleagues, told me that it could be simply boiled down to ‘reception studies for libraries.’ By focusing on what they saw as clear synergies, their comment unintentionally erased the entire tradition of my field’s approach to information behaviour and user studies. Koltay, though, argues that the distributed nature of LIS within academic structures is actually a strength:

People doing work in this field are not always found in departments of that name. Even, when there are LIS departments they are to be found in different areas of the academic structure: technical schools, humanities faculties, social science faculties, business schools, etc. Neither this is a weakness. On the contrary, it is strength, because it ensures that the discipline should always find a home for itself (Koltay, 2016, p. 786).

It is a *form* of strength, certainly, that LIS, and its human practitioners, are flexible – peripatetic even – in managing to fit their careers into the structures of the modern academy. But because our research is often done under the auspices of other disciplines, it is thus adapted to local contexts and ways of knowing. As a result, it is perhaps unsurprising that pinning down the unique contribution of LIS is so difficult (Vakkari, 1994).

In this respect, information studies shares something with DH, which is famous for its lack of definitional agreement. As a field of study, LIS draws on critical and methodological approaches from across the humanities, social sciences, and computing, to inform its work. DH, too, can be understood as a field for which multidisciplinary approaches are essential. The extent to which this myriad of methods is truly interdisciplinary is contested, and some have argued that most definitions of DH have failed to fully engage with its necessarily interdisciplinary scope. Alan Liu, for instance, argues that:

Digital humanists are unlikely to come to clarity about their naming or usage conventions, and about the concepts these express, until they engage in much fuller conversation with their affiliated or enveloping disciplinary fields (e.g. literary studies, history, writing programs, library studies, etc.), cousin fields (e.g. new media studies), and the wider public about where they fit in, which is to say, how they contribute to a larger, shared agenda expressed in the conjunction and collision of many fields (Liu, 2013).

In 2011, Matthew Jockers and Glenn Worthey introduced the concept of the “Big Tent” to capture the nature of the relationship between DH and other disciplines. It was intended as a joyful expression of the diversity of DH practice, for the DH2011 conference, expressing “wonder and appreciation for the many-splendored field of DH, for its practices of creative

exuberance, for its opening of the scholarly senses to new and revolutionary ways of seeing and thinking about the humanities” (Jockers & Worthey, 2011).

The commendably inclusive big tent can also be seen as a pragmatic, flexible term that helps to give strength in numbers to a growing discipline (Terras, 2011) – but there has been a push back against the amorphous nature of the activities within that tent. The presence of interdisciplinarity relies on a visual demarcation between the disciplines in question (Klein, 1990), and DH is regularly framed as being committed to interdisciplinary work. Differing models have been proposed to explain how interdisciplinarity occurs within DH. Svensson (2012, p. 46) refers to “trading zones”, a term which describes ‘places’ where interdisciplinary work occurs, and intersectional work is carried out while different traditions are maintained. Robertson (2016) argues that DH should be viewed as a house with many rooms, with disciplines establishing their own spaces connected by various entry points and communal spaces. Both share a common desire to engage in interdisciplinary work, but with defined boundaries evident between the various disciplines. On the other hand, one implication of the big tent is that those boundaries are not always visible; and smaller fields can become embedded to the point of erasure.

In 2006, Harold Short and Willard McCarty attempted to map the extent of humanities computing, the forerunner term to digital humanities, to capture the diversity of work in the field. The resultant “methodological commons” was imagined as a series of convergence points between many disciplinary groups and modes of knowledge, focused on those methods and tools central to the practices of the DH community, including data and data structures, modelling core materials, and tools modelling formal methods (Siemens, 2016). The commons

share a logic with the field of study, in that the disciplines contribute their modes of knowledge to a central area of inquiry. Indeed, Siemens draws upon the methodological commons to propose that we can understand DH as a community of practice:

If what brings us together as a community is our practices, the notion of the methodological commons helps us understand key elements of the work we have done, our work now, and our work as we imagine it in the future (Siemens, 2016).

This community of practice sits between the methods of the disciplines of the social sciences, arts, humanities, and the physical and computational sciences. Notably, though, it excludes other fields of study including information studies. To be flippant, librarians don't get their own bubble in the methodological commons of the digital humanities.

Given that both DH and LIS can be understood alternatively as meta-disciplines, or fields of study, with theory and methods derived from a wide variety of core disciplines, that question that arises is why is LIS so poorly represented in DH, when the opposite is not true? Caswell is one of several scholars (Cook, 2006; Whearty, 2018) who argue that there is a 'refusal' to engage with library and archival studies:

Almost none of the humanistic enquiry at "the archival turn"... has acknowledged the intellectual contribution of archival studies as a field of theory and practice in its own right, nor is this humanistic scholarship in conversation with ideas, debates, and lineages in archival studies (Caswell, 2016).

This is framed as a gendered and structural failing, relating to the status of the profession as predominantly female, professional in the sense that it is not academic, and service orientated. Cook, for instance, points to the fact that in Canada, archivists were referred to as "handmaidens of historians" (2006) until the 1980s. He argues that this act of side-lining bears

similarities to the silencing of women in social and historical memory, relegated to anonymous supporters of male accomplishment:

Archivists have remained invisible in the construction of social memory, their role also poorly articulated and rarely appreciated. I might go further to say that just as patriarchy required women to be subservient, invisible handmaidens to male power, historians and other users of archives require archivists to be neutral, invisible, silent handmaidens of historical research (Cook, 2006).

DH scholars have been key contributors to work that unpicks the technical infrastructures of humanities research, providing key insights into the aspects of power, gender, and race that are associated with academic institutional hierarchies and ways of working. More importantly, many are taking steps to develop *new* infrastructures and methods in light of insights from intersectional feminist theory (Brown, Clement, Mandell, Verhoeven, & Wernimont, 2016), black studies (Gallon, 2016), and postcolonial theory (Olsen & Risam, 2016). In doing so, they foreground the absence of these voices from previous debates. The erasure of LIS scholarship is different: the voices have been present, but due to the dispersed nature of the field there has been a failure to engage directly with work that was hidden in plain sight. The flexible, fluid status of the field within the interdisciplinary commons of DH means that it is unclear to many what exactly the theory and methods grounded within LIS uniquely bring to DH, precisely because they now appear indistinguishable.

I have argued that DH and information studies can be understood as convergence points between various disciplines. Both additionally share a keen awareness of the role of service. DH has often been situated as a service centre with universities, but those in the field have worked hard to assert their own academic identity. LIS, however, is more closely aligned to

the service-oriented value system (Bates, 1999, p. 1049) that is actively embedded within the professional values of librarianship. When it comes to professional practice, this is an admirable ethos, but inadequately expresses the unique contribution of the scholarship that derives from these values. So far, I have focused on my first question: why is LIS as a field of study so underrepresented in DH? I have broken down various aspects of this question: the idea of the field of study, the place of LIS in digital humanities discourses; and the debates over the erasure of information studies scholarship in the humanities. The rest of this chapter will attempt to answer my second question: how are methods derived from LIS taking forward work in, and on, the digital humanities?

Information studies, and Values-Based Methods

Bates (1999) proposes that information studies has tended to follow the “value neutral” science or engineering model, while professional librarianship has followed a more service-based model. However, the influence of DH has helped to foreground the theoretical component of information management. Such work builds on Haraway’s idea of becoming answerable to address how feminist theory can intervene in our concepts of objectivity:

Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting of subject and object. It allows us to become answerable for what we learn how to see (Haraway, 1988, p. 583).

In doing so, DH scholars can address the theoretical subtext of systems and working practices that either assume objectivity or adopt pragmatic approaches in response to technical limitations (Drucker & Nowviskie, 2004). This has been reflected in renewed calls to activism on the part of the digital humanities. Traditionally, developing library systems, and information resources, would have been seen as service work, whereas it has been argued that the future of

DH lies in demonstrating that such service-based roles are in themselves intellectual contributions:

To be an equal partner – rather than, again, just a *servant* – at the table, digital humanists will need to find ways to show that thinking critically about metadata, for instance, scales into thinking critically about the power, finance, and other governance protocols of the world (Liu, 2011).

Liu foregrounds the importance of power structures as they relate to information systems, and Tanya Clement further addresses this point when she argues that the digital humanities have renewed calls to activism for the role of the broader humanities as a different way of looking at technological questions. The projects she cites are powerful precisely because they seek to dismantle and rebuild information systems through humanistic perspectives that focus on situatedness and subjectivity:

The authors – some of whom have published as digital humanities scholars and all of who are influenced by both information studies and the humanities – reorient seemingly objective representations of life and culture – space, time, and image – through changes in encodings, both computational and taxonomic (Clement, 2016).

The point of difference of these projects is their answerability, the act of being humanistic rather than scientific; and it is this difference that denotes the unique contribution of DH to questions in information studies. Likewise, I will argue here that a focus within LIS on the use and users of information systems is one of its key theoretical and methodological contributions to DH. The reframing of DH service as a unique intellectual contribution to academic knowledge is a point of difference to LIS, which emphasises service as a core value. This difference is evidenced by the secondary importance of users in many DH resources. Robertson, for instance, argues that “the most common use to which digital humanists,

including some historians, have put the web has been the distribution and presentation of material to other scholarly researchers” (Robertson, 2016). He notes that Kirschenbaum, for instance, responded to complaints against the usability of the *William Blake Archive* by noting that “while we are happy to have users from so many different constituencies, the site’s primary mission has always been expressly conceived as scholarly research” (Kirschenbaum, 2004). There is an element of intention to this statement: the non-scholar is not addressed directly because they are not the intended audience. It is not unusual to focus largely upon the target audience of a particular resource, even within LIS; Simon Tanner, whose Balanced Value Impact Model addresses the need to demonstrate the value and impact of digital resources through systematic assessment and evaluation, similarly defines impact in terms of intention:

The measurable outcomes arising from the existence of a digital resource that demonstrate a change in the life or life opportunities for which the resource is intended (Tanner, 2012).

Tanner provides a model for collecting data to report value to funders, government, and management. In common with work in the digital humanities, though, it is not explicitly concerned with addressing unintended audiences. It is not my intention to argue that either approach must do so, merely that instead they reflect extensively on the creation and value of digital resources while focusing on aspects of information work that engage only partially with the service-based tradition of information studies work. On the other hand, many writers from that tradition have posited service as a key value for librarianship (Finks, 1989; Lankes, 2011; Shera, 1972). They thus foreground a values-based approach that more broadly addresses the user communities of library. Ranganathan, for instance, considered the library to be a “growing organism” (1931) comprising books, staff and readers, with growth and change in any one of these groups affecting the others. In this tradition, the existence of users also demonstrates a change in how we perceive a digital resource, and by modelling and understanding information behaviour we are thereby able to illuminate aspects of change that are hidden when addressing

intention in resource creation. LIS therefore differs from humanistic approaches in that the object of attention is the user as a concrete presence – much as Caswell proposes that archivists view the archive in concrete rather than purely theoretical terms.

The Methodological Importance of User Studies in the Digital Humanities

The value of user studies, then, is to allow us to understand how user behaviour exists in conversation with other factors. By addressing users in this way, the values of library practice can both inform our research and allow us to more broadly engage with humanistic and social science questions. While I have noted the self-effacing nature of librarianship, I would argue that professional and scholarly values that encompass service-based librarianship can help to place critical constructions of the library as central in user studies of digital resources (Gooding, 2017, p. 142). In an era when digital resources are challenging our theories of who, or what, a user might actually be, information studies can identify who those users are in reality, what behaviours they are engaged in, the methods they use in their work, and their current and future information needs. Gorman and Clayton define the case study as:

An in-depth investigation of a discrete entity... on the assumption that it is possible to derive knowledge of the wider phenomenon from investigation of a specific case or instance (Gorman & Clayton, 2005, p. 47).

User studies are built on the logic that although each user is an individual, there are common activities undertaken by researchers (Unsworth, 2000) that allow us to study information behaviour within a defined community (Bawden & Robinson, 2013). For this reason, it is common to adopt a case study approach for researching information behaviour.

I have previously argued that exploring the development of information behaviour in relation to digital resources is a complex task that relies on a multifaceted approach to collecting and analysing data (Gooding, 2017). Others have also warned of the weakness of narrow approaches to data collection, which risk providing an evidence base too narrow to derive meaningful analysis of wider socio-cultural aspects of information sources. This limitation extends to a reliance on solely qualitative, or quantitative research methods:

Whereas qualitative techniques alone risk missing the big picture due to their necessary small-scale nature, quantitative techniques risk being superficial or misleading if they are not complemented by supporting qualitative analysis (Thelwall, 2009, pp. 1–2).

Thelwall's insight applies particularly to the narrow adoption of methods for analysing user behaviour online. Web log analysis has been adopted as a common method of data analysis and applied to several studies of digital resources in the humanities (Gooding, 2016; Warwick, Terras, Huntington, & Pappa, 2008). It is a relatively unobtrusive way to track real user behaviour without bias being introduced by a researcher through interviews or observation. As part of a larger group of webometric methods, web log analysis thus provides a direct method of what people have actually done, rather than what they remember doing or what they believe they do. However, adopting a data-driven approach can make it difficult to derive deeper insights into the relationship between a digital resource and the broader information practices of a user community:

Studies which rely solely on webometrics inevitably understand user behaviour in terms of the website infrastructure rather than as a mediated relationship between user and content. Webometric analysis can only reveal how a website is used and not the motivating factors which encourage a user to return or leave without engaging (Gooding, 2017, pp. 82–83).

Thus, while web log analysis provides robust insights into user behaviour, mixed methods approaches are better suited to developing theoretical and practical models of information behaviour. The empirical tradition of library research, which arguably emerges from a historical view of information work as a profession in the positivist tradition, has given way over time to a pragmatic acceptance that mixed methods are vital to allow deeper insights to emerge by placing methods in conversation with each other. This methodological triangulation is accepted as a valid approach to case study research, where the research method regularly drives which methods are adopted for a particular study. Triangulation of methods in LIS therefore works something like the macroanalytic lens in the digital humanities, by allowing us to adopt both macro- and micro-level perspectives to a case, or cases.

This approach has informed several studies that relate to digital resources and the digital humanities. The ones I draw attention to here either provide models for evaluating digital resources (Tanner, 2012), or undertake evaluation of specific resources (Hughes, Ell, Knight, & Dobрева, 2015; Meyer & Eccles, 2016; Warwick et al., 2008), and all adopt mixed methods approaches that include various forms of web log analysis, stakeholder interviews, focus groups, qualitative and quantitative surveys, and citation analysis. These studies constitute a large subset of work within the digital humanities and demonstrate that deep methodological engagement with the question of the user is a key characteristic of LIS work in the digital humanities. One way, then, of approaching problems through an interdisciplinary DH/LIS lens that is specifically ‘information studies’ in nature, is to adopt a focus on the user that is absent from so much work in the digital humanities. In this work, the user is both an abstract concept for theorisation and an individual member of a concrete user community relating to a specific resource. But what insights into the user community can this approach bring? What happens when we view the user not as a recipient of the tools created by digital humanists, but as an

individual within larger social, economic, and professional structures that sit outside the structures of the academy? By way of illustration, I will briefly elaborate on my own work in this area.

During my PhD, I undertook case studies of users of two digitised collections; The British Library's Nineteenth Century Newspapers (BNCN), and Welsh Newspapers Online (WNO). Inspired by user studies in digital humanities, I adopted a mixed methods approach which incorporated web log analysis, citation analysis, surveys, and interviews. Initially, I focused on the 'intended community' for digitised newspaper collections: the academic community, and particularly historians. However, during the user survey, I received several responses that forced me to realign how I approached my research question. A distinct user group, precariously employed academics, noted concerns about their ability to access the paywalled BNCN between contracts. Some expressed disappointment that they would have to pay for the resource at the precise moment they could least afford it, while another related the problem to larger issues with accessing scholarly materials while between academic posts: "once I'm no longer employed, how am I to keep up with research to get another job when I can't afford access to sources and journals?" (Gooding, 2014, p. 283).

Whereas my initial research questions adopted a narrow perspective of the user, these responses inspired me to investigate the personal and social factors that affect access to digitised resources. Access is a function of an individual's geodemographic status (Harris, Sleight, & Webber, 2005), so I set out to gather and map demographic data that related to access to digitised newspapers. The visualisation built upon a single point of logic derived from the work of geodemographics:

While the location of individual users gives us a superficial idea of where people are using a digitised collection, it tells us nothing about their socio-economic status. Instead, grouping users together based on their demographic status allows us to discover general information about that population to compare them to other distinct populations (Gooding, 2017, p. 253).

There are huge individual benefits to being allied to information rich institutions, so we must bear in mind that an access map built upon individual location tells us nothing more than where those who definitely have access are located in the world when they take advantage of that access. We learn nothing of those who are deprived access, and little about the demographics of those we study. This led me to conclude that, for subscription resources, the single strongest indicator of an individual's ability to access digitised newspapers was their institutional affiliation. As a result, I could identify geographical trends in relation to accessing institutions. I could also group communities of users based on extant demographic data relating to each institution. I therefore collated a list of subscribing institutions for two key subscription digital newspaper resources: BNCN, and the Times Digital Archive. The main subscribers were global tertiary education institutions, major national and research libraries, and public library services in the United Kingdom. I geocoded these institutions: specific university and national libraries became node points, and public library services represented the entire geographical area they served to reflect the presence of multiple physical access points. I then compiled detailed demographic data from extant datasets: for HE and FE institutions, I gathered statistics for student populations, budgetary information, and university rankings; for public libraries, I included regional populations; total library spend per capita; and indices of relative deprivation from the UK government (2011).

My results found that there were genuine inequalities in access: the ability to access a chosen resource correlated closely with those universities with the highest reputations, budgets, and

student communities. Similarly, free access to digitised newspapers in UK public libraries correlated strongly to the most populous, least deprived areas where individuals already benefited from more expansive life opportunities on average. I chose to describe digital resources as “unequally free”: a term that recognises that digital resources are often free, but “only if you meet certain criteria such as membership of a specific organisation or residence in a particular location” (Gooding, 2017, p. 163).

My work to map the use of digitised newspapers, then, fits the model of the field of study in that it draws upon multidisciplinary perspectives. It draws on work in the digital humanities to inform visualisation, both through the underlying technical method, and by focusing on deconstructing the human implications of a particular dataset or tool. In doing so, it restructures the task of mapping usage of digital resources away from questions of individual mobility, and towards the geodemographic implications of the structures that users work within. By adopting a user-focused, rather than resource-focused approach, it also accounts for the possibility that questions may arise that require us to go beyond the intended community to explore broader implications for precariously employed researchers, non-academic users, and non-users. I chose this work, which sits within the established methodological tradition of user studies in digital humanities, not because it is the best, or the only, example of such work. Instead, it demonstrates how user-focused perspectives from information studies can broaden our analysis of the tools and infrastructures that constitute so much digital humanities work. It also emphasises that library values are derived from a long body of theoretical work in LIS, in the same way that other work in DH applies theoretical and critical perspectives from other domains that have been underrepresented in humanities scholarship. In doing so, we can see how a study informed by both DH and LIS can broaden the questions we ask of our information

systems, our digital resources, our computational tools, by grounding work in a productive debate between humanistic theory and the social and human applications of these technologies.

Conclusion

I have argued here that information studies and digital humanities share several characteristics: they both encompass research questions relating to the lifecycle of recorded information; they both operate as a field of study, or a community of practice, that derives methods from several disciplines; and they are both methodological in nature. This shared interest has led to productive interdisciplinary work by many scholars whose work spans the intellectual tradition of both fields. Despite this, work from LIS is underrepresented in much of the DH literature: its sources are not cited; its epistemological foundations, where addressed, are represented as practice-based rather than intellectually derived; and there continues to be a focus on the ‘Digital Humanities in the Library’. It is clear that DH has had major implications for libraries that justify this focus: several prominent researchers are undertaking exciting work into information studies problems that incorporate the intellectual impetus provided by digital humanities. However, this chapter has laid out a methodological, and an intellectual, contribution for what LIS does extremely well: translating its service-based values into epistemological and methodological approaches that can broaden the focus of research into information systems in the digital humanities.

I have interpreted the values of information studies to be centred on the library as a service, with a resultant desire to identify user communities in order to tailor this service according to identified needs. We can see this reflected in work that spans DH and LIS: these interventions

address the ways that varied methodological approaches to user studies that can inform how we develop digital resources, interpret their value and utility, and understand how they intersect with changing models of user behaviour. This is distinct from work derived from DH, which is often about the implications of humanistic thinking for the development of digital resources and infrastructure: for instance, the scholarly process of “building” hermeneutic tools that incorporate humanistic methods; and the application of theory to the development of tools and infrastructure. I would sound a note of caution here: in arguing for the importance of research driven by the longstanding values of the library profession, we must also be open to the idea that this epistemological framework is not universal. The user is *not* at the heart of some work, and neither must it be to make it robust and meaningful. The definitional impulse of DH struggles to reach consensus precisely because it is far from simple to determine a universal set of values that define the field. Instead, I will conclude by proposing that we need to be explicit in addressing the values, and the disciplinary traditions, that underpin work in the digital humanities: rather than agreeing on universal values, we must be clear what our own values are, and how they might speak to specific communities of practice more than others. Claire Warwick is not alone in arguing that the big tent model for DH has led to a culture of niceness that can stand in the way of developing effective communities of practice with distinct focuses and values:

It may be that DH will have to let go of our ideas of niceness and methodological agreement, and accept the likelihood that different schools and methods of doing DH will emerge. This may entail public battles, schisms, and regroupings, but it does not necessarily threaten the integrity of the discipline; it may even be a sign of strength and confidence (Warwick, 2016).

If we choose to consciously address how and where DH scholars differ in their approaches, we can better understand the nature of interdisciplinarity when applied to DH work. Our methods,

and objects of study, bring us together as a community, but this understanding necessitates truly interdisciplinary collaboration, in Klein's (1990) sense that interdisciplinarity still recognises disciplinary boundaries. A culture of co-citation, and co-reading (Whearty, 2018), is similarly necessary to address multilateral modes of enquiry. However, I do not see this driving us apart: instead, I hope that by providing a clearer sense of how different communities of practice make a distinct contribution to our shared literature, we will be better positioned to recognise not just the labour of librarians, but also the intellectual contribution that information studies makes to the digital humanities.

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i The library job market has been covered extensively in the literature, from the “Shambrarian” through to the role of formal Masters programmes in Librarianship (MLS in the USA).