Debates in the Digital Humanities

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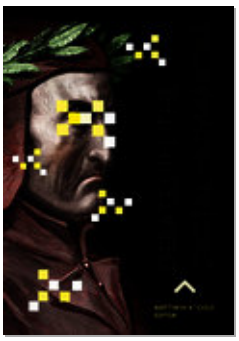

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Where Is Cultural Criticism in the Digital Humanities?

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As the cue for a thesis I wish to offer about the future of the digital humanities, I start by confessing to a lie I inserted in the last paragraph of the mission statement of 4Humanities. 4Humanities is an initiative I helped cofound with other digital humanists in November 2010 to advocate for the humanities at a time when economic retrenchment has accelerated a long-term decline in the perceived value of the humanities.[1] It serves as a platform for advocacy statements and campaigns, international news on the state of the humanities, showcase examples of humanities work, "student voices" for the humanities, and other ways of speaking up publicly for the humanities. But unlike other humanities advocacy campaigns—for example, those of the National Humanities Alliance in the United States or the Defend the Arts and Humanities and Humanities and Social Sciences Matter initiatives in the United Kingdom—it has a special premise. As emblematized in the motto on its website, 4Humanities is "powered by the digital humanities community." The idea is that in today's world of networked communications the digital humanities have a special role to play in helping the humanities reach out. The last paragraph of the 4Humanities mission statement (which I wrote) thus asserts,

> 4Humanities began because the digital humanities community—which specializes in making creative use of digital technology to advance humanities research and teaching as well as to think about the basic nature of the new media and technologies—woke up to its special potential and responsibility to assist humanities advocacy. The digital humanities are increasingly integrated in the humanities at large. They catch the eye of administrators and funding agencies who otherwise dismiss the humanities as yesterday's news. They connect across disciplines with science and engineering fields. They have the potential to use new technologies to help the humanities communicate with, and adapt to, contemporary society.

But, in reality, the past tense in the wake-up call here ("the digital humanities community . . . woke up to its special potential and responsibility to assist humanities

advocacy") is counterfactual or, at best, proleptic. It's a tactical lie in the service of a hope.

In outline form, my thesis about the digital humanities is as follows. While my opening stance is critical, my final goal is hopeful: to recommend how the deficit in the digital humanities I identify may convert antithetically into an opportunity.

The digital humanities have been oblivious to cultural criticism

After the era of May 1968, one of the leading features of the humanities has been cultural criticism, including both interpretive cultural studies and edgier cultural critique.[2] In parallel, we recall, the computer industry developed the personal computer and networking in the 1970s and 1980s in a Zeitgeist marked by its own kind of cultural criticism: cyberlibertarianism in conjunction with social-justice activism (e.g., in the vintage manner of the Computer Professionals for Social Responsibility or the Electronic Frontier Foundation).[3] Yet in all that time, as it were, the digital humanities (initially known even more soberly as "humanities computing") never once inhaled. Especially by contrast with "new media studies," whose provocateur artists, net critics, tactical media theorists, hacktivists, and so on, blend post-1960s media theory, poststructuralist theory, and political critique into "net critique" and other kinds of digital cultural criticism, the digital humanities are noticeably missing in action on the cultural-critical scene.[4] While digital humanists develop tools, data, and metadata critically, therefore (e.g., debating the "ordered hierarchy of content objects" principle; disputing whether computation is best used for truth finding or, as Lisa Samuels and Jerome McGann put it, "deformance"; and so on) rarely do they extend their critique to the full register of society, economics, politics, or culture.[5] How the digital humanities advances, channels, or resists today's great postindustrial, neoliberal, corporate, and global flows of information-cum-capital is thus a question rarely heard in the digital humanities associations, conferences, journals, and projects with which I am familiar. Not even the clichéd forms of such issues—for example, "the digital divide," "surveillance," "privacy," "copyright," and so on—get much play.

It is as if, when the order comes down from the funding agencies, university administrations, and other bodies mediating today's dominant socioeconomic and political beliefs, digital humanists just concentrate on pushing the "execute" button on projects that amass the most data for the greatest number, process that data most efficiently and flexibly (flexible efficiency being the hallmark of postindustrialism), and manage the whole through ever "smarter" standards, protocols, schema, templates, and databases uplifting Frederick Winslow Taylor's original scientific industrialism into ultraflexible postindustrial content management systems camouflaged as digital editions, libraries, and archives—all without pausing to reflect on the relation of the whole digital juggernaut to the new world order.

As I have argued in my *Laws of Cool*, producers and consumers in other social sectors who are uneasy about the new world order of "knowledge work" at least express their paradoxical conformance and resistance to that order though the subtle ethos of "cool." Digital humanists are not even cool.

The lack of cultural criticism blocks the digital humanities from becoming a full partner of the humanities

Of course, cultural criticism is not without its problems (about which more later). But for the sake of the digital humanities, I call special attention to the lack of cultural criticism because I fear that it will block the field's further growth just as it is at a threshold point.

Consider that digital humanists are finally coming close to their long deferred dream of being recognized as full partners of the humanities. Extrinsic indicators include stories in the press about the digital humanities being "the next big thing"; the proliferation of digital humanities jobs, programs, panels, grants, and publications; and in general (as I have summed up elsewhere in taking stock of the field) more mind share.[6] Perhaps most telling, however, is an intrinsic methodological indicator: the proximity of the digital humanities to the current "close reading" versus "distant reading" debate (as it is called in literary studies, with analogies in other humanities and social science fields).[7] In this regard, Katherine Hayles's "How We Read: Close, Hyper, Machine"—one of the recent wave of essays, talks, and panels contributing to the debate—is quite shrewd in observing that the whole issue is supercharged because, after literary scholars turned to cultural texts beyond traditional literature, close reading (originally theorized and practiced by the New Criticism) assumed a compensatory role as what remained quintessentially *literary*, thus assuming "a preeminent role as the essence of the disciplinary identity" of literary studies (63).

While this is not the place for a detailed examination of the close versus distant reading debate (to which I have myself contributed [Liu, "Close"]), it is apropos to recognize that the debate serves as a proxy for the present state of the running battle between New Critical method and post–May 1968 cultural criticism. Indeed, we recall that close reading came into dominance only after the New Critics fought polemical battles against a *prior* age of cultural criticism whose methods were in their own way distant reading. I refer to nineteenth-century historicist, philosophical, religious, moral, and philological reading, which culled archives of documents to synthesize a "spirit" (*Geist*) of the times, nations, languages, and peoples capable of redeeming the other, darker people's identity haunting the century: the French revolutionary mob. The New Critics displaced such *Historismus* (as the Germans called such historism), but only to urge an equivalent project of modern reclamation. Rejecting alongside *Historismus* (and the related intellectual tradition of *Geistesgeschicte)* also the "paraphrase" of contemporary scientific discourse and

mass media information, they defended their notion of an individual human sensibility rooted in organic culture (originally, the yeoman small-farm culture idealized in their southern agrarian phase) against the other, "northern" people's identity of the time: modern mass industrial society.[8]

May 1968 marked the return of the repressed: a surge in postmodern, rather than modern, theories of discourse and culture that identified the human as ipso facto collective and systemic. Even if a distinctively new decentralized and bottom-up ideology inspired Gilles Deleuze and Félix Guattari, for instance, to celebrate wolf packs, Mongol hordes, and schizos quite different from the nineteenth-century *Geist*, it seemed clear that humanity was congenitally structural, epistemic, class based, identity-group based (gendered, racial, ethnic), and so on. Currently, distant reading is a catch-all for that. Indeed, the method is a catch-all for cultural-critical methods extending back even earlier than May 1968 to some of the main influences on the work of Franco Moretti (the leading practitioner and theorist of distant reading): Braudelian (Annales) historiography and Marxist literary sociology, which—mixed into New Criticism and genre theory (the latter descending, for example, from Western Marxist criticism in Georg Lukács's mode)—generate Moretti's powerful thesis of the social "force" of "forms."[9]

Now enter the digital humanities, which have been invited to the main table of debate. As symbolized by Moretti's collaboration at Stanford with the digital humanist Matthew Jockers (the two have started the Stanford Literary Lab and worked together on quantitative stylistics research), the digital humanities are now what may be called the *practicing partner* of distant reading. I choose this phrase not to imply that everyone else since May 1968 has been disengaged from practice but to spotlight the fact that digital humanities practice assumes a special significance qua practice because it is positioned at a destabilizing location in the post–May 1968 balance of methods. In reality, we recall, the running battle between the New Criticism and critical methods après 1968 fairly quickly settled into a cold war. Generation '68, including cultural critics, occupied the high ground of "theory." The New Criticism, meanwhile, dug into the ordinary, pedagogical, and even existential levels of reading practice—to the extent that even high theorists took pride in grounding their method in close reading. Just as deconstruction was ultraclose reading, for instance, so the New Historicism read the microhistory of "anecdotes."[10] An unspoken demilitarized zone thus intervened between close and cultural-critical reading.

The digital humanities break this détente. Sophisticated digital humanities methods that require explicit programmatic instructions and metadata schema now take the ground of elemental practice previously occupied by equally sophisticated but tacit close reading methods. Moretti and his collaborators, therefore, explore "the great unread" of vast quantities of literature (rather than only exceptional literature) through text analysis, topic modeling, data mining, pattern recognition, and visualization methods that have to be practiced at the *beginning* and not just interpretive or theoretical end of literary study.[11] Adding to the casus belli is the fact that

the contrast between the practices of close reading and the digital humanities is so stark that it is changing the very nature of the ground being fought over: the text. The relevant text is no longer the New Critical "poem [text] itself" but instead the digital humanities archive, corpus, or network—a situation aggravated even further because block quotations serving as a middle ground for fluid movement between close and distant reading are disappearing from view. We imagine, after all, that even as bold a distant reader as Moretti still at times—or even most times—wants to pause to close read en bloc literary passages as he encounters them. But block quotations have a different status in the digital humanities. Either they drop out of perception entirely because text analysis focuses on microlevel linguistic features (e.g., word frequencies) that map directly over macrolevel phenomena (e.g., different genres or nationalities of novels) without need for the middle level of quoted passages; or they exist as what hypertext theorists, originally inspired by Roland Barthes, call "lexia"—that is, modular chunks in a larger network where the real interest inheres in the global pattern of the network.[12] In either case, one noticeable effect of distant reading in Moretti and Jockers's mode is that data visualizations of large patterns increasingly replace block quotations as the objects of sustained focus. One now close reads graphs and diagrams that have roughly the same cognitive weight (and even visual size on the page) as block quotations of old, even if the mode of "meaningfulness" to be read off such visualizations is of a different order (linking the act of analysis more to breadth of field than to a sense of depth or emplacement).

The upshot is that digital humanists will never get a better invite to the table, as I put it, where the mainstream humanities are renegotiating the relation between qualitative methods premised on a high quotient of tacit understanding and quantitative methods requiring a different rigor of programmatic understanding. All those lonely decades of work on text encoding, text analysis, digital archives or editions, online reading tools or environments, and other incunabula of digital scholarship are now not so lonely. Mainstream humanists have come to recognize that, at minimum, they need a search function to do research; and the nature of digital media is such that the transition from the minimum to the maximum is almost instantaneous. No sooner does one come to depend on online searching then it becomes intuitive that one also needs advanced digital humanities tools and resources to practice scholarship in the age of Google Books. Indeed, Google itself has encouraged the creation of new digital humanities methods for using Google Books through its Digital Humanities Research Awards (Orwant).

But will digital humanists be able to claim their place at the table? Or, as in the past, will they once more be merely servants at the table whose practice is perceived to be purely instrumental to the main work of the humanities?[13] This is the blockage in the growth of the field that I fear. Consider the nature of some of the scholarly works that have recently had the greatest impact in turning the attention of the humanities to large literary systems—for example, Moretti's *Graphs, Maps, Trees* and Pascale Casanova's *The World Republic of Letters*. Both of these remarkable

books, which participate in what James F. English calls the "new sociology of literature," frame their corporate- or system-scale analyses of literature in cultural criticism—specifically, a combination of Braudelian historiography, Marxist sociology (in Casanova's case, an Immanuel Wallerstein–like "core versus periphery" analysis of world literature), and global-scale literary comparatism. The lesson to digital humanists should be clear. While digital humanists have the practical tools and data, they will never be in the same league as Moretti, Casanova, and others unless they can move seamlessly between text analysis and cultural analysis. After all, it can be said that digital materials on the scale of corpora, databases, distributed repositories, and so on—specialties of the digital humanities—are ipso facto cultural phenomena. The people behind Google Books Ngram Viewer say it. In their groundbreaking *Science* article (paralleled by Google's release of its Ngram Viewer), Jean-Baptiste Michel and Erez Lieberman Aiden (with their collaborators) call their quantitative analyses of Google Books a contribution to "culturomics." So, too, the Software Studies Initiative at the University of California, San Diego, is well advanced in developing what it calls "cultural analytics."[14] Where are the digital humanists in the picture? To be an equal partner—rather than, again, just a servant—at the table, digital humanists will need to show that thinking critically about metadata, for instance, scales into thinking critically about the power, finance, and other governance protocols of the world.

The digital humanities can transcend their "servant" role in the humanities through leadership in advocating for the humanities

Engagement with cultural criticism, I am saying, is necessary for the digital humanities to be a full partner of the mainstream humanities today. But it is not enough for digital humanists to add cultural criticism to their brief in a "me too" way. Partners are not just followers. They become partners only by being able to rotate into the leadership role when their special competencies are needed. Truly to partner with the mainstream humanities, digital humanists now need to incorporate cultural criticism in a way that shows leadership in the humanities.

I believe that the service function of the digital humanities—as literal as running the actual servers, if need be—can convert into leadership if such service can be extended beyond facilitating research in the academy (the usual digital humanities remit) to assisting in advocacy *outside* the academy in the humanities' present hour of social, economic, and political need. I refer to the economic recession beginning in 2007 that gave warrant to nations, regional governments, and universities to cut funding for the humanities and arts in favor of fields perceived to apply more directly to society's well-being, especially the STEM fields (science, technology, engineering, mathematics).[15] Of course, this is an old story that goes back as far as the "two cultures" problem named by C. P. Snow. What is new is that the scale of the Great Recession of 2007—bringing a climax to decades of neoliberal

and postindustrial trends that shift the work and value of knowledge away from the academy—is leading to a changed paradigm. Especially in public university systems, which are exposed most directly to changing social, economic, and political attitudes, the new normal threatens to solve the two cultures problem by effectively subtracting one of the cultures. The humanities, arts, and other disciplines that rely disproportionately on funds not supplied by industry or national agencies for science, medicine, and defense are in peril of systematic defunding.

Simultaneous with such defunding, another peril threatens the humanities: the continuing breakdown in their ability to communicate with the public. This, too, is an old story that extends back, for instance, to the decline of the fabled "public intellectual" in the twentieth century. What is new today is that the Internet and, most recently, Web 2.0 have altered the very idea of effective public communication by changing the relation between "experts," traditionally those with something valuable to communicate, and the public, who traditionally listened to expertise (or at least media reports about expertise) and responded with votes, tuition dollars, fees, and so on to support the various expert institutions and professions. As perhaps best exemplified by Wikipedia, the new networked public is now developing its own faculty of expertise through bottom-up processes of credentialing (e.g., Wikipedia's "administrators"), refereeing, governance, and so on. It will take at least a generation for the academy (and mediating agencies such as journalism) to create or adapt the institutional protocols, practices, and technologies that can negotiate a new compact of knowledge between expertise and networked public knowledge—for example, between the standards of peer review and crowdsourcing. In the meantime, the humanities are caught in a particularly vicious form of the communicational impasse of expertise. While the networked public still tolerates specialized knowledge from scientists, engineers, doctors, and others, it seems to have ever less patience for specialized humanities knowledge, since in the domain of "human" experience everyman with his blog is an autodidact. And this is not even to mention the ridiculous mismatch between the forms of humanities knowledge and the new networked public knowledge—for example, between the scale, structure, and cadence of a humanities monograph and those of a blog post or tweet.[16]

In short, just when the humanities need more than ever to communicate their vision of humanity (and so their own value) to the public, they find themselves increasingly cut off from the modes of communication that produce some of today's most robust discourses of public knowledge. While able like anyone else to reach out through the new media, humanities scholars by and large must do so as *individuals* unsupported by any of the institutional and professional structures that afford them their particular identity qua humanists or scholars.

Hence the unique leadership opportunity for the digital humanities. As digital humanists simultaneously evolve institutional identities for themselves tied to the mainstream humanities and explore new technologies, they become ideally positioned to create, adapt, and disseminate new methods for communicating between

the humanities and the public. At a minimum, digital humanists—perhaps in alliance with social scientists who study Internet social activism—might facilitate innovative uses of new media for such traditional forms of advocacy as essays, editorials, petitions, letter-writing campaigns, and so on. But really, digital humanists should create technologies that fundamentally reimagine humanities advocacy. The goal, I suggest, is to build advocacy into the ordinary work of the humanities, so that research and teaching organically generate advocacy in the form of publicly meaningful representations of the humanities. As a starting point, for example, consider how something like the Open Journal Systems (OJS) publication platform might be extended for this purpose. Created by the Public Knowledge Project, OJS facilitates the publication and management of online journals while also providing "reading tools" that assist users in pursuing additional research (e.g., looking beyond an individual text through search and aggregation tools that give a glimpse of the relevant context). Imagine that OJS could be mashed up with text analysis and extraction tools as well as output platforms like OMEKA or the Simile Exhibit and Timeline widgets designed to break scholarship free of the "document" format, with the result that the publication process automatically generates from every article a "capture" of humanities scholarship that is not just an abstract but something more akin to a brochure, poster, video, or other high-impact brief—that is, something that could expose the gist of scholarship for public view and use.

The idea is to create ways to allow humanities scholars deliberately, spontaneously, or collaboratively to generate a bow wave of public awareness about their research and teaching that propagates outward as part of the natural process of research and teaching. After all, millions tune in each week to watch crab fishermen on the Discovery Channel (*Deadliest Catch*). Humanists may not be salt-of-the-earth crabbers, and archives may not be as stormy as the high seas. But surely, humanists ought on occasion to try to share the excitement of the chase by which breakthrough intellectual discoveries and movements occur. A beautifully designed, visually rich report published by the United Kingdom's JISC (Joint Information Systems Committee) in 2010 titled "Inspiring Research, Inspiring Scholarship: The Value and Benefits of Digitised Resources for Learning, Teaching, Research and Enjoyment" gives the flavor of what I mean (Tanner). The text of the brochure begins in an everyman-as-researcher mode as follows: "Imagine walking into one of Britain's great cathedrals. As you take in the architectural, cultural and religious ambience, your personal mobile device automatically engages with content on your behalf." Similarly, one of my initiatives while participating during 2009 through 2010 in a working group of the University of California (UC) Commission on the Future (convened by the regents of the UC system to explore new paradigms for the university in a bleak future of permanently reduced state funding) was to canvass humanities, arts, and social science scholars throughout UC for showcase research examples that might be presented to the public in an advocacy effort. The results, which I mocked up as a document full of blurbs and pictures for each example, are

not ready for publication, but I can attest that the examples are definitively there. Sample headlines include "Treasure of Previously Unknown Letters by Benjamin Franklin," "World History For Us All," "Students Learn from California Holocaust Survivors," "The Prehistory of Multitasking," "UC and Human Rights Around the World," and "What is the Community Reading?" (Liu, "UC Research Contributions to the Public"). While humanities scholarship can sometimes seem abstruse, minute, or nonsensical to the public (true of all fields), there are also a stunning number of projects that intuitively, profoundly, and movingly demonstrate the public value of the humanities—many of them, not incidentally, designed around or otherwise centrally facilitated by digital technologies.

Beyond acting in an instrumental role, the digital humanities can most profoundly advocate for the humanities by helping to broaden the very idea of instrumentalism, technological, and otherwise. This could be its unique contribution to cultural criticism

Earlier, I deprecated the idea of "service." The digital humanities, I said, need to transcend their role as "just a servant" of the humanities to take a leadership role. Yet in apparent contradiction, my imagination of such leadership has so far been instrumental in a manner that does not exceed a narrow, if cutting-edge, service concept. The digital humanities, I argued, can create, adapt, and disseminate new tools and methods for reestablishing communication between the humanities and the public. This contradiction brings to view a complex matrix of issues that is both a problem and an opportunity for the digital humanities, since ultimately it shows digital humanists to occupy a strategic niche in the humanities and even society as a whole, where the same issues are in play.

Within the digital humanities, to start with, we observe that service and instrumentalism are part of a tangle of related concepts—including functionalism, tools, and (as I earlier deployed the term) practice—about which the field is deeply insecure. On the one hand, digital humanists worry that their field is too instrumental. Witness the vigorous thread on the *Humanist* list in 2010 on "Industrialisation of the Digital Humanities?" (McCarty, "Industrialisation"). Willard McCarty, the list's moderator, touched off the discussion by reflecting, "I fear that the digital humanities is becoming dominated by purely technical concerns of implementation. . . . One sign of this industrialization is the spread of technological orthodoxy under the banner of technical standards." Just as rambunctious was the *Humanist* thread that McCarty triggered the next year with his post titled "In Denial?" where—to use Internet parlance—he trolled (i.e., baited) the list with the statement, "I'd be interested to know if you have recently heard anyone assert that the computer is 'just a tool' and what you think [they] may have been meant by that phrase." The sustained discussion that followed shows that McCarty hit a sensitive nerve.

Yet on the other hand, digital humanists also worry that their field is not instrumental *enough* by comparison with engineering fields where instrumentality has the prestige of "innovation" and "building." Thus the "I am more builder than thou" controversy that arose around Stephen Ramsay's paper at the 2011 Modern Language Association Convention, which threw down the gauntlet to those in the digital humanities who mainly just study, interpret, or supervise by saying, "Do you have to know how to code? . . . I say 'yes.' . . . Personally, I think Digital Humanities is about building things. I'm willing to entertain highly expansive definitions of what it means to build something. . . . If you are not making anything, you are not . . . a digital humanist" ("Who's In and Who's Out"; see also his follow-up post "On Building").

But now I will widen the context. The insecurity of the digital humanities about instrumentalism, we should realize, simply shifts to a new register a worry experienced by the humanities at large. On the one hand, the humanities also struggle against the perception that they are primarily instrumental because their assigned role is to provide students with a skill set needed for future life and work. For example, the rhetoric of university course catalogs (which speak of the humanities as providers of "skills" in critical analysis, language, and so on) combines with the insidious logic of higher teaching loads for humanists to imply that the main function of the humanities is service: they teach the analytical, communicational, and other abilities needed as means to other ends. In truth, it may be that no matter how much the humanities try to position themselves as research or ethical pursuits in their own right, they will find it hard to break out of the instrumentalist syndrome simply because, by comparison with the STEM (and, to a lesser extent, social science) fields, they are identified almost entirely with the academy itself as a means of student preparation. There are relatively few extra-academic research labs, think tanks, clinics, and so on able to give a home to the humanities in autonomous or advanced, rather than preparatory, social roles.

On the other hand, clearly, the humanities suffer even more from seeming to be noninstrumental to the point of uselessness. In hard economic times (a real-life incident from my own experience), parents actually come up to chairs of English departments at graduation to complain that their daughter's humanities degree is only good for working at Starbucks.[17] The catch-22 is that the harder the humanities work to become research enterprises equipping students with specialized competencies and vocabularies, the more cut off they seem from practical use. This is particularly galling for post–May 1968 cultural critics, who addressed their advanced research methods to praxis but, if anything, reinforced the impression that humanist critique is only interpretive, reflective, politically marginal, skeptical, or nihilist—that is, unrealpolitik.[18] Much of my own early work in cultural criticism (and also as an internal critic of the method) was devoted to exploring this and related problems—for example, in the essays on subversion collected in my *Local Transcendence: Essays on Postmodern Historicism and the Database*. As I put it,

"what kind of movement is subversion anyway—the single action still allowed in a New Historicist universe become like a gigantic, too-quiet house within which, somewhere, in one of the walls, perhaps, insects chew?" (47).

Now let me widen the context to the furthest extent. To be fair to the humanities, they are just the canary in the mine for the problem that modern society has with instrumentalism generally. A thumbnail history (or fable) of the issue might be as follows. In the premodern version, the players were God, nature, man, and free will. God determined what happened; nature was the instrumentality of that happening; humanity received the instruction set; and then humanity messed up by listening to the serpent, hacking the tree of knowledge, and staking human identity on free will and all its woe. At the moment of the fall, which was also the Promethean ascent into knowledge for its own sake, instrumentality became radically overdetermined. Nature (the tree) became more than an instrument. It became a mark of human identity. Instrumentality, specifically in regard to knowledge, exceeded the status of a means/medium to become an end that was at once necessary for the full experience of humanity and (because it meant exile from paradise) dehumanizing.

In the modern (and postmodern) version of the tale, the players are determination, technology, humanity, and—again—free will. It is hard to underestimate the problem that modernity has had with determination of all sorts after the age of God. Accusations of "media determinism" and "technological determinism" leveled at media theorists, for instance, are merely symptomatic of the uncertainty that modernity feels about secular determinism in toto. Touch just one of the levers of media or technological determinism, and it soon becomes clear that they connect to the total machine of historical, material, and social determinism that is both the condition and dilemma of modernity. Once the Enlightenment desacralized God, modernity came to believe that things happen because they are caused by material-cum-historical determination. Nature and history were now the compound instrumentality that became overdetermined. Nature and history, as invoked in the French Revolution and its aftermath, marked human identity as freedom (since causality became an affair of humans endowed by nature with the possibility of self-determination). Yet of course, nature and history also rapidly became a new dehumanizing slavery to nineteenth- and twentieth-century modes of empire, evolution, economics, and industry.

To put it mildly, in sum, contemporary society is existentially uncomfortable about determination and its instrumental agencies. It may very well be that the concept of "culture" originally rose into prominence to make the problem of determination if not solvable then what Claude Lévi-Strauss, in a memorable phrase, called "good to think" (89). *Historismus* and *Geistesgeschichte* in the nineteenth century, for example, converged in a *Kulturgeschichte* (cultural history or history of civilization) whose metanarratives created the fiction of an equivocal middle ground between determination and free will. Humanity was constrained by natural, psychological, historical, and social forces; yet a will to be human, or *Geist,* nevertheless

came to light through the cultural workings of those forces. A compelling recent example is the idea of corporate culture in the United States, which emerged after the 1970s in conjunction with the expansion of the so-called service industries, especially in the areas of "knowledge work." In the new service industries, men and women were imprisoned by global socioeconomic forces in little cubicles staring at even smaller cells in a spreadsheet. Corporate culture was an expression of that, since the idea was that strong corporations have totalizing cultures that determine (and are constantly reinforced by) everything from information technology practices to company slogans and social events. Yet paradoxically, corporate culture was also supposed to incubate in workers the spirit of "disruptive" innovation and entrepreneurship that is the mark of neoliberal freedom.[19] It's as if we all live in the universe of Iain M. Banks's richly imagined science fiction novels set in the universe of "the Culture," a sprawling galactic civilization that dominates in a totally distributed, decentralized, Western-liberal style at once wholly determinative and utterly laissez-faire in its encouragement of individual freedom.[20]

My conclusion—or, perhaps, just a hopeful guess—is that the appropriate, unique contribution that the digital humanities can make to cultural criticism at the present time is to use the tools, paradigms, and concepts of digital technologies to help rethink the idea of instrumentality. The goal, as I put it earlier, is to think "critically about metadata" (and everything else related to digital technologies) in a way that "scales into thinking critically about the power, finance, and other governance protocols of the world." Phrased even more expansively, the goal is to rethink instrumentality so that it includes both humanistic and STEM fields in a culturally broad, and not just narrowly purposive, ideal of service.

In particular, my recommendation for the digital humanities is two-fold: First, while continuing to concentrate on research and development in its core areas (e.g., text encoding, text analysis, pattern discovery, the creation of digital archives and resources), digital humanists should enter into fuller dialogue with the adjacent fields of new media studies and media archaeology so as to extend reflection on core instrumental technologies in cultural and historical directions. The time is long overdue for staging major conferences or programs designed specifically to put digital humanists in the same room, for example, with new media artists, hackers, and media theorists. In that room, standard issues in the digital humanities (such as "standards" themselves) could be enlarged with sociocultural meaning. Individuals working in the digital humanities, or who straddle fields, already increasingly engage in such dialogue. What is needed now is the elevation of the dialogue to the front and center of the discipline of the digital humanities.

Second, digital humanists should also enter into dialogue with science-technology studies. On reflection, it is remarkable how little the field draws on contemporary science-technology studies to enrich its discussion of tools, building, and instrumentality through new understandings of the way researchers, technicians, processes, communication media, and literal instruments come together in what

Andrew Pickering calls the "mangle of practice" that is inextricably linked to society and culture. Science-technology studies by Lorraine Daston, Peter Galison, and Bruno Latour, for example, are canonical in this respect—for example, Daston and Galison's work on the history of changing ideals of "objectivity" (variously mediated by instruments and interpreters) and Latour's well-known melding of the concepts of human agency and machine instrumentality in "actor-network theory." Engaging with science-technology studies would help the digital humanities develop an understanding of instrumentalism—including that of its own methods—*as* a culture embedded in wider culture.[21]

Steps like these would give digital humanists a more solid foundation or, better, a heretofore missing technological and intellectual *infrastructure* (by analogy with modern programming, which evolved infrastructural software layers to mediate between low-level resources and high-level applications) through which to grapple with cultural issues.[22] Only by creating a methodological infrastructure in which culturally aware technology complements technologically aware cultural criticism can the digital humanities more effectively serve humanists by augmenting their ability to engage today's global-scale cultural issues.

Ultimately, the greatest service that the digital humanities can contribute to the humanities is to practice instrumentalism in a way that demonstrates the necessity of breaking down the artificial divide of the "two cultures" to show that the humanities are needed alongside the sciences to solve the intricately interwoven natural, technological, economic, social, political, *and* cultural problems of the global age. For example, there is not a single "grand challenge" announced by the Obama Administration, the Grand Challenges in Global Health initiative, the U.S. National Academy of Engineering, and other agencies or foundations in the areas of energy, environment, biomedicine, food, water, education, and so on that does not require humanistic involvement.[23] All these issues have a necessary cultural dimension, whether as cause or effect; and all, therefore, need the public service of humanist and, increasingly, digital humanist participants.

NOTES

This chapter is a substantially extended version of a brief paper by the same title that I originally presented in truncated form at the Modern Language Association convention in 2011 and subsequently posted online (Liu, "Where Is Cultural Criticism in the Digital Humanities?"). I have benefited from posts and criticisms that appeared in response to the online version and from discussions with the audience after later, fuller versions of the paper at Cambridge University and University of Nottingham.

1. Geoffrey Rockwell, Melissa Terras, and I cofounded 4Humanities in November 2010 with a collective of digital humanists located initially in Canada, the United Kingdom, and the United States (with other nations added later). The creation of the initiative was prompted by two discussion threads on the *Humanist* listserv in October 2010—one

worrying that the digital humanities were too narrowly "industrialised" or technologically instrumental, the other discussing the severe budget cuts in the United Kingdom imposed by the then newly formed conservative-liberal democrat coalition government. (For the posts that started these threads, see, respectively, McCarty, "Industrialisation," and Prescott.)

2. Here and throughout, I use "May 1968" for convenience as the symbolic name for an epoch rather than as an exact historical date (since some of the intellectual movements I refer to began somewhat earlier or later).

3. The Computer Professionals for Social Responsibility (CPSR) started in the Silicon Valley area in 1981 to express concern over the military use of computer systems and later broadened its scope to other social justice concerns related to computing. The Electronic Frontier Foundation (EFF) began in 1990 to champion "the public interest in every critical battle affecting digital rights" (Electronic Frontier Foundation, "About EFF").

4. This is a simplification, of course. A more extended discussion would note that much of the latent cultural-critical interest of the digital humanities lay under the surface in textual-editing theory, hypertext theory, and other registers of method specialized around the idea of textuality. In this regard, Jerome McGann's *A Critique of Modern Textual Criticism* and "The Rationale of Hypertext" (e.g., the coda on "the decentered text") are of a piece with cultural criticism in the post–May 1968 era, as is Matthew Kirschenbaum's invocation of D. F. McKenzie's *Bibliography and the Sociology of Texts* to discuss the "complex network of individuals, communities, ideologies, markets, technologies, and motivations" that inform the task of preserving digital media with "a pronounced social dimension that is at least as important as purely technical considerations" (Kirschenbaum, 240–41). "Net Critique" is the title of the blog of the network theorist and critic Geert Lovink. The phrase is also aptly generic for cultural criticism of the digital age.

5. Susan Schreibman discusses the debate over the "ordered hierarchy of content objects" (OHCO) thesis engaged in most famously by Allan Renear and Jerome McGann (e.g., in the latter's "Rethinking Textuality"). On the deformance thesis, see Samuels and McGann.

6. On the digital humanities as the "next big thing," see for example Pannapacker. The piece I refer to as an attempt to take stock of the field is my forthcoming "The State of the Digital Humanities: A Report and a Critique."

7. I concentrate here on the distant reading versus close reading issue in literary studies. However, I am aware that this has a somewhat distorting effect because the underlying issue of quantitative versus qualitative methods is older in other humanities fields and social science disciplines, with the result that recent digital technologies enter into play in those fields in a different methodological context. In historiography, for instance, the Annales movement brought distant reading and quantitative methods to the fore in the mid-twentieth century. One difference in the contemporary history field, therefore, is that the front line of recent digital history concerns such methods as geographic information systems (GIS) or social-network analysis that evolve quantitative methods further or differently (rather than redebate the first principles of the quantitative approach). The social sciences, of course, have long been familiar with the quantitative versus qualitative

problem. (My thanks to Zephyr Frank for conversation on this topic in relation to history at the Digital Humanities 2011 conference at Stanford University. In regard to the social sciences, my thanks to Astrid Mager for excellent commentary on this issue from her perspective as a digital social scientist during the question and answer period after my talk at HUMlab on "Close, Distant, and Unexpected Reading.")

8. I discuss the origin of the New Criticism in Liu, "Close, Distant, and Unexpected Reading."

9. See, for example, Moretti's reflections on "form" as a "diagram of forces" (*Graphs, Maps, Trees*, 56–57, 64).

10. Hayles, 63–64, gives other examples of high theorists and critics claiming allegiance to close reading. On the New Historicist "anecdote," see my discussions in *Local Transcendence* (e.g., 23-24, 29–30, 258–61).

11. See Allison et al. (including Jockers and Moretti) on "the Great Unread—the vast, unexplored archive that lies underneath the narrow canon of literary history" (10).

12. For "lexia" in hypertext theory, see Landow's influential adaptation of Barthes's term (4).

13. Julia Flanders nicely captures the stigma of servitude that has marked the digital humanities when she writes, "Representational technologies like XML, or databases, or digital visualization tools appear to stand apart from the humanities research activities they support. . . . Humanities scholarship has historically understood this separateness as indicating an ancillary role—that of the handmaiden, the good servant/poor master—in which humanities insight masters and subsumes what these technologies can offer" (para. 11).

14. One of the main emphases in the article on culturomics by Michel and Lieberman Aiden et al. is that the study of language enabled by their ngram analysis of Google Books facilitates the study of culture generally. Some of their specific examples (such as censorship of names of intellectuals in Nazi Germany) are closely analogous to humanities cultural criticism (181). Similarly, specific projects in "cultural analytics" at the University of California San Diego Software Studies Initiative include not just those that define culture in terms of aesthetic or media artifacts but also those that use the initiative's methods to study culture in a recognizably cultural-critical sense—e.g., projects on "2008 U.S. presidential campaign ads"; "visualizing art, industry, territory, and global economy in Brazil"; or "mapping 28 years of TV news" (Software Studies Initiative, "Projects").

15. To be fair, society's ever narrower focus on applied research threatens the STEM fields themselves, causing scientists to worry ever more about how to argue for the need for basic research. During 2009–2010, I led a subgroup (on research mission and principles) for the research strategies working group of the University of California Commission on the Future (UCOF, a body convened by the regents of the university to rethink the paradigm of the University of California in the face of systemic, long-term cuts in state funding). One of my takeaway lessons from that subgroup, which included scientists such as John Birely, University of California's associate vice president for laboratory management (who led our subgroup's work on a recommendation about basic research), is the extent

to which the STEM fields are acutely sensitive to the need to defend the very idea of basic research. While only a part of the recommendations of the various working groups made it into the UCOF's *Final Report*, that report does contain the following defensive language about basic research: "It is also critical that federal support for research be sustained or even increased given that the federal government underwrites so much of the basic research conducted at U.S. research universities, laboratories and research organizations. Although the President's budget calls for a steady increase in the financing of research, due to pressure to reduce federal budgets, Congress may look for short-term monetary gains and neglect basic research and its long-term impact on economic health" (24).

16. The academic use of social networking, blogs, and a variety of experimental platforms such as CommentPress (a blog-like platform capable of presenting monographs in modular paragraph units each of which can be commented on by users) attests that the adoption of the new protocols, practices, technologies, and forms in the academy is underway. But, as I mention later, there is a difference between scholars using such methods on an individual or ad hoc basis and using them in an *institutional* framework, which so far does not exist to integrate or, in many cases, even support the new communication media. (For a description of CommentPress, see Knight; and Hovey and Hudson.)

17. Personal communication from a parent to me at the English Department commencement ceremony, University of California, Santa Barbara, June 12, 2011.

18. See Alex Reid's response to my short paper on which this essay is originally based. Among other excellent commentary, Reid reflects, "I don't think it is unreasonable to argue that cultural critique as it has developed over the past 30–40 years has been a contributing factor to the general cultural decline of the humanities. At the very least, with historical hindsight, it was not the change that we needed if our intention was to remain culturally relevant. . . . Cultural critique has led us to be overspecialized, largely irrelevant, and barely intelligible, even to one another, let alone to the broader society. Yes, digital humanities can help us address that by providing new means to reach new audiences, but that won't help unless we are prepared to shift our discourse."

19. For my extended analysis of the idea of corporate culture, see my *Laws of Cool*, chap. 4.

20. The first of Banks's Culture novels (currently numbering nine) was *Consider Phlebas*, 1987.

21. In a manner analogous to science-technology studies, David M. Berry asks digital humanists to reflect on their own field as a culture. He writes that "to understand the contemporary born-digital culture and the everyday practices that populate it . . . we need a corresponding focus on the computer code that is entangled with all aspects of our lives, including reflexivity about how much code is infiltrating the academy itself" (4). This means problematizing "the unspoken assumptions and ontological foundations which support the 'normal' research that humanities scholars undertake on an everyday basis" (4) and recognizing that "there is an undeniable cultural dimension to computation and the media affordances of software" (5). Ultimately, he reflects, the culture of the digital humanities may well scale up to the future evolution of academic culture generally: "we

are beginning to see . . . the cultural importance of the digital as the unifying idea of the university" (7).

22. I am influenced here by Jean-Françoise Blanchette's excellent talk at the Digital Humanities 2011 conference, which gave an overview of the development of modern software focused on the nature of the "infrastructure" created to negotiate modularly between applications and underlying network, storage, and processor resources. (See also his more detailed article on this topic, "A Material History of Bits.") By analogy, I am suggesting that digital humanists currently lack an adequate infrastructural layer—both (or modularly) technological and methodological—through which to address their practices to cultural issues.

23. See the Obama White House's "A Strategy for American Innovation"; the U.S. National Academy of Engineering's "Grand Challenges"; and the Grand Challenges in Global Health initiative.

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