3. THE SOCIAL LIFE OF THE DIGITAL HUMANITIES

DIGITAL HUMANITIES ENGAGES A WORLD OF LINKED AND LIVED EXPERIENCES.

BECAUSE NETWORKS CONNECT US, THEY ARE SOCIAL TECHNOLOGIES. AS SCHOLARSHIP MOVES FROM THE LIBRARY AND THE LECTURE HALL TO DIGITAL COMMUNICATION NETWORKS, IT TAKES ON EXPANDED SOCIAL ROLES AND RAISES NEW QUESTIONS. NEW MODES OF KNOWLEDGE FORMATION IN THE DIGITAL HUMANITIES ARE DYNAMICALLY LINKED TO COMMUNITIES VASTLY LARGER AND MORE DIVERSE THAN THOSE TO WHICH THE ACADEMY HAS BEEN ACCUSTOMED. THESE COMMUNITIES INCREASINGLY DEMAND AND DELIGHT IN SOCIABLE INTELLECTUAL INTERACTIONS, IN WHICH CRITIQUE MANIFESTS AS VERSIONING, AND THINKING, MAKING, AND DOING FORM ITERATIVE FEEDBACK LOOPS.

A DIVISION emerged over the course of the 20th century that separated humanities knowledge into study and analysis on the one hand, and practice and application on the other. The former is characterized by criticism, hermeneutics, and close reading, almost exclusively undertaken by a single author who works to articulate a highly defined problem in a specific discipline. The latter is rooted in design, collaboration, and performance, often stretching across media and involving multiple agents, producers, and authors. Thus, the creative energies of the arts come to be seen as distinct from the "serious" practices of criticism, analysis, theory, and history. In other words, the process of "how" became separated from the content of "what."

This division helps us understand the ways in which the diversity of humanities knowledge is regularly (and not always unfairly) stereotyped as a dry, rarefied, canonized set of objects, disciplinary practices, and media forms. The "how" requires attention to design, format, medium, materiality, platform, dissemination, authorship, and audience, things that are all taken for granted or assumed to be implicit, value-neutral, secondary, or even irrelevant when scholars turn over their manuscripts to a university press. But there is nothing neutral, objective, or necessary about the format of a book, the space taken by a page, the medium of paper, or the institution of a press. In fact, the "what" is shaped by the "how" in a profoundly recursive, process-oriented manner. When print artifacts are no longer the primary medium for knowledge production in the humanities, norms begin to change and the "how" of design reasserts itself at the core of every "what." In embracing such a transformation, the Digital Humanities not only takes on a new set of disciplinary and technological tasks, but also a world of linked and lived experiences that are at once social and epistemological in character.

This chapter focuses on the social aspects and societal impact of the Digital Humanities. It begins by analyzing the economies in which humanistic knowledge was created in the past before turning to how open-source models, information technologies, and social media have reshaped contemporary practice, promoting social transformations that affect the reach and relevance of humanities work. One such impact is the invigoration of collaborative authorship and the growing significance, in turn, of what will be referred to as the "curation of knowledge." Publishing, always a social act, becomes ever more so in the Digital Humanities, challenging academic presses and university libraries to stay true to their mission of promoting

excellence while reaching out to expanded publics. The chapter concludes with a description of the *hedgefox*: the new type of student that a Digital Humanities education could and should produce.

Open-Source Knowledge Economies

In order to understand the transformation of scholarship and scholarly practice in the Digital Humanities, we can contrast two different economies: The first is that of the Industrial Revolution which shaped the establishment of modern humanities disciplines and departments within Western universities; the second is the globalized economy of the networked information age, the economy of the Digital Humanities. It is here that we can discern a critical difference between an economy of knowledge production tending towards scarcity, centralized control, hierarchy, division of labor, property, and proprietary systems versus an economy of knowledge production tending towards abundance, decentralization, peer creation, creative commons, and open-source models.

The fact that, by its nature, Digital Humanities encompasses both an academic and a social life expands the discussion well beyond the technological. Central to the transformations of the 21st century is the movement from closed- to open-source cultural production. Open-source culture possesses a multitude of facets and definitions, comprising many of the attributes already discussed: collaborative authoring, multiple versioning, flexible attitudes toward intellectual property, peer contributions, access to multiple and multiplying communities, and overall patterns of distributed knowledge production, review, and use. Open-source cultural concepts had their origins in the software development community decades ago, when dedicated independent programmers revolted against the decision by computer manufacturers to sell software where the source code was "closed," meaning it was impossible to change, improve, or adapt to the user's needs. The free and open-source movements started to create alternate operating systems and programs that users could contribute to, improve, and send back out to the developer and user communities. Richard Stallman, one of the leading lights of the free software movement, once referred to open-source projects as "technical means to a social end."

The growth of networks facilitated and accelerated open-source production, allowing the globally connected to ship code from developer to developer,

upload new versions, and check for flaws and improve performance. Proof soon came in the form of the wildly popular open-source Linux system, originally developed by a Finnish university student named Linus Torvalds and then expanded by a vast community of like-minded programmers around the word. The maxim of open-source software developers—"given enough eyeballs, all bugs are shallow"—was a fresh way of thinking about how robust, stable systems could be the product of multiple, autonomous hands rather than of centralized, top-down, proprietary models of development.

As Stallman anticipated, what began as technical became social, and ideas of free and open cultural production began to percolate through society. What this meant was that users wanted to be able to mine networks and systems for parts and even wholes that they would then be free to refashion, remix, and re-create according to their wants and needs. This was, and remains, a utopian prospect, in large part because open-source runs up against inherited notions, values, and rules regarding intellectual property.

For if code—or any cultural product—is produced by a distributed network of sometimes unknown creators, how is it to be regulated? Who is held accountable? Who owns it?

Open-source has come under attack from centers of power because it challenges the very intellectual property rights that sustain many dominant players within the global economy. Open-source also encounters opposition from communities and institutions that are committed to limited, calibrated, or stratified forms of access to cultural knowledge. Indeed, it seems more than legitimate to critique open-source's utopian universalism inasmuch as all knowledge or cultural materials cannot be shared on equal terms. Tracking the provenance of materials that reside in a given cultural institution can expose histories of violence, plunder, or genocide just as well as it can expose heroic acts of rescue and preservation. So it is incumbent upon contemporary humanists to embrace a thoughtful, critical attitude toward open-source resources. No single or rigid approach to cultural property suffices. Digital diversity means recognizing fundamental differences as regards technological platforms and the uses to which materials are put.

To fully understand the specificities of our current moment and the prospects for the future, we need remember the social life of information in the industrial era, when worth tended to be defined by scarcity. Trade secrets were feverishly guarded; access to the means of production—not to mention media and

information technologies—was controlled; participation was limited by decidedly hierarchical functions and divisions of labor; and property was owned, protected, and sold in an economy that reduces value to supply and demand. Though there were notable exceptions to this model of scarcity—the establishment of public education from kindergarten through graduate schools, the great philanthropic initiatives, the building of public library systems—much of our legal and economic system is still predicated on scarcity and narrow definitions of ownership as a driving force. By contrast, the networked information economy, at its best, promises openness, sharing, and common platforms for information exchange. Access to the means of production in the information economy is dramatically opened up, rendering the bar for participation low enough for nearly everyone connected to the Internet. Peer-to-peer sharing and open-source models of production transform "property" into something created, edited, and monitored by the ever-expanding public but ultimately owned by no one. Many defining aspects of the networked information economy are based on abundance and the copiousness of the digital copy, which in turn is based on the cooperation and openness that characterized the early years of network development.

No clean break exists between these two economies and elements of complexity and contradiction appear within each. But forces are sure to continue to vie for control in an era of (seemingly) seamless networks, open platforms, and global exchange. For Duke University Law School's James Boyle, the real danger to the "commons of the mind" is not unauthorized file-sharing but "failed sharing." Rather than participating in the corporate panic about intellectual property theft, Boyle argues that we should be concerned instead about the enclosures and strictures placed upon the world of the creative commons. This is a debate that rages on, and digital humanists will increasingly be called upon to provide intellectual capital in the struggle with the monetary capital of some corporate titans as they wage a legal and cultural battle to regulate, protect, and monetize the intellectual property set free by the World Wide Web, the global merging of networks, interactive technologies, and digital cultural production.

Social Transformations and Technologies

As we have seen, the industrial economy which typified production and defined social relations over the past two centuries has been transformed over the last two or three decades into what Yochai Benkler terms the "wealth of networks" that characterize the decentralized and open information economy. With the growth of the participatory Web and social media technologies—what many have called "Web 2.0"—we have seen the emergence of an economy defined by social structures, modes of production, and cultural formations that alter the way information is produced and exchanged, enabling a global and networked world of decentralized sharing, collaboration, and diffusion, with the caveat that it also creates the conditions for violent backlash and newer forms of surveillance and control.

What makes social technologies different from unidirectional technologies like broadcasting? First, the bar to entry for using contemporary social technologies is remarkably low. Provided access to the Internet (which, to be sure, is not a given), anyone can tweet messages, upload pictures and/or video, post blogs, and download a wide range of media content. Secondly, social technologies are indeed "social," which means that they are communal, community-generated and community-generating. To socialize is to follow, to participate in, and to associate with—a structurally different way of conceiving of technologies than, say, instrumental uses to "do" certain tasks, which was the original model of the personal computing revolution, or private uses of technologies to "limit" access, as in the commercial obsession with intellectual property rights. Social technologies create social communities and public cultures that complicate and often transcend boundaries based on geography, age, class, ethnicity, gender, and so forth. And thirdly, social technologies have histories that parallel, influence, and give shape to human social structures and societies: Writing *qua* writing is a social technology; the postal system is a social technology; telephones, email, and IM are social technologies, precisely because they create interconnections and networks of communication, dialogue, and interaction that enable and give rise to relations that form the basis of societies.

Nowadays, it is common to celebrate the democratizing and decentralizing possibilities of social technologies, but we need to consider social media—like all technologies—from the standpoint of the dialectic: They enable broad-based participation; the bar to participate is remarkably low; and they produce global diffusions of

information, often through precarious portals that would otherwise squelch voices. Would Egypt's triumphant Tahrir Square have turned out like China's Tiananmen Square had the last two decades not seen the proliferation of cellphones, Twitter, and Facebook? At the same time, social technologies are also beholden to an array of political and corporate interests which have amassed large and complex data sets relating to every aspect of our behavior in order to create perfect consumer profiles, track identities, and enable ever-greater forms of surveillance and population control.

All over the world, authoritarian regimes have turned social media to their advantage much as they manipulated prior media. By intercepting postings and passwords, by asking users to agree to new security certificates and engaging in other coercive techniques, and by passing off propaganda as "spontaneous" participatory content, governments or partisan groups can amass troves of data to identify dissidents, abuse power, or create smoke screens regarding public opinion. We raise these issues with respect to the Digital Humanities to underscore the fact that social media not only enable democratic ends but can also make possible domination and subjugation. So, as much as we celebrate the global proliferation of networking, it is important to bear in mind that network technologies do not inherently promote democratic values and community-building. They also create the conditions of possibility for violent backlash, community surveillance, and possibly even genocide. After all, the railway system—the paradigmatic networking and social technology of the 19th century—not only enabled transnational movement and the birth of the global industrial economy, but also provided the technical means for efficiently deporting whole populations to face their murder in the 20th century.

The socialization of interior life and the restructuring of individual subjectivity in the face of constant communication exchange may yet produce long-lasting changes in the concepts of public and private space, security and privacy, identity and community. Swarm behavior and collective absorption into real-time activities have already created new models of rapidly organized and mediated communities. The interpellation of interior life into the networked environment is unprecedented, and the fate of the individual voice hangs in the balance. At the sci-fi end of speculation, collective thought forms seem to lurk on the edges of our horizon.

Reach and Relevance

What does all this mean for the Digital Humanities? First of all, the humanities are one of the key places to which we naturally turn to understand, analyze, and evaluate the social and cultural significance of any technology, to interpret its value, its dangers, and its possibilities. This, we contend, makes the work of the humanities more critical than ever as new social structures, economic models, cultural forms, value systems, and forms of selfhood emerge, rendering the "human being" decidedly more motile, diffuse, and even fragile. Broadly speaking, since the Digital Humanities studies and explicates what it means to be human in the networked information age, it expands the reach and relevance of the humanities far beyond small groups of specialists locked in hermetically sealed conversation. The scope and scale of the Digital Humanities encompass a vast archipelago of specialized domains of expertise and conversation, but also open up the prospect of a conversation extending far beyond the walls of the ivory tower that connects universities to cultural institutions, libraries, museums, and community organizations.

In fact, the notion of the university as ivory tower no longer makes sense, if it ever did. Instead, our ideal is that of the university as nodal point within a fluid, porous, and dynamic landscape. (Even medieval universities gave rise to their own networks of social life and publishing, albeit on a different scale and with manuscript copies and lectures as their defining media.) The social life of the Digital Humanities builds upon that landscape by making possible a networked information economy characterized by collaborative authorship and design, the social production and dissemination of knowledge, writerly authorship models predicated on multiplicity and versioning, participation in the expanded public sphere, and institutional and non-institutional venues for designing, sharing, commenting on, critiquing, and—perhaps most important of all—engaging with this knowledge.

Altered Modes of Authorship

"What is an author?" is a question that has long been central to humanities scholarship. Traditionally conceived, authors are individuals who compose on their own but write in dialogue with a community of peers and a received tradition. They—poets, philosophers, historians, novelists, dramatists, and so forth—create worlds through the written word. As Aristotle's distinction goes: We read historians to know the world, to understand what happened; we read poets to imagine what

might be, to inspire new worlds into being. Digital humanists share traits with both historians and poets: We are engaged with "worlds past" and also with worlds that are not yet. But digital humanists imagine the past and the future in ways that fundamentally transform the authoring practices of poets and historians, using new sets of tools, technologies, and design strategies. For digital humanists, authorship is rooted in the processes of design and the creation of the experiential, the social, and the communal. We no longer imagine authorship as autonomous work or as the labor of a solitary genius (something that, to be sure, critical theory has been chipping away at for decades). Instead we think of the harnessing and expressiveness of the creative energies of an ever-expanding, virtually boundless community of practitioners.

The question is no longer "what is an author?" but what is the author function when reshaped around the plurality of creative design, open compositional practices, and the reality of versioning?

We are moving from an era of scholarship based on the individual author of the "great book" to an era of scholarship based on the collaborative authoring possibilities of the "great project." Because we are in the midst of a transformation in the materiality of information and in the media technologies of communication, things that were once considered "mere" support systems, transmission media, and conveyance devices are now fundamentally implicated in any meaning-making process. Great books do not simply "contain" great ideas but are part of a techno-social apparatus of inscription and alphabetization. One may study the history of the page as a spatial unit of order; the material history of paper, ink, printing blocks, and printing presses; and the navigation of the object by the intervention of the human body. Print culture's centuries of stability undermined humanists' ability to "see" the materiality of their practices: the book became a transparent medium. Digital humanists, on the other hand, foreground the deeply recursive ways in which meaning and interpretation are bound up with materiality, media, and embodied navigation. This is why we stress that authorship is design and design is authorship.

Within the Digital Humanities, knowledge platforms cannot be simply left to editors, technicians, publishers, and librarians, as if the physical and virtual arrangements of information as argument through multimedial constellations are somehow not the domain of humanities scholars. In the print model, scholars typically "handed off" the content of their manuscripts to publishers who did the layout, design, editing, printing, and dissemination of the work. Now, however,

these tasks have moved to the forefront of the Digital Humanities precisely because choices of interface, interactivity, database design, mark-up, navigation, access, dissemination, and archiving are all part of how arguments are staged in the digital world. These choices are evident, for example, in the projects published in *Vectors*, a multi-modal, multimedia humanities journal in which each "article" is a project that explores the complex interrelation between form and content, underscoring the "immersive and experiential dimensions of emerging scholarly vernaculars across media platforms." Scholars work closely with designers, technologists, and the *Vectors* editorial team to develop appropriate interfaces, database schemas, navigation features, and content types that, altogether, instantiate an argument. While preserving the authority of peer review, the publication platform not only foregrounds collaborative authorship, but also public feedback through threaded discussion forums and annotation features.

The challenge for the Digital Humanities is to develop the evaluative metrics for legitimizing and credentialing this kind of scholarship since it places a high demand on readers to participate, navigate, explore, interact, and often contribute. A project published in *Vectors* may have multiple "authors," each of whom contributed to the argument: interface designers who created a Flash front-end, database designers who created a MySQL/PHP back-end, programmers who wrote the code to interact with the database and parse queries, academic scholars who populated the database and designed an interactive architecture for navigating the argument, GIS specialists who formatted and processed the data, modelers who created navigable 3-D models of physical environments, server administrators who oversee the appropriate operating software to ensure that the project remains functional, and so forth. Much like science articles with multiple co-authors, it is already common for Digital Humanities publications to list a series of authors on a project, and this is expanded exponentially when we are talking about the development of a platform. The singularity of the "I-subject" has been transformed into the collaborative authorship of a "we-subject."

Collaboration as Creation

These recalibrations are informed by and contribute to what we have been calling the social life of the Digital Humanities. Even where scholarship still "looks" like a book written by a single author, we are now witnessing the first wave of creative

destruction of long-held truisms, behaviors, and practices in the academy. Some scholars and artists have published versions of their books online using paragraph-by-paragraph blogging software or other collaborative annotation and commenting engines. Not only does this repudiate the notion of intellectual property as something locked up by copyright and exclusive licensing agreements, it also allows the authors to receive immediate feedback by hundreds of self-selecting peer reviewers—before the book is sent, by a university press, to a couple of scholarly authorities in their field. Crowd-sourced evaluations of scholarly arguments, not to mention crowd-sourced production models for generating and editing scholarly content, are transforming both the authorship function and conventional knowledge platforms: A book is not simply "finished" and "published," but is now part of a much more dynamic, iterative, and dialogical environment that is predicated on versioning, crowd-sourced models of engagement and peer review, and open-source knowledge and publication platforms.

This is nowhere more apparent than with Wikipedia, a revolutionary knowledge production and editing platform. While Wikipedia was dismissed by many within the academy as amateurish, unreliable and lacking in scholarly rigor (especially in its early years), we suggest that it is a model for rethinking collaborative research and the dissemination of knowledge in the Digital Humanities and throughout academia. Wikipedia represents a truly innovative, global, multilingual, collaborative knowledge-generating community and platform for authoring, editing, distributing, and versioning knowledge. To date, it has nearly 4 million articles, more than 450 million edits, more than 15 million registered users, and articles in scores of languages. This is a massive achievement for the first decade of work. Wikipedia represents a dynamic, flexible, and open-ended network for knowledge creation and distribution that underscores process, collaboration, access, interactivity, and creativity, with an editing model and versioning system that documents every contingent decision made by every contributing author. At this moment in its short life, Wikipedia is already the most comprehensive, representative, and pervasive participatory platform for knowledge production ever created by humankind. That is worth some pause and reflection.

It is striking that Wikipedia was not invented at a university, and though one of its founders has a humanities Ph.D., it operates outside the academy. Why might this be? Perhaps because the humanities—in broad strokes—remain fixated on discrete publications by individual scholars, primarily in conversation with

others like themselves, working in single media forms. It is one thing to create new knowledge within the theoretical, methodological, material, and disciplinary paradigms of a field; it is something quite different to imagine a new knowledge platform, a new way of designing knowledge and engaging broad communities in knowledge creation. What this means in practice is that as we shape our platforms, tools, and technologies, our platforms, tools, and technologies shape us. These mutually reinforcing systems form the social life of the Digital Humanities. They are mutually co-constitutive and profoundly recursive in ways that are generating new notions of what it means to be a human being as a subject that knows, as a creator of knowledge, and as an object of study.

Publishing as a Social Act

"To publish" is to make something public, to place it within a sphere for broad scrutiny, critical engagement, and community debate. Traditionally, publishing meant finding a journal or press in order to make academic treatises, arguments, and the results of research public—but this "public" was in reality primarily or even exclusively readers initiated in and defined by the discursive conventions of a given field. Today, almost anyone can publish (in the sense of "make public") anything. As noted earlier, the bar to entry for starting a blog, tweeting messages, posting photographs or videos, hosting a website, or commenting on other people's blogs, messages, postings, and websites is extremely low. It's not uncommon for a video that has "gone viral" to amass tens of millions of views across the globe within days or even hours. Clearly, we are witnessing yet another contraction of time and space, as information is radically decoupled from the specific identity of the creator.

For scholarship to engage with this contraction, let alone the unbinding of argument from author, raises serious questions for the humanities, which has, traditionally, considered a "proper" publication to be a peer-reviewed, vetted argument that cites and speaks to the conventions of a particular discourse and represents the views of an author who has gained authority by having passed a series of "tests" that credential the author to speak in legitimated utterances. Authors are generally affiliated with an institution which grants authority to their utterances by virtue of various rules of inclusion and exclusion (i.e., the tenure and promotion system, the imprimatur of book and journal publishing, the grant and foundation support industry, and so forth). The places where works are published, such as journals

and university press books, have established themselves as authoritative sources of knowledge by virtue of strict mechanisms for peer review, scholarly vetting, and institutional reputation which has been built up over decades, sometimes even centuries.

What happens when anyone can speak and publish? What happens when knowledge credentialing is no longer controlled solely by institutions of higher learning?

These are serious questions confronting the institutions that function within and maintain the social life of the Digital Humanities.

Transforming Publishing and Access

Scholars in the humanities have become used to social norms of knowledge formation and dissemination. Nothing seems more natural to this social structure than the idea that scholars write manuscripts, that publishers produce them as books, and that libraries aggregate them as collections and provide access and other services for reading and research. The inherited norm is that publishers commission authors or acquire intellectual property they deem worthy of making public. They review the manuscript's content and argument, and check for originality and legitimacy. A scholarly publication would elicit peer reviews. Fact-checking, line-editing, permissions for illustrations, layout, design, printing, and advertising all require a set of skills and professional expertise. Similarly, the tasks of librarians are specialized. Institutions differ, patrons have a host of varied profiles, and the needs of any particular library are specific to its setting and the services it provides, but traditionally these tasks have included acquisitions, cataloging, preservation, conservation, public services, outreach, and access. Digital publishing models, however, are challenging these long-standing roles and institutional boundaries.

A certain tension exists in the current environment as libraries and publishers confront a changing landscape, but it is important to state certain obligations that remain vital to humanistic inquiry no matter how technologies affect social constructions. The recent tight budgets for scholarly presses have pushed for reconsideration of the business models developed in the print environment. Formats are changing, but peer-review—which can now be extended even to the public sphere—remains crucial. Timelines and life cycles of information are shifting, but the need for reliable references remains; perhaps it is more urgent than ever. Licensing agreements and expectations about long-term access must be addressed

as must the recognition that a new business model has to emerge that takes seriously issues involving the evolution of intellectual property, open-source culture, copyright protections, and what has been referred to as the challenge of "copyleft" considerations. Print-based understandings of concepts such as first sale—buying a copy of a book grants the right to pass the book on—are problematic in a digital environment in which a copy of a text or work can be easily replicated and distributed. What are the rights of authors and of presses? How does society balance these rights against the needs of readers, scholars, libraries, and the broader public?

Emerging Fellowships of Discourse

The university has long shared the tasks of knowledge production, curation, stewardship, and storage with other cultural institutions such as laboratories, publishers, libraries, museums, and commercial producers. But the university legitimates knowledge in a privileged way, supervising rules of admission to and control over discourse. Not just anyone can speak with authority; one must first be sanctioned through lengthy and decidedly hierarchical processes, and the knowledge that is transmitted is primarily circulated within relatively closed communities of knowers, "fellowships of discourse" as Michel Foucault termed them. Statements are repeated and circulated through various disciplinary and institutional forms of control that legitimize what a "true statement" is within a given discipline. Before a statement can even be admitted to debate, it must first be, as Foucault argued repeatedly, "within the true." For an idea to fall "within the true," it must not only cite the normative truths of a given discipline, but it must fall "within the true" in terms of its methodology, medium, and mode of dissemination. Research articles can't be Wiki entries; book monographs can't be exhibitions curated in virtual worlds; seminars can't be held in gaming environments. Or can they?

What is at stake is a question of legitimation. **Who can create knowledge, who monitors it, who authorizes it, who disseminates it, whom does it influence and to what effect?** Legitimation is always, of course, connected with power, whether the power of a legal system, a government, a military, a board of directors, an information management system, the tenure and promotion system, the book publishing industry, a professional group, or any oversight agency. Not only are discursive

statements legitimized by the standards established by the practitioners and history of a given discipline, but so are the media in which such utterances are formulated, articulated, and disseminated.

The authorship function in the Digital Humanities is more collaborative, involving designers, coders, information architects, and server administrators, not to mention scholars from adjacent and nonadjacent disciplinary fields. And the notion of "the work" is significantly more porous and process-oriented, requiring a very different set of criteria to evaluate its merits. In the past, hermeneutic analysis sufficed because peer reviewers privileged the "insides" of a text: that is, they privileged what was said, how it was substantiated, and what was argued. An original argument pushed the boundaries of a given field forward but still operated within the theoretical, disciplinary, and media-specific paradigms of knowledge in that field. The medium that conveyed the argument was rendered transparent and neutral as in Beatrice Warde's long-cited image of the well-designed book as a "crystal goblet."

Digital Humanities denaturalizes print, awakening us to the importance of what N. Katherine Hayles calls "media-specific analysis" in order to focus attention on the technologies of inscription, the material support, the systems of writing down ("*Aufschreibesysteme*," as Friedrich Kittler puts it), the modes of navigation (whether turning pages or waving your hand), and the forms of authorship and creativity (not only of content but also of typography, page layout, and design). In this watershed moment, awareness of media-specificity is nearly inescapable and carries implications for the social life of these media as well.

Shaping New Norms

With the rise of new authoring platforms and collaborative environments, "supporting" apparatuses have been exposed as anything but transparent and neutral, as they not only determine modes of interaction and navigation but also condition and guide the production of meaning. Publication is not an endpoint or culmination of research, but is something significantly more process-oriented, indeterminate, experimental, and even experiential. Therefore, a whole new set of evaluative questions needs to be asked. We might take the following as new normative questions for evaluating humanities scholarship in general—that is to say, not just Digital Humanities scholarship:

How does the work present and advance an original argument that is bound up with and a function of the materiality and medium in which the argument is presented? In other words, what does materiality and media mean for the instantiation of the argument?

Who are the authors of the work and how are their contributions articulated and credited?

How does the design of the interface, the data structures, and the database convey meaning and function as part of the argument? How does a reader interact with the work, and how do the authors expose the rhetorical elements of their interface, data structures, and database?

Is the mode of navigation and kinetic signposting appropriate for the argument?

How complete is the bibliographic apparatus of the work and how do readers access both the sources cited and the data presented?

Can the work be deployed and enhanced by putting it in new contexts or in new digital environments with other projects?

Is the work extensible and iterative? That is to say, can it continue to grow as more research is done either by the author or other people?

How can the participatory dimension of the work be characterized? In other words, does the argument demand greater participation than page-turning or mouse clicks?

Does the scholarship support federated (non-silo based) approaches to scholarly publishing?

Above all, how does the work embody standards of traditional scholarship that can inspire a broad community with its insights?

These kinds of questions interject a different set of evaluative metrics into humanities scholarship while raising the bar for digital work. We are still at the very earliest stages of understanding and legitimating these emergent knowledge formations. We do not want to lose sight of the core values by which scholarship is judged, and we also want to be sure we can answer skeptics ready to assert that the Digital Humanities is all technique and lacks content.

Such a balanced approach not only underscores a fundamental rethinking of *how* knowledge gets designed and created, but also a fundamental rethinking of *what* knowledge looks and sounds like, *who* gets to create and interact with knowledge, *when* it is made and recognized, *how* it gets authorized and evaluated, and *how* it is made accessible to a significantly broader (and potentially global) audience. This is why we must discuss the social life of the Digital Humanities holistically, rather than follow a piecemeal, instrumentalist approach. In the 21st century,

long-established institutions like universities and their presses have the potential to generate, legitimate, and disseminate knowledge in radically new ways, on a scale never before realized, involving technologies and communities that rarely (if ever) were engaged in a global knowledge-creation enterprise. We are just starting to understand and leverage that potential, and the question is how to sustain (and not short-circuit) this critical process of experimentation and risk-taking.

Decolonizing Knowledge

The ways in which we have been discussing the social life of the Digital Humanities have privileged technology's transformative impact upon scholarship. But there is a reciprocity that is less visible but equally important: The principles of humanist thinking, humanist creativity, and humanist critique have much to offer to computational methods. Humanistic design of digital environments can challenge and even undo the normative assumptions that encode ideological assumptions in operational features. Efficiency and transparency have been bywords of interface design. Yet digital humanists can imagine means to model the complex conditions of interpretation so that we come to a fundamentally different idea or demonstration of the ways engagement with the cognitive processes of reading, viewing, and navigating make meaning. The participatory environment of the creation of cultural materials calls for analysis and display of the co-dependent relation between communities of thought and their expression. We have yet to engage seriously with modeling environments that support cultural difference, rather than register it, often in static and even monolithic ways, on standard platforms developed by dominant industry players.

If the platforms set the terms of cultural production, then whose worldviews and ideologies will they embody and structure into the creation of knowledge?

Might we envision alternatives, for instance, to mapping the beliefs of indigenous peoples onto a Sloan Digital Sky Survey, and instead remake the presentation of the sky in the form of such beliefs? It is not that such interfaces and affordances "change" the sky so much that our appreciation of how people "see" the heavens becomes both deeper and broader. The decolonization of knowledge in the most profound sense will arrive only when we enable people to express their otherness, their difference, and their selves, through truly social and participatory forms of cultural creation.

If the organization of and navigation through information are statically structured, we move through massive amounts of material but do not change the ontologies, the very ways of knowing, that govern storage, access, and display. Humanistic interfaces are social as well as technological, and so will mutate and change, remaking the order of the knowledge field in response to modes of engagement, interpretive gestures, and linguistic and cultural differences. We have yet to fully examine and expose the historical dimensions of classification systems, epistemologies, and knowledge representations in ways that model and present their incommensurabilities across cultures, historical periods, and individual understandings. We must interrogate the spaces for the production of what gets to count as knowledge at a given moment, the modalities for the production and ordering of discourse, and the conditions of possibility for the configuration of knowledge into systems, classification schemata, representations, and ordering principles.

Bringing these fundamental features of humanistic inquiry into the digital environment is also essential work for the Digital Humanities. Building and using tools that are rooted in traditional humanities concerns—subjectivity, ambiguity, observer-dependent variables in the production of knowledge, contingency—will allow us to model knowledge and creative work both ontologically and socially. The next generation of Digital Humanities work will make a contribution to theory only if it can show how to think *in* digital methods, not just *with* digital tools. Indigenous, local, independent, and truly alternative humanities platforms are still only speculative concepts, latent, perhaps on the verge of emergence. The excitement lies in envisioning these possibilities and imagining how to shape future knowledge production along lines as yet unthought, unmapped, and unsaid. We need to take seriously the conviction that the humanities have their own methods—not based in calculation, automation, or statistical probability, but in ambiguity, interpretation, and in embodied and situated models of knowledge and knowing.

Revitalizing the Cultural Record

By conceiving of scholarship in ways that significantly involve community partners, cultural institutions, the private sector, nonprofits, and/or government agencies, the Digital Humanities expands both the notion of scholarship and the public sphere in order to create new sites and nodes of engagement. With such an expanded

definition of scholarship, digital humanists are able to place questions of social justice and civic engagement, for example, front-and-center. They are able to revitalize the cultural record in ways that involve citizens in the academic enterprise and bring the academy into the expanded public sphere. The result is a form of scholarship that is, by definition, applied: It applies the knowledge and methods of the humanities to pose new questions, to design new possibilities, and to create citizen-scholars who value the complexity, ambiguity, and differences that comprise our cultural record as a species.

By foregrounding the values of the humanities, such projects create an environment in which silenced voices, cultural differences, linguistic multiplicity, and historical perspectives vitally inform and expand the notion of "public" and the "public sphere." Documentary projects that integrate social media offer compelling examples of how technologies like Twitter can be used to give voice to people who are otherwise silenced. Crucial political events since the advent of social networking have shown how highly localized and accurate accounts of what was happening on the ground can be assembled using a combination of random and trusted informants, including everything from simultaneous postings to live feeds and messaging platforms, often with links to audio files and other media reports that help the world "see" and "hear" what is going on in real time. In effect, the digital portal becomes a global public sphere linked to precisely located events that, in turn, become part of a Web archive and living memorial.

While the "role" of social media has been feverishly debated in fomenting, planning, and sustaining revolutions since Twitter was first hailed as a revolutionary technology in Moldova in 2009 and YouTube became a living archive for election protests in Tehran during the summer of that same year, it seems incontestable that "something" is happening to media that is changing the way in which events unfold. If nothing else, there is a massive contraction and alignment of the event (an embodied and location-specific phenomenon), the representation of the event (through tweets, cellphone video and photographs, and so forth), and the dissemination of the event (through Web-based social networks and information channels). The result is a significantly more adaptable, amorphous, global, but also ephemeral public sphere, one which may, for example, be constituted in distributed locations simultaneously.

Publics and Counterpublics

While physical embodiment becomes simultaneously less and more important in constituting a public, it is also worth remembering that media and communication technologies have always played a fundamental role in creating what is understood as the public sphere. Jürgen Habermas' acclaimed study of the structural transformation of the public sphere showed it to be an invention of bourgeois society in the late 17TH and early 18TH centuries that came about through the rise of newspapers and novels as well as through new forms of sociability that encouraged discussion and debate. Print technologies and the spread of literacy were critical for the formation of "the public" and the rise of the modern nation-state, with the former specifically arrayed against the state as a locus of authority. Kant considered the "public use" of reason to be that of "a scholar before the entire public of the reading world," a definition that also betrayed the conspicuous limits of that term: Kant's public was constituted by literate men, who became literate because of their belonging to a particular socioeconomic stratum.

"Counterpublics" emerged as a parallel phenomenon, constituted by intellectuals, some of them outstanding women authors who organized salons in their homes—in tension with, often against, but still connected to, public discourse. In this regard, notions of "the public" and "the counterpublic" are exclusive and often even elite formations precisely because the admittance of members to discourse is socially and economically determined. More recently, attention has been paid to the discourses of the "subaltern," those whose class, race, and gender positions situate them fundamentally outside any dialectic of "public" and "counterpublic," creating dialogues that are barely recognizable as "public speech" because they do not stem from "within the true," as Foucault put it.

Perhaps, then, the utopian impulse of the Digital Humanities can be characterized as a modality of radically opening discourse to participation for everyone.

What if there were participation without condition?

What if utterances were neither admitted nor denied based on gender, sex, race, ethnicity, language, location, nationality, class, or access to technology? We are not saying that these facticities do not matter or cease to matter in the digital world; instead, we are saying that the utopian element of the Digital Humanities is to at least posit, if not fully enable, a future in which participation is possible for everyone, anywhere, anytime. It would be *as if* it were possible to bring about a public sphere in which no one was excluded. This is a core human value of the Digital Humanities.

Electronic Presses and Ubiquitous Libraries

For many centuries, university presses have played a crucial role in establishing the currency of the humanistic profession in formats and practices. Monographs, edited collections, critical editions, and scholarly journals are the basic elements of research and professional development. Careers are made on the basis of vetted and peer-reviewed literature in the form of essays and book manuscripts. The presses have the expertise to create marketing plans, assess audience, and develop distribution networks with libraries and scholars. Acquisitions editors keep tabs on their fields with expert attention—attending conferences, tracking the intellectual development of disciplines, and helping shape the discourse in any particular field by the work they recognize through publication. This bedrock expertise combined with a professional commitment to disciplines and discourses must continue to be supported by salaried jobs and institutional frameworks even as the social and economic conditions of academic publishing change in the digital era.

As the social life of the Digital Humanities evolves, many university research libraries are also reconsidering their charge. Can they continue to afford to collect serial work that essentially buys the right to distribute intellectual research that has been created by faculty on their own campus? This is the real problem of skyrocketing scholarly journal prices. And what happens to licensed material if a service provider or company goes out of business and the link to published work disappears? Here we confront the issues of bit rot, technological obsolescence, and the risks of investing in emergent technologies. Many considerations enter into the mix. Are copies stored on local servers in the library? Or are links to a repository the only means of accessing intellectual work? Many of the thorniest problems are social rather than technological. Putting knowledge in protected silos, areas in which scholarship is only available to a limited community of academic professionals, can hugely benefit those select scholars. But such lockdowns go against the impulse to bring the best cutting-edge work before the broadest possible audience.

Add to this mix the problem of finding a recognized and visible portal for exposing new digitally published research. In particular, if the granularity of contributions changes, so that annotations, code, data sets, or large-scale processing are considered units of argument, then where and how will these be recognized and acknowledged? If posting becomes equivalent to publishing (on a blog or a social media site, via a live feed or other as-yet-to-be-imagined platform), then our

definitions of scholarly publishing and our traditional obligation to preserve, catalog, and provide access and reference to these pieces will push us toward radically new understandings of the roles of both libraries and publishers. Distribution mechanisms will need to evolve in ways that recognize the productive distinction between popular work and more specialized scholarship, and address the complex set of issues that will continue to emerge around intellectual property, licensing and use, peer-review, and the role of professionals in publishing, preserving, and providing access to scholarship. The challenge of maintaining platforms, as well as works, will only complicate matters further, as the iterative versions of software and hardware for access and display, driven by market forces and industry agendas, compete with the longevity and stability that print forms have accustomed us to over the centuries.

To be sure, the need to avoid redundancy and optimize resources will drive part of the reconfiguration of publishing in the digital realm. But the theoretical issues remain: What is a publication?

Who will undertake the making-public of arguments, research projects, repositories, archives, and other materials of the human record, its creative expression and interpretation?

New concepts are already transforming notions of publishing, publicity, and the public. The digital turn in scholarship is bringing into view genres undreamt of in earlier media. As it does this, libraries and publishers will forge alliances that distribute old tasks along new lines as they take on novel responsibilities and forms of engagement unforeseen in an analog world.

The Care and Feeding of Hedgefoxes

Digital Humanities has many goals. Some involve research; some focus on outreach to broader publics; some are pedagogical in nature. One of the fundamental questions confronting Digital Humanities is what kind of student will its methods produce? If the academy and society support Digital Humanities, what kinds of students will they train and how will these students shape the world? An alternate method is to imagine the kind of students one would like to see, and then work backward to envision the educational environments most conducive to producing such a cohort. This kind of hypothetical persona-building allows us to reinvigorate all-but-exhausted discussions about the broader implications of a liberal arts education, and ties these issues back to the discussion of Digital Humanities as forming a core curriculum. The kind of student universities train leads to the questions of

what sort of citizens they can become, how they will function as autonomous individuals, and how they will integrate themselves into society.

To think through these questions, it is worth reaching back. Two-and-a-half millennia ago, the Greek poet Archilochus broke the world of knowledge into two camps, represented by two different types: "the fox knows many things, but the hedgehog knows one big thing." Half a century ago, Isaiah Berlin reworked this metaphor to divide thinkers "between those… who relate everything to a single central vision, one system less or more coherent or articulate… [and] those who pursue many ends, often unrelated and even contradictory, connected, if at all, only in some de facto way." Berlin made no claims for the superiority of the ways of either the fox or the hedgehog, and devoted an essay to the productive conflict Leo Tolstoy generated as a fox who thought he was a hedgehog.

We are in an era far different from the Greek poet's, the Russian novelist's, and the English don's. There can be little doubt that the technologies that give rise to the Digital Humanities push us—scholars, students, and citizens alike—into the fox family. The nature of discourse and debate in networks, the reality of study in multimedia environments, and the inexorable splintering of attention that multiple windows and channels afford lead to pursuing "many ends." This tendency toward multi-tasking and shortened attention has a multitude of detractors, of course, as well as the usual contrarian supporters of the "everything bad for you is good for you" variety. But the Digital Humanities can confront this reality on the ground (and in the ether) without either nostalgia for a reader's paradise that never was or the kind of hype over technology that we expect from industry. The Digital Humanities has methodologies that can harness the habits and possibilities of the minds of a networked generation to create better and more inquisitive foxes.

Yet what of the hedgehog? It is precisely the hedgehog's tenacity, its willingness to spend months, years, and decades in pursuit of a "single central vision" that ties it to the practice of the humanities. There are fewer opportunities for the long haul and the deep dig in a society that embraces the business quarter, instant access, and machine time. The traditions of the humanities, on the other hand, embrace the durational, accepting that some studies will take years to complete, that certain ideas, needless to say conclusions, demand lengthy gestation. The multivolume study, the life devoted to a specific slice of a discipline, these are the hallmarks of the humanities, and the Digital Humanities would be foolish indeed to abandon its inner hedgehog.

How can the Digital Humanities keep the ways of the hedgehog alive in the era of the fox's ascendance? How do we inject deep digs into the free-ranging ways of networked scholarship?

The hedgehog's great depth is inspiring for its rigor; the fox's curiosity is astonishing in its energy. It is not an either/or situation: the goal is hybridization, the creation of hedgefoxes, capable of ranging wide, but also of going deep. Making the move from creating, appreciating, and interpreting the hedgefox aesthetic to responsible, 21ST century citizenship requires that students of Digital Humanities see social networks as having both pro- and anti-social agendas, that they develop political literacies, and that they harness the collaborative energy of their academic experiences and apply them to the broader culture.

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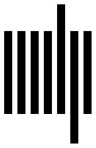

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