An Overview of the Digital Humanities

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I n 2008, Ammon Shea published *Reading the OED: One Man, One Year, 21,730 Pages*. The book chronicled his effort to read the whole of the *Oxford English Dictionary* in one year. In his review in the *New York Times*, novelist Nicholson Baker characterized Shea's work as "oddly inspiring." Baker went on to observe that "Shea's book resurrects many lost, misshapen, beautifully unlucky words—words that spiraled out, like fast-decaying muons, after their tiny moment in the cloud chamber of English usage. There's hypergelast (a person who won't stop laughing), lant (to add urine to ale to give it more kick), obmutescence (willful speechlessness) and ploiter (to work to little purpose)—all good words to have on the tip of your tongue," Baker wrote, "when, for example, you're stopped for speeding."[1]

Here, I want to focus your attention on a phrase that is not "misshapen" or "beautifully unlucky," and its utterance will certainly not impress a traffic cop. However, it is a phrase that is enjoying a vigorous moment in the "cloud chamber of English usage," at least in the chamber that many scholars, librarians, and academic technologists now frequent. I refer to the much-used but ill-defined phrase, the "digital humanities."

Defining Features of the "Digital Humanities"

If the advantage of a standard is that there are so many from which to choose, then the same is true of the definition of the digital humanities. Each year since 2009, the sponsors of the annual Day in the Life of the Digital Humanities event have invited participants to respond to the question: "How do you define the digital humanities?" One senior scholar wrote simply, "I try not to." However, there are now hundreds of attempts at a serious answer on three different websites.[2]

Some of these scholars make the case that the digital humanities is an interdisciplinary field in which computer scientists and humanists find new questions to address at the intersection of their respective specialties. Unfortunately, I have found little evidence to support this definition. As a program officer at the Mellon Foundation, I have spoken with and provided funds for numerous humanistic scholars in various fields of study who have looked for common ground with computer scientist collaborators. They have all been quite clear that they were not seeking to create or participate in a new field of specialization. Rather, they were merely undertaking the normal process of negotiating the terms of a partnership.

In the compilations, there are also definitions that evade the enumeration of distinctive features but focus instead on the effects, or the desired effects, of the digital humanities. An example of this approach can also be found in a self-styled manifesto recently published by the MIT Press. The authors say that "Digital Humanities refers to new modes of scholarship and institutional units for collaborative, transdisciplinary, and computationally engaged research, teaching, and publications."[3] They provide a useful inventory of new modes of scholarship that include augmented scholarly editions, so-called distant reading, and virtual reconstructions.[4] However, in what ways are collaboration and transdisciplinarity distinctive to or

characteristic of the digital humanities? There is considerable irony that this collaborative work published in traditional print format by authors from several different disciplines is silent on this essential question.

Kathleen Fitzpatrick, an English professor who currently serves as the director of scholarly communication for the Modern Language Association, is one who has dared to offer a straightforward definition of the digital humanities. She defines the digital humanities as a specialist interdisciplinary area that can be characterized by (a) asking traditional and sometimes new humanistic questions using digital resources and methods; or (b) subjecting computing technologies to interpretation and critique by humanistic methods and strategies of questioning.[5] This definition usefully recognizes that multiple senses sometimes attach to the meaning of words. In this case, the first or primary sense emphasizes the use of digital methods in scholarly inquiry in the humanities; the second sense highlights critical questions about the increasing pervasiveness of digital networks and media in human discourse and social interaction.

Not all scholars are comfortable with the semantic complexity of multiple sense definitions. Let us concentrate for a moment on the second sense that Fitzpatrick identified in her definition. Inspection of the social and cultural dimensions of "the digital" milieu raises important questions including: the nature of contemporary social roles and identity; the meaning of privacy in a culture of government and corporate surveillance of personal behavior and communications; and the new forms of relationships between capital and labor, such as those that exist when wealthy Internet firms benefit from (or exploit) contributed information or unpaid work under the guise of activities such as so-called crowdsourcing. Scholars who are pursuing these increasingly important and serious questions clearly qualify as digital humanists under the second sense of Fitzpatrick's definition, but it is a matter of recent debate whether these activities are really sensible to include under the rubric of "digital humanities."[6] I wish to avoid the heat of these discussions by acknowledging that the meaning of the digital humanities in this sense is simply different from the primary sense identified in Fitzpatrick's definition and that care needs to be taken when using the term to ensure that subjecting "the digital" to critique from various perspectives in the humanities is not confused with study in the humanities that employs digital tools. Scholars may, of course, engage in both pursuits, but one activity does not imply or require the other.

When we subject the various definitions of digital humanities to scrutiny, it is thus hard to escape the conclusion that the primary sense of the term is as Fitzpatrick clearly defined it. That is, the central, defining feature of the digital humanities is the application of digital resources and methods to humanistic inquiry. I predict that the phrase "digital humanities" will not long endure in what Baker calls the "cloud chamber" of usage, but to understand the contemporary significance of the phrase, one can reasonably ask: What about the application of digital resources and methods deserves such special attention at this moment in time? Why, unlike other forms of humanistic inquiry driven by other kinds of methodologies, do the digital humanities require a special marker? Why is it necessary for our colleagues to invoke the digital humanities as if they were raising a flag to signal their allegiance to a particular cause? What exactly is the cause that they are flagging?

Corollary Features of the "Digital Humanities"

One can easily observe the overwhelming evidence that reliance on digital tools and methods is not only increasingly pervasive and powerful in the humanities but necessary simply to deal with the fire hose of scholarly evidence that has been converted to digital form or is natively digital. Yet, respected scholars like Anne Burdick and her colleagues in their recent MIT Press book repeatedly aver that "the **mere** use of digital tools for the purpose of humanistic research and communication does not qualify as Digital Humanities"[7] (my emphasis). What more needs to be added to what I have just argued is the primary, concise meaning of the "digital humanities"?

Perhaps the aversion of practitioners and observers of the digital humanities to such a concise definition is that we have only recently emerged from an era in which critical theory dominated the humanities and downplayed, as a lesser form of scholarship in the humanities, any emphasis on methodology in the handling of evidence. The retreat under critical theory from any serious treatment of these kinds of methods in the humanities has thus left many in the field with an impoverished vocabulary about the subject, and this weakness is manifest in many discussions of the digital humanities. Part of the definitional problem is that more needs to be said about the nature of the tools and methods for interrogating evidence in the digital humanities.

Fortunately, some scholars have begun systematic efforts to rehabilitate an understanding of the use of methods for evidentiary materials in the humanities. One of them is the distinguished medievalist, Stephen Nichols. In a recent article, Nichols draws on the work of philosopher John McDowell[8] and makes the distinction between "how possible?" and "why possible?" questions. "How possible?" questions are the province of engineering and the sciences. "Why possible?" questions, according to Nichols, are the foundation of the humanities because they "underlie most great literature, philosophy, history, and even theology…"[9]

What is the significance of this distinction for an understanding of methods in the digital humanities? Nichols criticizes Burdick and the co-authors of *Digital_Humanities* for conceptualizing methods primarily in terms of engineering and the sciences, which typically operate in the service of "how possible?" questions. Instead, research in the humanities requires tools and methods that are appropriate to "why possible?" questions.[10] Relying on the work of another philosopher, Richard Rorty,[11] Nichols emphasizes that the objects of study in the humanities are characterized by "contingency" and "irony" rather than truth or falsity, and require specialized methods. These methods are, in the words of Rorty, "experimental, nondogmatic, inventive, and imaginative." Disciplined, but not necessarily rule-based, they involve the application of "critical intelligence."[12] As Nichols summarizes the argument: "why possible?" questions "inform the dialectic between the inquiring mind and the object of investigation that critical intelligence engages when it thinks through and with contingent and ironic—that is to say, aesthetic—objects."[13]

If we accept the basic distinction that Nichols makes between methods in the service of "how possible?" questions and methods in the service of "why possible?" questions, then our understanding of the digital humanities is enriched if we are then able to begin to create a typology of the disciplined methods and

tools associated with the application of critical intelligence in various kinds of humanistic research. Just as critical theory became ascendant, at least three strands of serious and complex research were emerging, each of which required methods of applying "critical intelligence" specially suited to their objects of inquiry. These three strands correspond roughly to what many refer to as the linguistic, visual, and spatial turns in humanistic research, and each began intersecting with the capabilities of digital tools roughly at the same time in the late 1980s and early 1990s. They accelerated into the 21st century with the rapid growth of the Internet.

Like most people, digital humanists tell stories about their origins as a way of elucidating the essential features of their identities and roles. Digital humanists tell multiple origin stories. One refers to the Italian Jesuit scholar, Roberto Busa, who persuaded IBM in 1949 to help him produce the Index Thomisticus, a critically important, automated concordance of the works of Thomas Aquinas.[14] A second is the story of the birth of the legendary Institute for Advanced Technology in the Humanities at the University of Virginia in the early 1990s. The Adam and Eve in this story were Jerry McGann's Rossetti Archive[15] and Ed Ayers's Valley of the Shadows project.[16] McGann's project was an innovative, online form of criticism of the textual and visual works of Dante Gabriel Rossetti, the important 19th-century writer, poet, and artist. Ayers's project, which compared neighboring towns that allied themselves with different sides during the Civil War, was one of the first historical projects to combine textual analysis with online mapping to great effect. A third origin story gives credit to Bob Stein, the brilliant innovator and information designer, and the scholars who collaborated with him in using the compact disc medium in the late 1980s and early 1990s to produce a series of interactive, multimedia, scholarly companions to such works as Beethoven's Ninth Symphony and Shakespeare's *Macbeth*.[17] Copies of one or more of these works were included with virtually every personal computer sold at the time.

These origin stories anchor the digital humanities and their tool sets and related investigative processes in three broad areas: textual analysis, spatial analysis, and media studies, which has become focused more specifically on visual studies. As a rule of thumb, those who refer to the digital humanities, or to the use of digital tools and processes in humanistic study, are almost always pointing to activities and the types of tools needed in one of these three areas. At the risk of great simplification, let me sketch briefly the intellectual history that explains why this is so.

In language and literary studies there has been a long-standing interest in counting and collating words, parts of speech, and named entities. However, literary criticism stayed largely divorced from these activities until 1983 when Jerry McGann published *A Critique of Modern Textual Criticism*.[18] With ammunition assembled in part during the 1960s and 1970s by Continental and especially French philosophers, anthropologists, and literary critics, McGann dropped a bombshell on the field by challenging the prevailing assumption that scholars could explain textual variation principally by reference to the author's creative intentions. He argued persuasively that social, institutional, and collaborative factors in the process of textual production also need to be taken systematically into account. In the wake of the *Critique*, a variety of alternative paths for literary study opened. McGann himself led the way, and began to experiment with digitization and markup languages and other forms of computational analysis. The emergence of HTML and the web was a godsend and allowed him to

represent texts in ways that made it easier to identify, explore, and communicate his social theories of textual variation. Other scholars began vigorously exploring new, online ways of conceptualizing and representing scholarly texts. Under the general rubric of "humanities computing," a predecessor to the digital humanities, there emerged numerous sophisticated experiments in online textual analysis in a variety of literary fields, including the *Beowulf* and *Boethius* projects,[19] the Women Writers Project,[20] and editions of Piers Plowman,[21] Chaucer,[22] Dolley Madison,[23] and Walt Whitman,[24] to mention just a few.

Multiple facets of spatial analysis also converged with the emergence of the Internet. Computer-based geographical information systems, or GIS, emerged in the 1960s and captured the attention of a subset of geographers, whose studies benefited from the ability to quantify data and represent it in a spatial field. Other geographers dismissed GIS as mere technique and the dispute was so severe that it helped contribute to the dissipation of the field as many institutions eliminated departments of geography and placed their geographers in other departments. Meanwhile, GIS systems became easier to use and offered broader functionality that began to appeal to more than those scholars interested in quantification of spatial information. Archaeologists especially embraced the technology as an essential tool kit for representing and studying their evidence. Historians like Ed Ayers adopted mapping strategies that were not mere technique but helped uncover and represent essential social, political, and economic relationships. Harvard historian, Michael McCormick, undertook an even more ambitious project. He "re-mapped Europe from 300 to 900 CE, showing the connection between developments in communication and transportation that scholars previously studied in isolation."[25] With the even further simplification of spatial tools like Google Earth and virtual reality software for simulating real and imagined worlds, spatial analysis has become essential in urban studies and architecture and is being used not only to design new models of the built environment but also, as Bernie Frischer did in his Rome Reborn project,[26] to reconstruct and understand environments that may no longer exist or survive only partially.

Like textual and spatial analysis, media studies has undergone a substantial theoretical reworking. It now focuses primarily on visual media. Images in the form of photographs, film, television, and computer visualization have become so deeply woven into the fabric of modern reality that the contemporary human condition cannot be understood without "an account of the importance of image-making, the formal components of a given image, and the crucial completion of that work by its cultural reception."[27] To provide this account, visual studies now calls on and embraces a range of intellectual traditions including art history, anthropology, and psychology. Moreover, the scholarly tool kit must include a suite of specialized digital tools including various kinds of visual representations, both because the visual objects of study are digitized or born digital, and because words alone may not be sufficient to understand visual evidence and communicate an argument about that evidence.

As many broad rubrics do, the category of the digital humanities thus covers, and sometimes masks, a good deal of complexity. Once you see the divergent threads of tool-based intellectual pursuits of "why possible?" questions in the textual, spatial, and visual areas that have come together under the digital humanities rubric, you can understand the resistance of digital humanists to being dismissed as embracing pure method. The tools and processes they embrace and develop are mixed up in and not

easily separated from the related intellectual pursuits. The further lesson is that there is no single set of so-called digital tools, but multiple sets aligned along broad methodological lines, and the vision of integrating them in a single environment or infrastructure cannot be achieved simply. Such integration is a long-term not a short-term vision.

Future Prospects

I hope that by defining the digital humanities as the application of tools and processes to the "why possible?" questions of humanistic inquiry, and then by offering a typology of these tools and processes, I have been able to inject some clarity into this complicated topic. But what does this definitional framework suggest for the future trajectory of the digital humanities? Let me conclude by summarizing recent interventions by the Andrew W. Mellon Foundation and suggesting several areas that colleges and universities, and particularly their libraries, might consider for possible additional investment.

The Mellon Foundation has been vigorous in its interventions in textual studies and it has been trying to align its investments in tool making with the promise that they will advance in classical, medieval, and early modern studies compelling questions such as structure and reception of texts and the development of new genres of writing. I note in passing that Jerry McGann received a Mellon Distinguished Achievement Award that recognized in part the transformative effect he had on the practice of textual studies. Mellon's investments in spatial analysis have concentrated largely on archaeology and architectural history, especially the scholarly use of virtual reality tools. Ed Ayers is still pursuing his interest in spatial history, and the University of Richmond, where he is currently president, recently received a grant in Mellon's higher education program to help support this work. Several distinguished achievement awards also have recognized spatially oriented accomplishments. Harvard's Michael McCormick, whom I mentioned earlier, received one, as did Richard White at Stanford, who has been working on the historical geography of railroads in the US. The foundation has also recently launched an initiative on urbanism and architecture that falls broadly, but not exclusively, into this area of spatial analysis. In the domain of visual studies, Mellon has made substantial investments in ARTstor, and made a variety of grants to support performance studies, as well as the development of tools for visually based publications, such as Scalar, and for visual pattern matching.

Going forward—as centers of humanistic research and teaching—universities, their libraries, and academic presses must support the digital humanities, but where should they place their emphasis? I would suggest, first, that it is critically important that they be alert to the particular strands of research being pursued. The staffing, equipment, and related requirements for literary, visual, and spatial analysis are quite distinct. When single institutions cannot afford to cover all areas, there is plenty of room for division of labor. I would note that two grants that Mellon made at the end of last year focused on the institutional requirements for supporting the digital humanities and the potential for developing specialized, collaborative centers.

Second, the preservation of digital media is a critical area of research and development across the three broad areas of textual, spatial, and visual analysis.

Third, there is also an increasing need for certain kinds of tools or infrastructure that span the three areas. These include tools that support the basic scholarly process of annotation. Across all these areas the identification of named entities, such as people, organizations, and places is an important objective. The development of online databases of personal names (including prosopographies) and place names (such as gazetteers) will require continued support.

Fourth, investments in tools for textual analysis are now well advanced. While new understandings continue to be achieved, there is a growing imperative for the immediate future to concentrate more fully on tools that facilitate visual and spatial analysis, and to investigate audio and other areas that are emergent and do not fall in the three broad areas that have developed historically.

Fifth, a high priority remains to understand the requirements for publishing and curating scholarly products in these areas and building the necessary capacities in cultural and academic organizations for these functions.

Finally, the training of scholars and students to understand and engage imaginatively in tool-based modes of intellectual pursuits is a further imperative. Fellowships of various kinds are an important vehicle. But we must also think broadly about curricular interventions, for it is only when the tools and processes for answering "why possible?" questions are reliable enough to be introduced to and used productively by scores of students at once that the digital humanities could be said to have reached maturity.

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