

Introduction to the Digital Humanities



DEFINITIONS

What are the “digital humanities”? Ask a physicist to define *gravity*, and she will most likely first reply with a brief textual description about forces and masses in the universe and then present a formula. Ask an economist to define *poverty*, and he might refer you to the U.S. Census Bureau’s lists of scales, rates and other metrics. But ask a humanist to define *peace*, and she will turn first to the dictionary and then to a brief historical survey of how the word evolved, from what languages and therefore from what historical contexts and developments. She might then proceed to construct a narrative based on available written records. She would do these two things because the humanist, unlike the physical or social scientist, deals not with the objects and forces of the natural world or with large abstractions like social groups and economic trends but with language, its origins, constructions, development and perception over time. The very core of humanistic study is to seek out origins and to interpret how we use language – including the language of the visual arts, music and architecture – to understand the world that humans have created. All humanistic study begins and ends with language, its meaning and its ability to bring the past alive.

How then do we understand the *digital humanities* – a term widely used in administrative, scholarly, library and information technology (IT) circles but rarely defined in any specific way? What exactly do these partners – the digital and the humanities – have to do with one another? Many people look at the marriage and come away with very different impressions, all from their own perspectives. One can analyze the term’s exact meanings from several different points of view, conditioned by historical and contemporary thinking and practice. Many have very firm

opinions on what they consider a closed case; others have yet to determine some of the most fundamental questions around that term.

For example, what were, are and will be the humanities in Western, and now world, culture? What is the role of the digital within the academy, in scholarly communication and in the humanistic disciplines as a whole? Are the digital humanities a series of practical approaches? Are they a specific theoretical frame that is nuanced within each disciplinary approach? Are they a distinct discipline with its own set of standards, distinguished researchers, hierarchies and rules of engagement? Are they a set of ad hoc working arrangements between traditional humanists in various disciplines and IT departments or teams on campuses and in research centers?

Or even more far-reaching, is the term *digital humanities* a redundancy? That is, are the humanities, like all contemporary scientific research and teaching, already digital to all important extents and purposes? Or – an even more vexed question for professional humanists – has the arrival of the digital forever changed the way humanists work, in the way they gather data and evidence or even in the very questions that humanists and the humanistic disciplines are now capable of posing? Is technology determinative? What role does the solitary scholar – the centuries-old model of the humanist since Petrarch – have in a digital environment that is increasingly collaborative, data-driven, report-oriented, ephemeral, “social” and unmediated?

Some quickly dismiss such questions and concerns with what was essentially the response of the Prince of Salina in Lampedusa’s *The Leopard*: “Everything must change so that everything will remain the same.” That is, we could easily fit the digital revolution into a set of historically determined metaphors and similes: the digital revolution is Gutenberg updated, the changes in the digital book are “like” the changes from the scroll to the codex or from the codex to the printed book, the rapid social and economic changes brought about by the World Wide Web are “like” the rapid changes brought about by print in the fifteenth century. And so on.

But twenty years after the digital revolution was born, we may no longer be able to rely on comfortable metaphor and simile: something has fundamentally changed in the way the digital accesses, preserves, aggregates and disaggregates, presents, privileges and reflects back upon scholarship that may leave old categories behind and change the way even Petrarchan humanists think, do research, author, publish and interact with their own communities. To examine these changes, we should,

like all good humanists, turn back to history: the recent and relatively brief history of the digital and the far longer history of the humanities themselves.

Over the years, and particularly over the past decade, humanities scholars have collaborated with computer scientists to build tools that facilitated the work of the digital humanities. However, scholars generally date the beginnings of this collaboration to 1949 when Roberto Busa, an Italian Jesuit and theologian, approached Thomas J. Watson, founder of IBM, seeking help in indexing the works of Thomas Aquinas. Busa was successful, but he was not alone in seeking to harness computing power to the work of humanistic scholarship. Nor were search engines and word counts his aim: that was a “doctrinal interpretation” of Aquinas’s theology and moral philosophy. The digital was a means to the qualitative improvement of the humanist’s moral goal.¹ In the process, however, Busa and Watson demonstrated that the search-and-sort functions of the computer were compelling tools for certain aspects of research. Storage and retrieval appealed equally so. From that time the worlds of the humanities and of computing were intertwined first in experimentation and then in efforts at creating a sustainable infrastructure for humanities scholarship.

The intersection of the humanities and the digital created an environment in which the humanities became subject to new approaches that raised issues about the nature of the humanities while also opening up new research methods. The array of platforms, applications, techniques and tools, all developed under the rubric of “digital,” have been dramatically changing the way that humanists work, how they do research, gather information, organize, analyze and interpret it and disseminate findings. How does the digital affect this basic work? While some believe that the digital is fundamentally changing the work of the humanist, others continue to believe that the digital merely helps humanists to work better. Some even believe that the digital may be undermining the fundamental nature of this work. Many humanists tend to view the digital humanities as a methodology that brings the tools and power of computing to bear on the traditional work of the humanities. Computer scientists tend to view the digital humanities as the study of how electronic form affects the disciplines in which it is used and what these disciplines have to contribute to our knowledge of computing.

Let us therefore start with some basic definitions. A chapter in the recent *Debates in the Digital Humanities*² offers twenty-one definitions culled

from a far longer online list; this is a provocation as part of the “debates” around digital humanities. But let us try to settle on something less controversial from a standard source. The first thing worth noting is that we begin our research online; the second is that a Google Search offers none of the standard dictionary entries one expects. The Dictionary.com, Merriam-Webster and Free Online Dictionary entries are missing from their usual prominent placement. Instead, the Wikipedia article on “Digital Humanities”³ offers the following, categorical definition:

Digital Humanities is an area of research and teaching at the intersection of computing and the disciplines of the humanities. Developing from the fields of humanities computing, humanistic computing, and digital humanities praxis, digital humanities embraces a variety of topics, from curating online collections to data mining large cultural data sets. Digital humanities (often abbreviated DH) currently incorporates both digitized and born-digital materials and combines the methodologies from traditional humanities disciplines (such as history, philosophy, linguistics, literature, art, archaeology, music, and cultural studies) and social sciences with tools provided by computing (such as data visualization, information retrieval, data mining, statistics, text mining, digital mapping) and digital publishing.

By contrast Anne Burdick and her coauthors provide a far more open-ended, inclusive definition in their book *Digital Humanities*:

[Digital humanities] asks what it means to be a human being in the networked information age and to participate in fluid communities of practice, asking and answering research questions that cannot be reduced to a single genre, medium, discipline, or institution. . . . It is a global, trans-historical, and transmedia approach to knowledge and meaning-making.⁴

The sharp contrast between the two approaches demonstrates the contested nature of the term, and perhaps this is the result of the fact that while humanists and computer scientists are in dialog here, each with their own distinct perspective, the digital element of the definition underlies both. Perhaps this will be resolved eventually by reestablishing the digital humanities and humanities computing as two different areas, each with its own perspective: the former (digital humanities) as a methodology; and the latter (humanities computing) as a field of study or a discipline. However, the question would then arise as to whether humanities computing were a humanistic, a social science or technological/scientific discipline. Our perspective in these pages, however, is not with humanities computing, but with the digital humanities, with harnessing computing power to facilitate, improve, expand and perhaps even

change the way humanists work. Our focus remains that of the humanist and the humanities with deep historical roots and outlooks.

How then should we proceed to create a working definition that will facilitate and guide the following book? The two definitions in the preceding texts do offer a realistic assessment of the current state of humanities computing and some useful insights. But if we give credence to our first definition, is the digital hurting the humanities by drawing scholars away from the traditional work of humanists and turning them into number crunchers or bell-and-whistle builders? Some believe that the digital is dramatically improving the work of humanists; that the digital can make scholars think and work better, or at least differently, as is vaguely implied by the second definition in the above text. It is true that the digital expands the amount of material that one can access and process in any given amount of time. The digital can also connect things with powerful search capabilities. Scholars can enhance the efficiency of their work with tools for organizing and mining materials. Writing and editing are facilitated in the digital realm. As Roberto Busa first asked, do these changes reconstitute the way scholars work or are they merely helping scholars do what they would normally do, but more quickly and efficiently? Are the digital humanities changing the way humanist scholars think? Is there a body of evidence that anything so fundamental is already changing, or do the humanities remain at the early stages of the digital era?

If we examine the question in broader context: can we believe the “digital futurists,” those who claim ground-shifting capabilities for the digital? Have old ways of research, writing and publication been supplanted as the digital alters all historical relationships and models? Are such traditional forms as monograph and article publishing, textual editing and image archiving too minor to be encompassed by their visions of the digital? Or may such narrow definitions and prophecies of ineluctable change actually inhibit the adoption and acceptance of the digital by intimidating potential users, reviewers and administrators? Some may fear that their disciplines will be overtaken by digerati, whose work will outstrip anything that traditional humanists can accomplish. Instead of accepting the accessible tools that can work for anyone, the futurists project a techno-future filled with astounding wonder shows, to which, by comparison, all other efforts pale. What is the point of using a few architectural photos of the Château de Fontainebleau captured by a digital SLR if the futurists present NASA technology-derived million-pixel images of one of its garden sculptures? Why continue to edit texts using

traditional philological methods when digital text mining can serve up all possible variants for any text? Instead of celebrating what is now done on a daily basis by so many humanists, has the promise of an unknown future made potential adopters hesitant to take their first steps or to claim the recognition for their own achievements and those of their colleagues for what they are?

To re-pose the question raised by the first two definitions above from the perspective of funding agencies and grant applicants: Are digital humanities projects worth doing only if subsidized by a \$2 million grant from the Mellon Foundation or the National Science Foundation? Have foundations that have funded high-end digital work supported the creation of a class of high-end academic and humanistic futurists, prophets and superstars to the neglect of most working humanists? Have large grants that have gained access to media and public relations on and off campus raised the ante for those engaged in the small and particular of traditional scholarly work and further accelerated the marginalization of the historically oriented humanities from both the academic campus and American life in general? We aim to explore such questions as well. And while the major task – and the one that will occupy most of this small volume – will be to examine both the impact of the digital on the humanities and the influence of humanists on the digital, we should first discuss the nature and historical development of the humanities themselves.

To begin, it will be useful to briefly distinguish what we mean by the term *humanities* and its relative, *humanism*. By “humanism,” we do not mean the *Merriam-Webster’s Dictionary* definition 3 of the term: “a doctrine, attitude, or way of life centered on human interests or values; especially: a philosophy that usually rejects supernaturalism and stresses an individual’s dignity and worth and capacity for self-realization through reason.” Nor do we mean definition 2: “humanitarianism”; nor even fully definition 1: “a. devotion to the humanities: literary culture” or “b. the revival of classical letters, individualistic and critical spirit, and emphasis on secular concerns characteristic of the Renaissance.”

Rather, throughout this book, we will focus on the historically conditioned and contextualized meanings of the terms studied and clarified over the past two generations by scholars of the Renaissance. We will attempt to find historical analogies and precedents for digital humanities theory and practice throughout these chapters, making apt historical comparisons (in true humanist fashion), until the analogy is stretched to

the breaking point by modern phenomenon. When this occurs, we will then ask how and why our new realities are different from our historical precedents and what questions these breaks pose for our attempts to define the digital humanities and the humanities in general in the digital age. Our methodology is nothing new, even for examining the digital: James J. O'Donnell used it masterfully in his *Avatars of the Word*,⁵ and much early digital theory constantly referenced the ages of manuscript and print.

Our working definition of the humanities and of humanists has been established by Paul Oskar Kristeller⁶ and three generations of colleagues and students. Essentially these historians sought the origins of humanism and the humanities first in the intellectual culture of late medieval France and then primarily of Italy and in one set of the standard seven liberal arts of the Middle Ages – the *trivium* (grammar, rhetoric and logic) – and only later and more peripherally in the *quadrivium* (arithmetic, geometry, music and astronomy).

These scholars also focused on the contrast between humanism and the education of the Italian business classes in the later Middle Ages. This business-class education was strongly practical, emphasizing literacy in the vernacular, in basic business math, in secular literature (romances and violent adventures) and popular religion (saints' and other celebrities' biographies and spiritual self-help) and the rhetorical and grammatical skills involved in public speaking and creating legislation, legal documents and private contracts and accounts. In short this was the equivalent of our modern career-oriented, practical college education, which has in fact largely displaced traditional humanities concentrations on college campuses over the past generation.

By the late thirteenth and early fourteenth century, however, beginning in the free communes of northern Italy and then spreading to central Italy, most especially Florence, a different subset of this curriculum began to be emphasized, especially under the influence of Francesco Petrarca. Throughout his long and varied career (b. 1304–d. 1374) this poet, classical scholar and man of letters set off to consciously rediscover and then imitate the works and the spirit of his ancient Roman models, especially Cicero. He rejected the medieval Latin of the universities and the contemporary urban professional classes – the doctors, lawyers and theologians trained at Italy's and France's universities – and began to attempt to write in a new, pure Latin style in imitation of the ancients. He did so not from any esoteric, elitist or formalistic love of good writing for its own sake – how one text or textual tradition might influence

another, how one writer's style might form the model for another's – but for deeply moral and spiritual purposes: the wisdom and learning inherent in the texts themselves. Like Dante before him, Petrarch saw the world around him as decadent and corrupt, its secular and religious leadership mired in power politics, personal ambition and spiritual emptiness. He therefore looked back to the ancient world for its pure expression of moral life in the letters of Cicero, for example, and in the works of the early Christian writers like Augustine. He was the first to formulate our idea of the period between the fall of Rome and his own time as the “middle ages,” a period of decline and darkness. For Petrarch the learning of the ancient world was both a personal solace and a means to reform and renew the world by changing people's minds and then their actions: by clearly understanding the writing, and hence the thought of the great ancients, we could come to imitate them. But the key lay not in religious observances or politics but in language and thought.

He soon gained a brilliant circle of followers and admirers, including Cola di Rienzo, Giovanni Boccaccio, Coluccio Salutati and, in a later generation, Leonardo Bruni and many others, who by the early fifteenth century had begun to consciously focus on a set of skills and activities that would soon distinguish them from their academic peers at Europe's great universities: the philosophers, theologians or lawyers (canon and Roman). Instead, the first humanists focused on what they saw as the key to Petrarch's revival of antiquity: grammar and rhetoric, including what today we would call philology. In addition to these they studied and wrote poetry, history and moral philosophy, rejecting the logic and dialectic philosophy of the medieval schoolmen, the Scholastics. While their focus lay in language, they valued the result of proper understanding: public moral action and ethical life.

Our analysis is necessarily somewhat simplified here, and the humanists should not be equated with the full extent of Renaissance thought and culture. They were, instead, a distinct group of philological experts, trained in the reading of classical texts, first Latin and then Greek, and devoted to deciphering and editing the scattered classical heritage they found across Europe in medieval monasteries and princely collections. By around 1500 they were also overseeing the dissemination of these texts across Europe in consistent printed editions. They framed their activities in the words of the second-century scholar Aulus Gellius: they were engaged in the study of “*humanitas*,” that is, “learning and instruction in good or liberal arts. [For] those who earnestly desire and seek

after these are most highly humanized. . . .” Their goal and the goal of all humanists was to interpret the evidence of human lives, thoughts and actions.

By the death of Leonardo Bruni in 1444, this group of scholars, self-selected and focused on these specific philological skills, had gained immense influence in their city-states where they served as chancellors and held other high offices and elsewhere where their rhetorical and other written skills served the needs of new Renaissance states and princely courts, of the papacy and then of the universities.⁷ Within the university their curriculum became known as the *studia humanitatis*, and the same Italian student slang that would label the jurists, *jurista*, for example, began to dub the proponents of the *studia humanitatis* as “*humanista*,” or “humanists.” The modern word *humanism* itself derives only from 1808, coined by the German philosopher Friedrich Immanuel Niethammer as “*Humanismus*.” He, however, used it to distinguish between education as a practical-minded set of skills (our predominant college concentrations and earned degrees today) and education as an end in itself based on philological and literary pursuits.

Whether in public or academic life, the humanists’ essential tool kits included their own skills in rhetoric, grammar and the other liberal arts, their books and then the libraries that housed these and the collections of the ancient and contemporary writings that they used. Many women also presided over or rose to prominence at court, and some even lived independent lives as poets and performing artists. Some – very few – humanists, like Desiderius Erasmus, seemed to have lived a creative life that rose above the patronage of the princes, kings and emperors that supported them.

The medieval libraries where they rediscovered their ancient Roman and Greek texts were neither as dusty nor as worm-ridden as the humanists often portrayed them, but the humanists themselves actively helped create what we would come to know as the modern library: first of all with their own collections, starting with Petrarch, and then with the collections of kings (the Angevins and Aragonese at Naples), princes (the Medici in Florence, the Montefeltro in Urbino) and ecclesiastics (the Vatican Library par excellence). These became the models for humanist libraries that, if not public in the modern sense, were certainly open to any qualified user who could read their books.

Closely tied to the library was the creation and distribution of the book: through commercial copy centers (*scriptoria*) in such university centers as Paris, Bologna and Oxford in the later Middle Ages, and then

through the new print medium into the seventeenth century. Humanists set a precedent in their relationship to this new process not only in the creation of new ideas and the critical editing of old texts but in the manufacture and dissemination of the book itself: from Petrarch's and Salutati's own ideas in creating the humanist script to Desiderius Erasmus's editorial work with the pioneering Renaissance printers Aldus Manutius in Venice and Johann Froben in Basel. We thus cannot separate the work of the humanist scholar from the work of the library and the publisher: they have been integrally bound together historically from the start.

By the early 1500s "humanism" had swept the courts of Italy and then of Europe and had become such a strong cultural force that humanist educators – such as Pier Paolo Vergerio, Vittorino da Feltre and Leonardo Bruni in Italy, Erasmus in the Hapsburg lands, Juan Luis Vives in Spain or John Colet in England – had established the humanist curriculum as the only valid one for Europe's leadership classes, both secular and ecclesiastical. Grammar, rhetoric, oratory, history, poetry, all based on classical Greek and Latin models, became the classic core curriculum. It became the basis for numerous handbooks dedicated to the "education of the Christian prince," the standard for the Italian courtier, the English gentleman, the Italian and Spanish lady. Even after the Protestant Reformation it remained central for German students in secondary school (Gymnasium) as well as for the curriculum of the Jesuits in the Catholic Reformation.

The traditional university graduate specialties – philosophy, law and medicine – as well as architecture, the visual arts and the new natural sciences, all soon shared many of humanism's basic approaches and tenets: a deep respect and imitation of ancient models, the conscious efforts to rediscover and identify ancient sources, the sometimes almost slavish imitation of styles and vocabularies, to such an extent that by the end of Renaissance impulse – really the late eighteenth and nineteenth century – humanism had become almost synonymous with higher education and public culture. The architecture of humanism was the driving force of the late nineteenth and early twentieth centuries behind the grand public buildings that transformed the American urban fabric, for example, with grand public institutions (everything from libraries to train stations) and private mansions.

Humanism and its moral and intellectual concerns remained at the heart of the higher education system of the early American colonies and republic at Princeton, Harvard and Yale, for example. Even Thomas

Jefferson, a proponent of the new sciences and knowledge, based the core curriculum at the University of Virginia (UVA) on the humanist tradition: ancient and modern languages, mathematics, moral philosophy, natural philosophy, law and medicine, which matched the standard European university education of the time. In Jefferson's model we can already see the impact of the scientific revolution, the Enlightenment and American pragmatism on the humanist tradition: chemistry and more practical skills were also integrated into UVA's curriculum. This cultural legacy remained strong into the twentieth century in curricula that promoted a liberal arts education.

With the late nineteenth century, a new emphasis on "scientific" research and an empiricist methodology for humanists developed in the seminars of the great German historian Leopold von Ranke (d. 1886) – with his insistence on the scientifically derived truths apparent in the archival records. This Rankean approach began to take hold of academic life first in Germany and then in the United States. While this is a topic more appropriate to larger policy issues in higher education, these developments had a significant impact on what we identify today as the humanities. The shift in American higher education away from the liberal arts colleges of the colonial era and early republic to the research university of the late nineteenth and early twentieth centuries has had a profound impact on notions of disciplinary research specialization and the organization, publication, recognition and rewarding of work. The impulse toward "scientific" and "objective" research and writing also propelled the strict professionalization of the traditional humanist educators and their activities into the departments, schools, scholarly societies, journals and university press system that we all recognize today.

By the 1920s the goals of humanities research, teaching and publication had matched the thrust of the physical sciences and emerging social sciences: rigorously peer reviewed and professionalized within a standardized system of strict guidelines of expectations and performance. This new approach began to rapidly move the academic humanist far away from the public one: from the poet, the fiction writer, the moral essayist and dramatist, the visual artist and the architect who were the humanists of the Renaissance and early modern Europe. The new humanist – almost exclusively white and male – was to be found in departments of history, literature, classics, philosophy and the like and would be devoted to researching and teaching not only the ancient past but also his colleagues' more recent reflections on it, focusing on the

evaluation of secondary scholarship that has come to mark the role of the core humanities disciplines today.

The post–World War II period inherited this system, perfected by the 1920s, and thus became the great era of the American research university. Prominent documents extolling this spirit would include Vannevar Bush’s report *Science the Endless Frontier*⁸ in which he laid out the basic form of today’s technology-commercial-based university system, and Clark Kerr’s 1960 master plan for the University of California system.⁹ At the same time, the public perception of the humanities – perhaps reflecting their increasing marginalization in the national culture – evolved into something far different from what they were becoming inside the university. In 1964, sponsored in part by the American Council of Learned Societies, the famed Commission on the Humanities, which included such luminaries as Kerr, Thomas J. Watson, Kingman Brewster and Theodore Hesburgh and which led to the creation of the National Endowment for the Humanities, could define the humanities as follows:

The humanities may be regarded as a body of knowledge and insight, as modes of expression, as a program for education, as an underlying attitude toward life. The body of knowledge is usually taken to include the study of history, literature, the arts, religion, and philosophy. The fine and the performing arts are modes of expressing thoughts and feelings visually, verbally, and aurally. The method of education is one based on the liberal tradition we inherit from classical antiquity. The attitude toward life centers on concern for the human individual: for his emotional development, for his moral, religious, and aesthetic ideas, and for his goals – including in particular his growth as a rational being and a responsible member of his community.¹⁰

The American university system would retain this approach into the twenty-first century and the beginnings of what we now call the “corporate university,” with its emphasis on the new business-oriented forms of organization, accountability and monetization of all aspects of research and teaching – both in the sciences and in the humanities. One might say that the corporate university is promoting – in many of its most profound modes – an ironic return to the Italian system of urban education in the late Middle Ages as it existed *before* the arrival of the humanists.

The developments that we have rapidly surveyed here have direct impact on the humanities in this new digital age and present us all today with new challenges and, perhaps, new opportunities to express that basic mission of the humanities to both enlighten, according to the

models of the past, and to create responsible citizens. In this regard the digital humanities might yet again be set to embrace the methods and outlooks that the very first Renaissance humanists took up: to use modern communication skills – digital iterations of rhetoric and grammar – supplemented by the creative arts of the imagination and the reflective wisdom of the historical outlook to reach contemporary audiences with interpretations of what it is to be human and what it is to be a responsible citizen.

While we have devoted a considerable amount of space to describing and analyzing the historical roots of the humanities, we have still not yet settled on a working definition of the digital humanities. That will remain the task of the following chapters as we discuss the functions, elements, materials, tools, environments and dissemination of digital work in the humanities.