The Revolutionary Implications of the Digital Humanities

Jim Leach, Chairman, National Endowment for the Humanities

The Fifth International Conference of HASTAC, University of Michigan
1011 North University Avenue
Ann Arbor, MI 48109
United States
See map: Google Maps [1]

December 2, 2011

One of the few things that we can be sure about in this period of accelerating change is that the monumental advances in communications technology spawned by the invention of the computer and the chip have epochal implications for human learning. A revolution has commenced where science and technology are melding with the humanities.

Progress without a known destination is underway. The application of digital technology to non-mathematical subject matter has given birth to an academic emphasis that we have come to term the digital humanities. It has sparked, and in turn been given impetus, by cooperative learning and research endeavors, embodied in and symbolized by innovative organizations like HASTAC¹.

As all of you know, the National Endowment for the Humanities is a small agency with limited resources. Nevertheless, over the past generation NEH has endeavored to play a foundational role in the digital humanities.

For instance, twenty-four years ago last month, NEH made an award to Vassar College for a conference that led to the Text Encoding Initiative², now known widely as TEI, which has become the key to developing cohesive methods of underpinning scholarship in the digital humanities. The development of TEI has simplified scholarly access to everything from music notation to texts from antiquity to the papers of our founders.

The widespread adoption of TEI standards has allowed scholars in various communities, nationally and internationally, to collaborate by sharing data and techniques that benefit each other and, importantly, facilitate further research in unrelated as well as related fields.

In a similar vein, several NEH Research and Development grants have funded work on the Universal Scripts Project³ at the University of California, Berkeley, a project of immense importance for international
communication and scholarship. Our assistance has been designed to expand the scope of Unicode⁴, the standard for digitally representing every character from the world’s languages on the World Wide Web and many text-processing systems. Although the major languages are already part of the Unicode standard, many historical scripts and the characters of some minority languages are yet to be included, largely because of the cost. With over $750,000 of NEH support since 2005, NEH has facilitated the incorporation of thirty-five additional scripts into the Unicode standard—minority scripts, such as Sundanese (eastern Java) and Kaithi (northern India); historical languages, such as Imperial Aramaic, Avestan, and Egyptian hieroglyphics; and six sets of special characters for existing scripts.

This investment in digital coding methods for the humanities has made a vast body of humanities material available globally to scholars and students as well as any interested parties with access to the Internet.

We are still at an embryonic stage of digital humanities research but we at NEH are proud of the hundreds of projects we have supported over the years. Let me just mention a few that have made significant contributions to the advancement of knowledge, some involving, I suspect, more than a few scholars at this assembly.

For almost two decades, NEH has been a major contributor to the Perseus Project⁵ of Tufts University which started as a gateway for those interested in the literature, art, and archaeology of Ancient Greece. Over the years its collections have crept forward in history to include cultural materials pertaining to Ancient Rome, Early Modern Europe, literature of the Enlightenment, even materials relevant to the 19th Century and the American Civil War.

Free online cultural repositories such as the Perseus Project are democratizing access to information. Students and the curious of all ages whose local libraries cannot afford to provide Aeschylus in Greek, or the works of Marlowe, can now not only encounter these and similar literary masterpieces, but can also find tools to help understand and interpret them.

Uniquely important at NEH are projects that allow citizens of the U.S. to understand their history more fully. Particular attention has been given those initiatives that illuminate corners of the historical record that for too long have remained obscure. Until very recently, for instance, African Americans could not trace their ancestors’ entry into America because so few records were available. Where the records did exist, they were scattered in various archives in many countries.

Accordingly, the NEH has supported a long-term, collaborative project of Emory University called “Voyages: The Transatlantic Slave Trade Database⁶,” which has collected and collated records of the slave ships that brought some 12,520,000 Africans across the Atlantic Ocean from the 17th Century through the abolition of slavery in the United States. The project makes available maps, voyage logs, and trade routes involved in the slave ship crossings. The database also includes the names of 67,000 Africans liberated by the Royal Navy before they could reach North or South America.

Of historical significance, the project chronicles not only those who arrived in the Americas but registers those who tragically did not survive the voyage — some 12 to 13 percent who were treated as dispensable human cargo. It further documents that slave rebellions occurred in approximately one in ten voyages. These rebellions in all probability reduced the number of those willing to enter the otherwise lucrative slave trade and caused ships to steer clear at times from those parts of West Africa that supplied individuals prone to resistance.

To complement this benchmark initiative that Professor Henry Louis Gates, Jr. has praised for doing more to “reverse the Middle Passage than any other single act of scholarship possibly could,” NEH has recently begun funding a project at Michigan State University that will help preserve and provide public access to

documentation on the personal experiences of individual African slaves in the New World. Like the Trans-Atlantic Slave Trade Database, this project will be a resource for scholars, students, and African-Americans desiring to search for their roots.

I would also like to point to the NEH/Library of Congress joint venture, “Chronicling America,” which has supported the digitization by state partners of over four million pages of newspapers published across America from 1836 to 1922. Chronicling America provides citizens a view of what local as well as national newspapers had to say about some of the formative events in American and world history, from the Civil War to World War I, from the Temperance Movement to the advent of the automobile and electrified street lights.

One hundred fifty years ago today, for example, the Washington Republican ran a front page advertisement signed by federal Quartermaster M.C. Meigs. With the Civil War heating up in the West as well as along the coast, Meigs was looking for boat and engine builders to construct gunboats to patrol the Mississippi and other western rivers.

These few examples illustrate the imaginative capacity of the digital humanities to provide access anywhere on the globe to texts and cultural expressions that are at the heart of humanistic inquiry or simply satisfy individual curiosity about what the news of the day may have been on somebody’s birthday.

Given the pace of technology and the extraordinary new research opportunities that have been opened up, NEH has created several programs designed to assist scholars in pushing the digital envelope.

This year, for instance, NEH joined and helped coordinate seven international research entities, including the National Science Foundation, to move forward with a second round of the Digging into Data Challenge, a grant competition designed to spur cutting-edge research in the humanities and social sciences. Sponsored as well by institutions in the U.K., Canada, and the Netherlands, Digging into Data encourages scholars to consider how advanced computation can change the nature of our traditional research methods. As many of you know, the first round of the Challenge yielded fascinating results, ranging from “text mining” which unearthed new and provocative ideas about the historical development of concepts of gender to analysis of the changing rate of cultural adoption of technologies.

Challenges like Digging into Data are encouraging scholars to apply quantitative as well as qualitative analysis to cultural texts of all kinds. Now that we are creating digital, web-accessible versions of books, newspapers, music, works of art, and other scholarly and scientific resources at an unprecedented rate, researchers in the humanities and social sciences have the prospect of expanding our scholarly horizons by asking new questions based on availability of new, more diverse data.

NEH also has a Digital Humanities Start-Up program devoted to “seed grants.” To spur new fields of inquiry, it takes a “high risk/high reward” approach in support of American universities, libraries, archives, or non-profits that use technology in innovative research ways. These modest-sized grants (ranging from $25,000 to a maximum of $50,000) are intended to encourage plans, prototypes, or demonstration models for longer term digital humanities projects.

Successful Start-Up grantees who have demonstrated their impact on the field are encouraged to pursue larger implementation funding at a later stage. In terms of applications, this program has proven to be quite competitive, with nearly 300 applications received and about 34 awards made each year. The large number of grant applications and the high quality of awards suggest that the Endowment has tapped an important unmet need in the humanities.

At its core, NEH is in the knowledge development and dissemination business. The heart of our work is concern for the recording of accumulated knowledge of the past in order to provide perspective on the
The Revolutionary Implications of the Digital Humanities

present and facilitate research that may provide insights about the future. It is somewhat disconcerting in this regard to note that when people today think of research, they seem increasingly to picture laboratories rather than libraries. The very concept of research has come to be thought of as almost exclusively scientific when humanistic understanding has never been more important. We are full bore in support of scientific endeavor, but we also think it critical to prioritize idea exploration and expand access to the wisdom of the ages.

Indeed, it has been gratifying to watch the new wave of humanists who have breached the barriers between science, technology and the humanities. As many developments in the digital humanities have shown, quantitative analysis can support and guide qualitative analysis, and vice versa. It is thus no accident that many of the strongest supporters of the humanities come from the sciences and that we have proceeded to partner with the National Science Foundation in various ways, perhaps most significantly in the development of various digital library initiatives. Such projects have advanced, among other things, our understanding of how to digitize ancient and medieval materials, notably manuscripts damaged by fire, water, and aging, and how to make them broadly accessible.

For instance, digitized cuneiform tablets were incorporated into UCLA’s Cuneiform Digital Library and medieval manuscripts from the British Library’s prized Cottonian Collection became part of the University of Kentucky’s Digital Athenaeum. In addition, a project at the University of Massachusetts developed techniques for indexing digitized copies of handwritten historical manuscripts composed by a single author.

Two other projects — one at the National Gallery of the Spoken Word at Michigan State University and the other at Indiana University — focused on best practices for digitization and indexing of recorded sound collections. The work of Project Prism at Cornell culminated in a model system for ensuring the information integrity of digitized collections and ultimately led to other important work related to digital object architecture and inter-operability architecture.

These have become significant international systems for ensuring preservation and access to humanities collections. And many of the digitizing techniques developed with government support will contribute to what may prove to be one of the greatest public-private projects in history, the development of a Digital Public Library of America (DPLA). This long-term, highly ambitious project that NEH is encouraging in coordination with the Library of Congress, the National Archives, the Smithsonian, and the Institute of Museum and Library Services aims, among other things, to integrate silos of discrete digitized archives around the country and merge them into one sky-way with global access ramps. At an October conference hosted at the National Archives, newly assembled DPLA leaders announced that they will be working with the Europeana collection to achieve interoperability. This will open the contents of libraries, museums, and various archives on two continents to users around the world, free of charge.

The critical importance of moving forthrightly to coordinate the digitization of books and assorted other cultural materials was underscored by the Archivist of the U.S., David Ferriero, who told the conference that many students and young scholars proceed on the exclusive assumption that “if it isn’t online, it doesn’t exist.”

There have been prior revolutions in the democratization of ideas. The development of marks and combinations of letters to represent words, the invention of paper and the printing press, the establishment of schools, especially public schools, and of libraries and universities have been seminal stages in human progress. The concept of establishing in the public domain an easily accessible digital repository of a vast conglomeration of written material and created matter is a logical extension of these prior revolutions.

We don’t know precisely how such an institution will be organized, managed, governed or how it will
progress, given the unpredictable, imaginative capacity of users and the more mundane, yet thorny, copyright issues that exist. We don’t even know how the cost burden of the effort will be shared between corporations, the non-profit community and governmental bodies. But I expect the NEH to continue to play a modest role and am heartened by several thoughtful pledges that have been made to date by the philanthropic community to the DLPA effort stewarded, to date, by Bob Darnton, the Librarian of Harvard.

I am also deeply respectful of the international leadership the Librarian of Congress, Jim Billington, has given to advancing the digital library concept. Billington has pioneered digitization initiatives within the world’s largest library and led cooperative digital initiatives with UNESCO and a wide swath of countries around the world.

Let me conclude by noting that since the Enlightenment, the issue of equality has been looked upon as a political ideal tied to techniques of social organization and governmental policies of the moment. But in the modern world access to knowledge is becoming as central to advancing social equality and opportunity across the globe as access to the ballot box has proven to be the key to advancing political rights.

The social hallmark of our times is thus the emergence of a New Digital Class, characterized less by occupation, birth, geographic location, and the science-humanities divide than by an individual’s degree of curiosity, diligence and access to digital technology.

The important division in the new communications age is no longer the one between science and the humanities. It is in the first instance the growing gulf between those who have crossed the digital divide and those who by choice, lack of access or capacity have not; and in the second, between those who seek information from diverse sources with an open-minded perspective and those who choose to rely on single-dimensioned purveyors of views.

The question of whether a tweeting world will cause greater understanding and social integration at the community and international level or lead to greater intolerance and social splintering is yet to be resolved. Despite the divisive tendencies that characterize current American politics and U.S. relations with the Muslim world, I am convinced that shared learning and shared perspectives are unifying impulses, and that technology that allows borderless, people-to-people communication will over time help humanize domestic and international politics. Indeed, it could be that the development of a New Digital Class and the knowledge base made globally available through the digital humanities will provide impetus to civilizing human relations. Knowledge, after all, inoculates against intolerance and serves as a powerful antidote to despotism.

Thank you.

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