Envisioning the Digital Humanities

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Abstract

Over the last couple of years, it has become increasingly clear that the digital humanities is associated with a visionary and forward-looking sentiment, and that the field has come to constitute a site for far-reaching discussions about the future of the field itself as well as the humanities at large. Based on a rich set of materials closely associated with the formation of the digital humanities, this article explores the visions and expectations associated with the digital humanities and how the digital humanities often becomes a laboratory and means for thinking about the state and future of the humanities. It is argued that this forward-looking sentiment comes both from inside and outside the field, and is arguably an important reason for the attraction and importance of the field. Furthermore, the author outlines a visionary scope for the digital humanities and offers a personal visionary statement as the endpoint to the article series.

Introduction

At the end of November 2010, at a contemporary moment when many feel that the Humanities are under threat, digital humanities is serving as a means to advocate and rethink the Humanities. An example of this is the 4Humanities initiative, whose website banner says that the initiative is “Powered by the Digital Humanities Community” [4Humanities]. It is not chance that this initiative, like several others, starts out from the digital humanities. Over the last couple of years, it has become increasingly clear that the digital humanities is associated with a visionary and forward-looking sentiment and that the field has come to constitute a site for far-reaching discussions about the future of the field itself as well as the humanities at large. As will be shown, this forward-looking sentiment comes both from inside and outside the field and is arguably an important reason for the attraction and importance of the digital humanities. At the same time, its envisioning and imaginary power also highlights the coming together of different epistemic traditions and an expanding field under negotiation.

This article explores the visions and expectations associated with the digital humanities and how the digital humanities often become a laboratory and means for thinking about the state and future of the humanities, as well as how this visionary discourse shapes the field and what that tells us about the current state of both the field and the humanities. In the final section of this paper, a visionary scope for the digital humanities is suggested based on a set of design parameters. While not detailing any particular vision, the parameters provide a grounded basis for a further discussion. The article concludes with a personal visionary statement about the digital humanities.

This is the final installment in a series of four articles that broadly explores the digital humanities in terms of its discursive shift from humanities computing to digital humanities, the evolving disciplinary landscape, associated epistemic commitments and primary modes of engagement, underlying cyberinfrastructure, visions and hopes invested, and possible future directions. Needless to say, this is a large undertaking and the result is necessarily patchy and suggestive rather than definite and all-inclusive.

In the first article, I examined the discursive transition from humanities computing to digital humanities, analyzing how this naming is related to shifts in institutional, disciplinary, and social organization. I also addressed the epistemic culture and commitments of humanities computing and tensions between this tradition and a broad notion of digital humanities.

In the second article, I explored the landscape of digital humanities more broadly through a critical “flythrough” of the landscape, an exploration of four concrete encounters and an analysis of paradigmatic modes of engagement between the humanities and information technology - technology as a tool, study object, expressive medium, exploratory laboratory and activist venue.
In the third article, I discussed cyberinfrastructure for the humanities critically, as well as in terms of how new infrastructure and digital humanities spaces can be conceptualized, designed and implemented. It was argued that the humanities need to consider the multiple opportunities associated with cyberinfrastructure, while maintaining epistemic integrity and avoiding the modeling of new infrastructure uncritically after existing models.

While offering perspectives on an exciting and evolving field is important in itself, a pertinent driving force behind the article series as a whole is an interest in supporting an increased shared awareness across a field broadly conceived of as digital humanities, discussing conceptual foundations and sentiments of the digital humanities, and engaging with the future of the humanities and higher education.

Outline

This article is divided into three parts. The first part provides a background and critical framing through suggesting reasons for the visionary sentiment of digital humanities, discussing distinct examples of the visionary discourse associated with the field, and looking at how visions vary with different epistemic commitments. Additionally, the role of junior digital humanists in these visions is discussed, as well as how digital humanities is related to technology and transformative discourse more generally.

The second part looks at a selection of texts from the digital humanities with a pronounced forward-looking sentiment: the Digital Humanities Manifesto 2.0, the 2006 American Council of Learned Societies Report on “Our Common Commonwealth,” the website of the Institute for Computing in Humanities, Arts, and Social Science, and Melissa Terras’s plenary lecture at the conference Digital Humanities 2010. These materials are discussed critically, and particular concern is given to the way that overarching visions are grounded in intermediate level topics and concerns such as reward systems, interdisciplinary practice and accessibility of digital cultural heritage.

The third part discusses a tentative visionary scope for the digital humanities based on a series of design parameters such as mutual respect, engagement with technology, and disciplinary grounding. Crucially, it is not suggested that there is one definite vision or set of strategies. Rather, through drawing on personal experience and the article series as a whole, a strategic pathway and visionary sentiment is offered. The article ends with a personal outlook and vision statement based on the visionary scope established in the article.

Part I: The Visionary Discourse of the Digital Humanities

Why Visionary?

Unlike many other fields and constellations in the humanities, the digital humanities is intimately associated with a fairly pronounced and far-reaching visionary discourse and transformative sentiment. There is no simple explanation for this visionary engagement and, given the nature and variation of the field (Svensson 2010), no one uniform vision. However, we can provisionally identify a set of reasons and a broader context.

Firstly, despite its fairly long history, the institutional status of digital humanities is unclear and undecided, which prompts thinking about the future of the field. As Geoffrey Rockwell noted nearly ten years ago (Rockwell 2002), the community was already then getting tired of discussing whether humanities computing is a discipline or an interdisciplinary field. This situation has not been resolved, and if anything, it has become more multi-layered and complex. It is true that there are more disciplinary structures for the digital humanities now (departments, centers, funding schemes and educational programs) but also more variation across the landscape (Svensson 2010), more concern about inclusion and exclusion (cf. Sinclair 2010, Trettien 2010, Ramsay 2011), an ongoing discussion of the status of digital humanities deeply rooted in different visions and models (cf. Rockwell 2010), and still rather few educational programs that allow “control of its means of reproduction” [Rockwell 2002].

While the strength and scope of the visions may be particular to the digital humanities, most of the features just listed can also be found in other fields. A useful example is Asian American Studies, which began proper in the late 1980s and whose establishment as a field shows many parallels to the digital humanities. Indeed, Chan’s presentation of the achievements of Asian American Studies (Chan 2010:478) – including more faculty positions, book series by academic publishers, hundreds of people presenting at annual meetings of the association – is reminiscent of those of digital humanities. She is also concerned with the relative absence of graduate programs, problems with disciplinary alignment and not everything being “fixed”:

However, even though these developments seem to indicate that the field has finally “arrived,” we cannot rest on our laurels. Despite our new visibility and vigor, we continue to exist on contested terrain. And the contestation
The digital humanities is a larger enterprise than five or six years ago, and this expansion has made the field considerably more heterogeneous. Chan discusses the political and community grounding of Asian American studies and how the field is contemporarily divided as to whether this is a primary or relevant commitment. The digital humanities also has a set of embedded core values – including a predominantly textual orientation and a focus on technology as tool (Svensson 2009) – some of which are challenged or diluted through an expanded notion of the field. This should not be unnecessarily construed as a problem, but it adds to the sense of a field in a dynamic state.

Another useful and related comparison is the emergence of Area Studies in the late 1940s. Rafael (1994) discusses Robert Hall’s report on Area Studies from 1947 and points to how early interest in the field came from a strong sense of dissatisfaction with current research approaches and methods and with the specialization and isolation of traditional disciplines. This discourse can similarly be found in the contemporary discussion of digital humanities where dissatisfaction with existing structures is seen as a critical driving force (cf. Terras 2010).

One way for area studies to make a difference and to remedy some of the problems identified was to give the field a clear agentive role:

Area studies were thus charged with a mediating function, "nourishing" the disciplines as to bring them in better touch with the "real world." [Rafael 1994, 95]

The view of Area Studies as energizing, connecting and developing the traditional disciplines corresponds to at least some ideas about the digital humanities. Hall advocates an in-between position for Area Studies, where the disciplines are quite important, and he also talks about “dual citizenship” [Rafael 1994, 95] as a strategy to bring Area Studies and the disciplines together.

In maintaining disciplinary distinctions, area studies thus also retained for themselves a relation of dependency to such disciplines. [Rafael 1994, 95]

The question of dependency is critical to the digital humanities too, and one that often surfaces in the discussion of the field. One concern is the relation to established disciplines and existing academic structures, which together with uncertainty about the scope and direction of the field contribute to a sense of unstable boundaries.

There is clear evidence that the terrain of digital humanities is not stable nor fixed. An example would be the institutional status of the field. At the time of writing, King’s College is planning to create the Department of Digital Humanities from the successful and long-standing Center for Computing in the Humanities. At roughly the same time, Rockwell comments that “I am no longer confident that we want to take the route of forming a discipline with all its attendant institutions.” [Rockwell 2010] Moreover, the Digital Humanities Manifesto 2.0 announces that the Digital Humanities “is not a unified field but an array of convergent practices.” [Manifesto 2009] This somewhat indeterminate position (cf. e.g. [Sample 2010a], [Scheinfeldt 2010]) is coupled with a strong and expanded interest in the digital humanities. All in all, this leads to the formulation of strategies and visions as existing academic institutions, scholarly associations and other actors (including some funding agencies) are engaging with (and arguably, territorializing) the digital humanities. Most such forward-looking statements will naturally be visionary and hopeful rather than static and dismal, as the following whitepaper for a new proposed center exemplifies:

We propose the creation of a Center for Digital Humanities, Media and Culture (formerly titled Texas Center for Digital Humanities and New Media). The Center will address two related grand challenges: the need to investigate the relationship of computing technologies and culture, and the need to construct cyberinfrastructure for the humanities and social sciences. The Center’s research, focused in four interrelated areas — the cultural record, cultural systems, cultural environments, and cultural interactions in the digital age — engages one of the most compelling questions of our time: What does it mean to be human in the digital age? [Texas A&M]

It is simply hard to secure strategic traction if you do not clearly point to possibilities, development and substantial impact. It is noteworthy, though, that many digital humanities materials, such as the above whitepaper, hardly point to any weaknesses or threats, at least not in a more structured manner.

Another important factor is that the digital humanities, at least potentially, operates across all of the humanities. Under a broadly conceived digital humanities, there is a range of possible interaction points between the “digital” and the individual disciplines. A
critical underlying actuality is that information technology provides powerful tools for the humanities and that the “digital” is an integral part of our culture, an actuality that affects all the humanities disciplines on a fundamental level (cf. [Svensson 2009]). On the other hand, we also need to be aware that digital humanities as a field has been much more associated with certain disciplines and perspectives than others. Incidentally, this is also where we see different levels of visionary leverage depending on the epistemic commitments and the modes of engagement recruited by a given digital humanities initiative. An initiative invested in tools for humanities research would make different claims than one invested in studying the effects of the digital on contemporary life and culture. Still, regardless of the variety of digital humanities, there is often an actual or presumed engagement with all or most of the humanities. This gives the digital humanities more reach than most regular departments, disciplines and centers, and arguably, both an interest and a mandate to be invested in the future of the humanities at large (somewhat like humanities centers). The fact that the field tends to be institutionalized differently than other academic enterprises might also help in the sense that it facilitates a freer role and possibly a less competitive stance in relation to established departments and disciplines.

Additionally, there is humanities-wide leverage on the funding agency level through organizations such as the National Endowment of Humanities (NEH) Office of Digital Humanities in the US. Such offices or functions at the funding agency level can assume an intermediary, bridge-building role within the larger funding agency structures and can thus strengthen the humanities wide reach of the digital humanities. An illustrative example is the Digging into Data Challenge (DiD), which is supported by eight international research organizations in four countries including NEH:

The DiD Challenge is an open competition, soliciting applications from researchers in the information, library, archival, and computational sciences as well as the humanities and the social sciences. A successful application is likely to be one which addresses the goals of the DiD initiative (innovative research applied to large scale datasets, effective interdisciplinary collaboration, and improving access to and sharing of data for work in the humanities and/or social sciences). [Digging 2011]

The DiD Challenge is based on access to large data sets, a strong focus on team-based work and international collaboration. It is significant that in the US, NEH collaborates with the National Science Foundation (NSF) as well as the Institute of Museum and Library Services. Also, it seems likely that this would help create awareness and interest for the field outside the humanities proper. From the point of view of researchers and the community, such collaboration probably generates additional resources and leverage. Additionally, while the DiD initiative is also clearly aligned with a “big data” and infrastructure paradigm and would necessarily be excluding, the call seems reasonably open. It puts some emphasis on research and includes digitalized cultural heritage material as well as born-digital data. Furthermore, the call is fairly clear about the deliberations, parameters and constraints at play.

Indeed, research infrastructure has cross-sectional potential, and there is often at least nominal interest in including in the humanities in new research infrastructure initiatives ([Svensson 2011]). Here the digital humanities matches the expectations more than in most other areas. This may lead to the digital humanities representing the humanities in relation to other areas of research and development such as science and engineering, which in turn helps create interest for the field outside of the humanities and contributes to the sense of digital humanities as representing or manifesting the humanities.

In a sense, the digital humanities can thus come to serve as a relatively “understandable” and interpretable part of the humanities through its perceived or projected engagement with technology, often large data sets, laboratory environments, etc. The magnitude of the research challenges in terms of complexity, potential impact, resources required and a need to engage interdisciplinary teams is sometimes compared to those of science and engineering through invoking the frame of “grand challenges” or “big humanities” (for examples, see Davidson 2008:714, Weber 2005 and Manovich, interviewed in Franklin and Rodriguez’G, 2008). The interdisciplinary aspect of digital humanities tends to be foregrounded in these contexts:

Because Digital Humanities engenders truly interdisciplinary work with a potentially global impact, granting agencies now recognize that the Humanities, like other disciplines, have entered the age of the grand challenge. [Presner 2009a, 7]

While the ideas of grand challenges and big humanities certainly have attraction and require essential forward thinking in order to identify complex problems and large-scale visions, we should be careful not to uncritically accept the frame of big humanities, which, for instance, has a tendency to be coupled with a positivist agenda and a homogenization of the humanities (cf. [Scout 2006]).
There is a strong link between visionary discourse and technology, historically and contemporarily (see e.g. [Turner 2006]), and the digital humanities clearly have a strong investment in technology, technological infrastructure, and the digital more generally. An obvious example would be visions that draw directly on existing or future technological innovation. In the tool-based digital humanities tradition, technologically induced visions or projections are fairly common, but they often seem to be comparatively low-key and linked to particular areas or concrete challenges. There is also a more general visionary strand that can either be associated with a specific set of technologies such as high-performance computing or with cyberinfrastructure more generally. The sentiment from the NSF Blue Ribbon Report on Cyberinfrastructure, “a new age has dawned in scientific and engineering research, pushed by continuing process in computing information, and communication technology; and pulled by the expanding complexity, scope, and the scale of today’s research challenges” [Atkins et al. 2003, 31] can be traced in the digital humanities too. Similarly, there is often an accompanying sense of urgency (see e.g. [Unsworth 2006, 32]).

Importantly, there is a sense that doing digital humanities work requires pushing on established traditions and structures. This is probably one of the principal reasons people interested in thinking about and reconfiguring the humanities are attracted to the field. The title of a recent book project, Hacking the Academy, is symptomatic, and while the following description of it may be somewhat forceful, the general sentiment is quite common.

But today serious scholars are asking whether the institutions of the academy as they have existed for decades, even centuries, aren’t becoming obsolete. Every aspect of scholarly infrastructure is being questioned, and even more importantly, being <em>hacked</em>. [Cohen 2010]

From this point of view, the need for visions and encouraging rethinking of established structures seems quite apparent. The tension between the digital humanities and the academic establishment is multifaceted. For instance, the field is normally seen as an interdisciplinary venture whereas most universities primarily support disciplinary work. This tension has practical implications. For example, running courses with lecturers from different departments may be administratively difficult (cf. [Svensson 2010, §79]). Moreover, much digital humanities work is collaborative and project based, and such processes and deliverables (including different kinds of digital publications) may not have a clear place in the reward and support systems of the academy (cf. [Ippolito et al. 2009], [Fitzpatrick 2009]). Nor may there be physical space or distributed collaborative functions for this type of teamwork. The collaborative nature of much digital humanities work is an important factor as well as a changing “ecology” of scholarly work and the blurring of processes such as research and publishing ([Price 2011], [Earhart 2011], [Fitzpatrick 2009]). For more individual research projects with traditional scholarly output, what is studied may be seen as peripheral to the discipline in question and specific needs in terms of engagement with technology and interdisciplinary connections may cause tension with the epistemic commitments of the discipline. There is also more generally a great deal of concern about tenure systems and career paths among faculty or non-faculty positions, as well as among digital humanities experts and other staff (cf. [Terras 2010], [Kirschenbaum 2010a], [Fitzpatrick 2009]). Furthermore, some digital humanities work requires extensive technology infrastructures, which is not very common in the humanities. Based on these and other factors, there is a strong sense that the university and the humanities need to change to accommodate this type of work, and all this feeds into a vision of a transformed humanities.

On a more overarching level, there is a strong visionary and transformative sentiment that goes beyond the intermediate-level issues discussed above. This is where we find grand, sweeping statements and a fair deal of discursive intensity. David Perry illustrates this sentiment when he says “I don’t want a digital facelift for the humanities, I want the digital to completely change what it means to be a humanities scholar” [Parry 2010]. This discourse would seem not only to be grounded in the issues discussed above (coming from the practical work of the digital humanities), but also in more general discontent with the state of affairs for the humanities, the academe and, to some extent, society.

There are several intertwined threads that play into this. There is a long-standing sense that the humanities (and liberal arts education) are fighting a losing battle for funding, recognition and a civic role (e.g. [Nussbaum 2010], [Donoghue 2008]). This sentiment ties in with a concern about the situation of higher education more generally – not least in financially dire times and in countries such as the United States and United Kingdom and can also be seen in the frustration and discontent expressed, not least, from younger faculty and graduate students about the perceived lack of future possibilities, resistance to new ideas, and sometimes, a perceived inward sentiment of the humanities.

The digital humanities can thus become a platform or means for rethinking the humanities and higher education and a way of channeling transformative sentiment that often goes far beyond the digital humanities proper. This is an important and complex function necessary to understanding the digital humanities, and one we will continue to explore.
Two blog posts about the digital humanities in the beginning of 2010 stimulated a fair amount of discussion among digital humanists and others. On January 6, David Perry posted an entry where he, among other things, said:

I don’t want a digital facelift for the humanities, I want the digital to completely change what it means to be a humanities scholar. When this happens then I’ll start arguing that the digital humanities have arrived. Really I couldn’t care less about text visualizations or neat programs which analyze the occurrences of the word “house” in Emily Dickinson’s poetry. If that is your scholarship fine, but it strikes me that that is just doing the same thing with new tools. [Parry 2010]

Perry’s statement demonstrates an underlying desire to fundamentally change the humanities, which goes beyond creating digital tools or analyzing new strata of study objects. His post resulted in fairly heated discussion on the blog, on Twitter and over other channels. One point of tension, naturally, is the above evaluation of traditional text and tool based digital humanities, which would seem to refer to traditional humanities computing. In a blog comment in relation to this entry, Steven Ramsay points to the significance of the techne of scholarship and how a technology such as printing press cannot just be seen as a faster version of the scriptorium. The argument is that tools of this kind facilitate new kinds of intellectualism. He puts forward concordance software and corpora as another example:

I can now search for the word “house” (maybe “domus”) in every work ever produced in Europe during the entire period in question (in seconds). To suggest that this is just the same old thing with new tools, or that scholarship based on corpora of a size unimaginable to any previous generation in history is just “a fascination with gadgets,” is to miss both the epochal nature of what’s afoot, and the ways in which technology and discourse are intertwined. [Ramsay 2010]

Ramsay uses the size of (some) present-day corpora to support his argument, and reference to numbers, size and computational speed is quite common in this kind of discourse (cf. [Svensson 2011]). The exchange above accentuates the epistemic tension between a tradition invested in technology as tool and large data sets and one invested in changing the humanities.

Three days after Perry’s blog entry, Ian Bogost blogged about the status of the humanities in a fairly provocative way. Here is an excerpt:

If there is one reason things "digital" might release humanism from its turtlenecked hairshirt, it is precisely because computing has revealed a world full of things: hairdressers, recipes, pornographers, typefaces, Bible studies, scandals, magnetic disks, rugby players, dereferenced pointers, cardboard void fill, pro-lifers, snowstorms. [...] If we want the humanities to become central, it is not the humanities that must change, but its members. We must want to be of the world, rather hidden from it. We must be brutal. We must invoke wrath instead of liberation. We must burn away the dead wood to let new growth flourish. If we don't, we will suffocate under the noxious rot of our own decay. [Bogost 2010]

Bogost points to the opening up of the humanities to the outside world partly as a consequence of the digital and the need for the members of the humanities to change (rather than the humanities itself). In just a few days, 34 blog comments were posted to Bogost’s original post, and much discussion was generated over twitter. Again, in these comments we can see examples of tension between different flavors of digital humanities. In a particularly forthright comment, Lisa Nakamura says that,

“digital humanities” boils down to using computers to do exactly the same silo-ed and intellectually buttoned down work that people did before. It is the opposite of expansive. But it's always easier to get money for equipment (i.e. computers to make a million concordances of literature that people don't even read anymore and sure as hell don't want to read lit-crit about) than it is to re-envision a field. People in this kind of digital humanities are very concerned with "preservation" in every sense of the word — preservation of the status quo, of themselves and their jobs, and of the methods and fields of the past. [Nakamura 2010]

Interestingly, Nakamura directly challenges traditional humanities computing or digital humanities (note the quotation marks) for not doing re-envisioning work and being technocentric, and firmly categorizing this tradition, or set of traditions, as facilitating preservation at same time as she expresses clear discontent with some of the traditional humanities. Again this reflects different sets of epistemic commitments. Importantly, Nakamura’s own discipline, media studies (and more broadly, cultural studies),
Wikipedia defines digital humanities in the following way:

“digital humanities: humanities computing cannot be prevalent computing and the early net from the 1970s and 1980s and onwards (cf. Nakamura 2006). Nakamura’s critique can be read as a positioning of media studies (and cultural studies) in relation to traditional humanities computing (as digital humanities), which is often enacted by comparative literature and English ([Kirschenbaum 2010a]), and as part of the ongoing territorialization of the “digital.” In doing so, she indirectly supports an expansive and re-envisioning digital humanities, and the view of digital humanities as an arena for rethinking the humanities.

While the context of these blog entries and associated comments is polemic and intense (cf. [Unsworth 2010]) and analytical caution should be exercised, it is also true that this type of discourse shows us some of the “cracks” and points of tension in the disciplinary texture. For instance, as we have seen, there are tensions between a technologically anchored and tool based approach and a cultural or media studies oriented approach, where the digital is primarily an object of analysis rather than a tool.

It is fairly obvious that both Perry and Bogost use the digital and the digital humanities as a means to discuss the state of the humanities more generally. This position is even clearer in a HASTAC forum comment by Mark Sample:

"The digital humanities should not be about the digital at all. It's all about innovation and disruption. The digital humanities is really an insurgent humanities. [Sample 2010b]"

While the above positions may be seen as particularly forceful, there are many less extreme discursive examples that build on a certain degree of unhappiness with the current state and place of the humanities, suggesting the digital as a possible means of changing these dynamics and trajectory, including this statement:

"As a collective autobiography of mankind, the humanities — history, literature, art, and philosophy — have historically played a leading civic role in society. But in recent decades, the academy’s civic role has weakened: higher education increasingly has been seen as a private rather than a public good. The Simpson Center for the Humanities at the University of Washington seeks to reverse this trend by taking humanities scholarship public with the new digital technologies. [Simpson Center]"

The quote above is from a printed presentation, mainly to potential funders, of a digital humanities initiative at a humanities center, emphasizing one particular quality of the technology - the ability of digital technologies to leverage the humanities as a public project (see [Woodward 2009] for a description of the conceptual grounding of public humanities). On this more particular level, we find that the digital humanities is often discussed in relation to specific critical topics that arise from the perceived tension between digital humanities and traditional structures and values in the humanities or the academy more generally. Examples include outreach and public engagement, reward structures, digital publication, preserving digital research output as part of the scholarly record for the field, interdisciplinary work practice, project based work, infrastructural needs and institutional support.

These topics clearly relate both to visions of the digital humanities and to the rethinking and envisioning of the humanities more generally. An important observation is that neither the overarching visionary sentiment, nor most specific topics typically describe major research challenges for the humanities. Rather the focus tends to be on the transformation of the humanities and various issues to do with methodology, digitalization, materials and data, sustainability and constraints in the academic system. Even big humanities, as outlined in documents such as the Digital Humanities Manifesto 2.0, is more methodological in nature than focused on core scholarly issues.

**Multiple Visions**

Clearly, not all of the digital humanities engages equally in the type of transformative discourse discussed above. For instance, it would seem that traditional humanities computing typically does not see itself as a primary agent for the large-scale change of the humanities. It is also noteworthy that humanities computing has not had a large investment in the cyberlibertarian side of computing and the early net from the 1970s and 1980s and onwards ([Liu 2004, 240–241]), an investment that is much more prevalent in new media studies, digital media studies, internet studies, etc. (cf. [Silver 2006]). This does not mean that humanities computing cannot be (and be perceived as) a transformative practice but rather that the language and the epistemic stakes are quite different.
The digital humanities, also known as humanities computing, is a field of study, research, teaching, and invention concerned with the intersection of computing and the disciplines of the humanities. It is methodological by nature and interdisciplinary in scope. It involves investigation, analysis, synthesis and presentation of information in electronic form. It studies how these media affect the disciplines in which they are used, and what these disciplines have to contribute to our knowledge of computing.[1] [Wikipedia]

Wikipedia basically employs a humanities computing definition,[2] and although humanities computing as a project extends across disciplines, descriptions such as the above often give a sense of disciplinary and communitarian sentiment. Humanities computing is thus presented as a fairly well established part of an existing institutional structure, arguably a projection in its own right, rather than a transformational force. There is also a tendency to have an inward focus on the community and the field rather than on systemic and outward change of larger structures. This was evident, for instance, in Melissa Terras’ plenary talk at the Digital Humanities 2010 conference (Terras 2010). When these articulated visions are found, they tend to focus on methodology or making cultural heritage accessible rather than overhauling the humanities. The dream of making our cultural heritage available to everyone is strongly articulated in the ACLS Report on Cyberinfrastructure:

We should place the world’s cultural heritage – its historical documentation, its literary and artistic achievements, its languages, beliefs, and practices – within the reach of every citizen. The value of building an infrastructure that gives all citizens access to the human record and the opportunity to participate in its creation and use is enormous, exceeding even the significant investment that will be required to build that infrastructure. [Unsworth 2006, 40]

No doubt this is a most substantial, and in fact practically unattainable, challenge and vision, and while it is does not promise to change academia, it certainly points at large-scale societal and cultural changes, although these changes are not really presented in detail. On one level, this vision could be seen as the ultimate goal for a digital humanities focused on archives and digitalization.

In the following citation from the introduction of the Companion to Digital Humanities, there is another kind of emphasis. Here, technology-induced method is emphasized, and there is a sense of strongly pushing the boundaries for humanities scholarship:

The process that one goes through in order to develop, apply, and compute these knowledge representations is unlike anything that humanities scholars, outside of philosophy, have ever been required to do. This method, or perhaps we should call it a heuristic, discovers a new horizon for humanities scholarship, a paradigm as powerful as any that has arisen in any humanities discipline in the past – and, indeed, maybe more powerful, because the rigor it requires will bring to our attention undocumented features of our own ideation. Coupled with enormous storage capacity and computational power, this heuristic presents us with patterns and connections in the human record that we would never otherwise have found or examined. [Schreibman et al. 2004, xxvi]

There is no distinct institutional or disciplinary focus here, nor a general discussion of transforming the humanities. Rather the editors emphasize a projection of powerful tools, formal methods and computational power. The focus on possibilities associated with technology in the final sentence resonates with some writings on cyberinfrastructure that associate increases in computational power with substantial research progress (cf. [Atkins et al. 2003]). Of course, “a new horizon for humanities scholarship” can be seen as potentially revolutionary. However, that would not seem to be the main thrust or detail of the argument.

In his discussion of the history of humanities computing, [Raben 1991] gives a useful account of 25 years of development of humanities computing. In some ways his 1991 projection is more radical than that of the Companion almost 15 years later where he says that “In that new mode of investigation, surely the power of the computer will have to be employed in other tasks than the compilation of concordances” [Raben 1991, 349], cf. also Steven Ramsay’s comment above.

In terms of concrete issues, humanities computing has had a long-standing interest in many of the critical issues listed earlier including reward structures, team-based research, digital publication and interdisciplinary work. However, there is a basic difference in the way these issues are framed and leveraged in relation to the basic epistemic commitments of different traditions. Looking at the landscape of the digital humanities more broadly, it seems tenable to assume that the most far-reaching employment of the digital as a means of (re)negotiating the humanities does not come from humanities computing with its primary instrumental orientation, nor from internet studies and many other cultural studies approaches to the digital with their primary interest in the digital as an object of analysis (and a stronger disciplinary anchoring). Rather, it seems that approaches
and initiatives invested in several modes of engagement between the digital and the humanities are more likely to relate to the place and future of the humanities. This is particularly true if there is an institutional and policymaking level to these initiatives. HASTAC is a good example of such an initiative. It is no accident that several of the initiators of HASTAC have strong institutional positions in humanities centers, or that HASTAC has a focus on change:

HASTAC ("haystack") is a network of individuals and institutions inspired by the possibilities that new technologies offer us for shaping how we learn, teach, communicate, create, and organize our local and global communities. We are motivated by the conviction that the digital era provides rich opportunities for informal and formal learning and for collaborative, networked research that extends across traditional disciplines, across the boundaries of academe and community, across the "two cultures" of humanism and technology, across the divide of thinking versus making, and across social strata and national borders. [HASTAC]

This is a grand and visionary statement which partly relies on digital technologies and networks to allow crossing of a whole set of traditional boundaries. It could be argued that we can trace a trajectory from the “digital era” mentioned and the associated set of transcending opportunities to the visionary and techno-optimistic sentiment associated with “cyberspace” and information technology (cf. [Turner 2006] and [Coyne 1999]).

The New Generation

The transformative visions exemplified above often incorporate an emerging generation of young researchers implicitly or explicitly, and it could be claimed that they are assigned roles in an emerging narrative of digital humanities. Here follows an example from an online Twitter conversation in relation to the conference “Online Humanities Scholarship: The Shape of Things to Come” (University of Virginia, March 26-28, 2010):

# If established and respected scholars lead the way with examples of new/different things that are possible... #uvashape [1/2]

# ...then junior scholars will (I hope) find it easier to propose new/different ways of doing things. cf. McGann & Mandell #uvashape [2/2] [Williams 2010]

The model here seems to be that junior scholars can be helped by senior scholars through example, probably both to see what is possible and to get authentication for such activities and modes. There are two underlying assumptions here: firstly that junior scholars actually want new or different ways of doing things and secondly, given such a wish, that they would be interested in senior faculty showing the way. These assumptions may be fairly reasonable and certainly well-meaning, but it can be argued that there is a risk to “construct” a generation of young humanities scholars eager to engage with “new/different ways of doing things” and in need of help to engage with such practice from e.g. senior scholars, reformed reward systems, etc. Arguably, such junior scholars are construed as the subjects of particular transformative visions of the (digital) humanities. This can be contrasted with the findings of a University of California Report on “Faculty Attitudes and Behaviors regarding Scholarly Communication” [UCOSC 2007, 5] that suggest that junior scholars can be fairly conservative (partly as a result of tenure criteria) while senior scholars may be more amenable to change.

While a great deal of hope is assigned to the new generation of digital humanists, there is also concern with a lack of career paths and professional opportunities. Such concerns reflect particular issues in different types of digital humanities. For instance, humanities computing has a long history of tension in terms of establishing academic job opportunities and career paths, which is partly related to an often institutionally peripheral position, a different professional structure than most disciplines (including heavier reliance on skills and practices not typical of traditional humanities scholarship) and no clear way to a tenure track or equivalent position nor a highly qualified expert role.

This is becoming a real issue in Digital Humanities. There is no clear route to an academic job, and no clear route to PhD, and there are a lot of people at a high level in the field who do not have PhDs. Yet increasingly, we expect the younger intake to have gone down that route, and then to work in service level roles (partly because there are few academic jobs). [...] This problem of employment and career and progression taps into a general frustration for young scholars in our field. [Terras 2010]

In her analysis, Terras refers to a couple of tweets that together with her own experience of the field demonstrate the difficult
situation for young digital humanists. There can be no doubt that what she describes is a very real situation. However, her focus would seem mainly to be humanities computing as digital humanities, and not young researchers with an investment in the digital humanities who are anchored in a traditional disciplinary and scholarly context (who, for instance, may have a fairly clear route to a Ph.D.). John Unsworth portrays such a new generation of researchers at a conference at Yale University:

The first thing to note is that the conference was organized by graduate students, not faculty. The co-chairs of the event were Molly Farrel (Ph.D. in English expected in 2010, dissertation title “Counting Bodies: Imagining Population in the New World”; [...], Heather Klemann (Ph.D. candidate in Comparative Literature, no date given, dissertation title “Literary Souvenirs: Didactic Materialism in 13 Late Eighteenth- and Early Nineteenth-Century Fiction,” [...], and Taylor Spence (Ph.D. in History expected in 2011, dissertation title “The Liberal Schoolmaster”). How did these students get drawn into the digital humanities?

[Unsworth 2010, 12–13](URLs removed)

These students are obviously already well on a path to finishing their Ph.Ds. The job market, generally speaking, may not seem very promising for new humanities Ph.Ds. at this point in time, but it would seem quite likely that if they are interested in pursuing an academic career they would be destined for tenure-track or equivalent positions rather than service level roles not necessarily because they would not be interested, but because their kind of digital humanities would seem more closely aligned with the disciplines and the disciplinary career paths than with the epistemic tradition and paths associated with humanities computing. There is a risk of conflating these different traditions in using "digital humanities" to denote a specific set of epistemic commitments.

Coming up behind Christy and Harris, Gailey, Ramsay, Bogost, Kirschenbaum, McCarty, Ayers, Stallybrass, and me, is a generation of graduate students who essentially learned to do research with digital tools; they aren't necessarily aware of the history that's implicit, just barely submerged, in the exchanges we've been considering here — they actually don't care all that much about the back-story. They're interested in grabbing these tools, using these new library services, and making their own mark, and they have some interesting questions to ask. [Unsworth 2010, 19]

Here, it can be argued that the Yale graduate students that serve as Unsworth’s example did not necessarily come to the digital humanities (whether to stay is an open question) through the tools or through a primary wish to utilize these tools but rather for another kind of engagement with the digital. This is probably one of the main differences between the Yale conference and traditional humanities computing events, and in this sense, the back story is quite important.

What Do Junior Scholars Need to Know?

Interestingly, Stephen Ramsay (among the first generation people listed above) commented on digital humanities at Yale University in an MLA 2011 position statement:

But what if Duke or Yale were to offer a degree in Digital Humanities and they said “no” to code and “yes” to text? Or “no” to building and “yes” to theorizing? Or decided that Digital Humanities is what we used to call New Media Studies (which is the precise condition, as far as I can tell, at Dartmouth)? You might need to know how to code in order to be competitive for relevant grants with the ODH, NSF, or Mellon. Maybe that means Yale’s DH ambitions will never get off the ground. Or maybe Yale is powerful enough to redefine the mission of those institutions with respect to the Humanities. Most institutions, for the record, are not. [Ramsay 2011a]

This quote illustrates some of the tension arising between different epistemic traditions (Svensson 2009) and between different types of institutions (cf. [Gailey 2010]) within "big tent" digital humanities. Here, “coding” (and building) is presented as a central epistemic commitment of the digital humanities and the presumed criteria of (some) funding agencies are used to emphasize the centrality of this commitment. Admittedly, Ramsay’s statement is deliberately provocative, and he does modulate it somewhat in a follow-up blog post (Ramsay 2011b). It can nevertheless be argued that this is an example of a first generation digital humanist, with a clear investment in humanities computing as digital humanities, excluding the very new generation of digital humanists that Unsworth describes above. It is also noteworthy that the Ph.D. thesis topics listed by Unsworth do not seem to indicate any strong coding component (or building element in a technical sense).
In a blog entry, Davidson argues for a radically different position when she discusses a colleague’s dissatisfaction with some digital humanities interviewees’ insistence on stating “knowing HTML” as a primary job qualification:

We senior Digital Humanities scholars (no matter what position we take, no matter what side we are on) cannot make knowing or not knowing Mark Up the one thing everyone not in the field knows about us or we will destroy our field by provincializing it — and by stigmatizing our students out of the one area where there are jobs right now. [...] An ideal job candidate burns with the passion of making a field anew. Vision, expansiveness, imagination, ideas, and brilliance are the requirements. Knowing or not knowing HTML is way down the list of attributes that make colleagues know that you are the one they need for a better and brighter future. [Davidson 2011]

Davidson emphasizes the importance of humanistic research challenges and visionary work, and she presents a much less exclusionary (if directional) point of view. Again, we can see how a new generation of scholars becomes part of the discussion of the future of the digital humanities and gets entangled in associated epistemic traditions. Indeed, an aspiring young digital humanist listening in on the above conversation may rightly feel somewhat confused. In itself, a certain level of uncertainty and dynamicity in relation to an enterprise such as the digital humanities is not necessarily a problem. However, strictly enforcing epistemic commitments in the way Ramsay does would not seem compatible with a broadly conceived digital humanities (arguably an important reason behind the current interest in the field), and with a view of the field as a meeting place and innovation hub (where people may come from one tradition and engage with other traditions). In particular, it would seem wise not to exclude individuals that can help build and expand the field.

Returning to the earlier citation from Terras’s manuscript, it may be claimed that the “general frustration for young scholars in our field” [Terras 2010] is an example of assigning a role and sentiment to a whole “new” generation of scholars. This kind of discourse feeds into the narrative of digital humanities as a field and confirms the need for change and/or action. Naturally, there is frustration and a multitude of challenges associated with higher education, and the humanities seems to be in a particularly vulnerable position. However, there is also a great deal of hope, energy and opportunity as well as an increasing number of jobs. It is important not only to acknowledge that young and junior scholars undoubtedly are potential agents of change but also to be careful about assigning them prescribed roles.

In any case, large-scale changes projected in vision statements for the digital humanities are likely to affect coming scholars more than people in established structures. For instance, a reformed tenure system will obviously not affect tenured faculty to the same extent as untenured faculty. Nor can there be any doubt that there is a new generation of researchers invested in the digital and in exploring and challenging structures that may make digitally inflected work contested or institutionally misplaced. In addition, it is of significance that some of the early Ph.D. graduates that combined traditional scholarship with digitally inflected work have now become tenured and institutionally more powerful. However, the pace of change should probably not be overrated nor the willingness to leverage such institutional power to overhaul the existing reward structures.

### Technology as Transformative Discourse

As the above examples indicate, information technology often becomes a way to explore far-reaching issues beyond the actual subject matter at hand. There is clearly hope and change embedded in the discourses of technology. Romanyshyn talks about technology as the “magic of the modern world.” [Romanyshyn 1989, 2]. Technology, not least information technology, is intimately connected to the idea of change and transformation. Hine says that “information and communications technologies have been a highly persuasive means of imagining our future.” [Hine 2003, 1] Change is naturally related and often thought of in relation to a previous stage of technological development and the broader context of that technology. An earlier example of this can be seen in Winner’s analysis of the introduction of aviation, which describes how aviation was projected to eliminate barriers that had divided humans and how it would bring about a new level of human relations. Winner states:

As is often the case of such visions, the political edge of the fantasy focused on social problems associated with a previous stage of development, in this case the monopoly power of the railroads. [Winner 2004, 35]

Importantly, the projected societal, political and cultural change does not always stand in a direct or foreseeable relation to the technology in question. The leverage of the vision can thus extend far beyond seemingly reasonable expectations of the technological innovation itself. Sturken and Thomas point to how technological change more generally affords “desires and concerns of a given social context and the preoccupations of particular moments in history.” [Sturken & Thomas 2004, 1] For the digital humanities, the contextual backdrop is often the current state of the humanities and higher learning more generally,
and the projected transformation concerns the reformation of these systems.

In the case of information technology, we are concerned with a multitude of different technologies and complex cultural and societal contexts. It is true that previous layers of technological innovation have historically been simplified, conflated and attributed into a single innovation (cf. Eisenstein’s work on the printing press in Eisenstein 1997), but the pervasiveness and multifaceted character of contemporary information technology distinguishes it from most other layers of technology. An important factor is the way in which information technology seems to cut across different domains, thus making it a particularly efficient “means” or way we can talk about the world as being technologically textured (Ihde 1990).

Looking at the discourse of digital humanities, it is quite easy to find radical projections:

> Whereas the modern university segregated scholarship from curation, demoting the latter to a secondary, supportive role, and sending curators into exile within museums, archives, and libraries, the Digital Humanities revolution promotes a fundamental reshaping of the research and teaching landscape. [Manifesto 2009]

Obvious indications of this transformative sentiment can be found in the word “revolution” and in the phrase “fundamental reshaping.” This type of language may be native to the particular genre of manifestos, but we certainly find this sentiment expressed in other text types as well.

The transformative discourse of technology is frequently coupled with a sense of emergency and sudden change (cf. Noble 2001 for correspondence education as an example of this), as well as a consequent pressure to change. This is also true of the revolution postulated in the digital humanities manifesto above and in their description of how we are now presented with an “incredibly exciting moment” [Manifesto 2009, 7]. Bell and Dourish use the term “proximate future” [Bell & Dourish 2007] to describe this “around the corner” moment, which tends to be invoked repeatedly in the history of a discipline. In the context of releasing a new report on humanities scholarship and technology in 2006 ([Unsworth 2006]), the American Council of Learned Societies describes how they have issued five earlier reports on the same topic (although with other foci). In this sense, the digital humanities is obviously not a new enterprise, but nevertheless there is still often a sense of newness and urgency.

The tendency to focus on the proximate future has been observed in relation to humanities computing and digital humanities on several occasions in this article series (see e.g. [Svensson 2011]), in addition to the sense of emergence and change:

> This is a pivotal moment for the digital humanities. The community has laid a foundation of research methods, theory, practice, and scholarly conferences and journals. Can we seize this moment to make digital scholarship a leading force in humanities research? Or will the community fall behind, not-quite-there, among the many victims of the massive restructuring of higher education in the current economic crisis? [Borgman 2009, 1]

Borgman asks us to act, and while there are certainly specific windows of opportunities that present themselves at certain points in time (and require swift action), the coming opportunities and associated hopes are also part of the narrative of digital humanities. The newness and uniqueness of the current moment in time is often emphasized as when Borgman describes digital humanities as “a new set of practices, using new sets of technologies, to address research problems of the discipline” [Borgman 2009, §3]. This moment and the sense of urgency are strengthened by language such as “pivotal moment” and “can we seize this moment,” and symptomatically there is also an indication of what will or may happen if we do not seize the moment. Certainly, no scholarly community wishes to fall behind and be “not-quite-there.” Incidentally, this story also overlaps with the story of cyberinfrastructure, as evidenced in this statement from the NSF Blue Ribbon Report on Cyberinfrastructure: “A confluence of technology-push and science and engineering research-pull activities and possibilities makes this the right time.” [Atkins et al. 2003, 12].

Importantly, we need not only to help create the right time ourselves, together with our academic institutions, funding agencies and other actors, but also we must be patient enough to take the time to influence the nature and form of the particular opportunities that will arise over time. The often quoted statement by the late basketball coach John Wooden may be appropriate here: “be quick, but don’t hurry.” This is a major challenge for the digital humanities and, indeed, for the humanities.

**Part II: Articulated Futures**

**Introduction**

An important source of material about the hopes, visions and expectations associated with the digital humanities is various
institutional documents and websites, articulated visions, manifests and mission statements. This is by no means a uniform or unproblematic genre, and sometimes visionary and forward-looking statements are susceptible to criticism because of their very nature. For instance, they will typically not exhibit the kind of rigor associated with academic papers. Visionary statements are normally not easily verifiable as they are projecting the future and may be proven obviously wrong in due time. They can thus provide an easy target for attack and even ridicule, and it is important to exercise analytical caution. As for the digital humanities, many institutions do not present a clear vision or mission (cf. Terras 2010), which could arguably be seen as problematic as highly tendentious visions.

As Hine [Hine 2003, 2] convincingly argues, visionary documents and similar material present us with an analytical opportunity (cf. also [Jankowski 2009, 6]). She points to the fact that practices and knowledge outcomes are indeed changing as a result of digital technologies, that investments in scholarly technology are quite substantial and that science is a significant area of our social life. In their analysis of the domain vision of ubiquitous computing, Bell and Dourish [Bell & Dourish 2007] point to how visions not only tell us about the future but also about the present. Hine [Hine 1995] shows how technology can be used in processes of disciplinary change and reorientation. She looks at the biological discipline of taxonomy and how a particular information system approach could be interpreted as imposing a specific model of the discipline through the technology. A similar argument could easily be made for certain attempts at devising cyberinfrastructure for the humanities or, indeed, for specific visions or manifestos for the digital humanities. The stakes are considerable, and it is argued that a discursive analysis can help us both understand the contemporary landscape of the digital humanities, the hopes invested, and the issues and models that are projected through these visions and expectations.

Expectations can be an integral part of the frame of certain genres or types of discourse. For instance, a manifesto is typically expected to be high-key, opinioned, make a case and be engaged with the future. A white paper for a new institutional or funding initiative is normally more low key and at least seemingly factual and it is also inherently forward-looking. While other text types may be more “neutral” in this regard, we need to be sensitive to framing and associated expectations (cf. [Entman 1993]). A simple example would be an interview with Brett Bobley, Director of the NEH Office of Digital Humanities, that was published on the HASTAC website in the beginning of February 2009 ([Smith 2009]). The theme was “The Future of the Digital Humanities” and the interview was carried out by two HASTAC scholars. Here the expectations are suggested by the questions, which seem to project a visionary sentiment and a particular kind of frame. This is particularly noticeable in first two questions in this particular interview. The first set of questions was “What are the most interesting innovations happening right now in the field of digital humanities, and is it possible to predict or anticipate what will be most important in the future?” and the second set of questions was “How do you see digital technology transforming work in the disciplines of the humanities? Are there disciplines in which digital technology will have less of an impact?” Here, the framing itself, articulated through the questions, suggests a notion of the digital humanities as innovative culture, giving technology a transformative power.

I will now look critically at four specific texts that have a clear forward-looking sentiment in relation to the digital humanities and cyberinfrastructure for the humanities: a manifesto, scholarly report, institutional website and plenary lecture.

A Manifesto

The “Digital Humanities Manifesto 2.0” is the second iteration of a document first produced in 2008-2009. The question of authorship is somewhat complex and we will come back to it, but “parts of the manifesto” were written by Todd Presner, Jeffrey Schnapp and Peter Lunenfeldt. Presner introduced the second version of the Manifesto on his blog:

The purpose of the Digital Humanities Manifesto is to arouse debate about what the Humanities can and should be doing in the 21st century, particularly concerning the digital culture wars, which are, by and large, being fought and won by corporate interests. It is also a call to assert the relevance and necessity of the Humanities in a time of downsizing and persistent requiems of their death. The Humanities, I believe, are more necessary than ever as our cultural heritage as a species migrates to digital formats. This is a watershed moment in the history of human civilization, in which our relationship to knowledge and information is changing in profound and unpredictable ways. Digital Humanities studies the cultural and social impact of new technologies as well as takes an active role in the design, implementation, interrogation, and subversion of these technologies. [Manifesto 2009]

This is a clear example of how the digital humanities can become a means to discuss the future of the humanities at large. There is a clear sense of the urgency required if we are to act on this “watershed moment in the history of human civilization.” The answer, seemingly, is the digital humanities, although the exact nature of the link (beyond our cultural heritage becoming digital) between the necessity to reconfigure the humanities and the digital humanities may not be entirely clear from this
fragment. While the incarnation of cultural heritage in the first part of the citation may seem to indicate a particular type of digital humanities, the final sentence presents a broad and fairly open definition of the field. It is noteworthy that several modes of engagement between the humanities and the digital are incorporated into this vision. There is an emphasis on the broad study of the impact of technologies as well as on actively engaging with design, implementation and subversion.

The pdf version of the manifesto is a 14-page long document with extensive visual material, although the visuals are more illustrative than core to the argument (not surprising given that the basic manifesto is text based). It is clearly stated on the first page that we are not concerned with an academic treatise, and if you “are wondering who is reaching out here, the answer is plural.” There is no explicated authorship in the actual manifesto, and interestingly the strongest indication of authorship and ownership can be found in the initial disclaimer of the Commentpress version of the manifesto (not in the pdf version): “The content of the manifesto represents the view of the authors and does not claim to represent the views of UCLA, the UCLA Humanities, Division, and the Digital Humanities at UCLA.” The three institutions named should seem to be more likely sites of ownership and authorship than others – or the disclaimer would presumably not be necessary.

The Digital Humanities Manifesto 2.0 describes a universe where “print is no longer the exclusive or the normative medium in which knowledge is produced and/or disseminated” [Manifesto 2009, 2], and where digital tools, techniques and media “have altered the production and dissemination of knowledge in the arts, human and social sciences.” While these are by no means “weak” assertions, the subsequent set of sentences make an unquestionably strong statement:

The Digital Humanities seeks to play an inaugural role with respect to a world in which, no longer the sole producers, stewards, and disseminators of knowledge or culture, universities are called upon to shape natively digital models of scholarly discourse for the newly emergent public spheres of the present era (the www, the blogosphere, digital libraries, etc.), to model excellence and innovation in these domains, and to facilitate the formation of networks of knowledge production, exchange, and dissemination that are, at once, global and local.

[Manifesto 2009, 2]

This is partly an institutional vision or assertion in the sense that it projects a future role of the field of digital humanities. Manifestos, by nature, tend to draw on stark contrasts, and here the digital humanities is a key player in a world where universities, displaced as principal producers of knowledge, are “called upon” to form new digital models of scholarship for a set of public spheres currently emerging. The question is who is doing the calling, and if the juxtaposition of a world where universities supposedly were sole producers of knowledge with a world where universities are supposedly called upon is not too stark and simple to actually be productive.

A range of contrasts are presented in the manifesto. For instance, it relates a contemporary structure of small and rigorous academic areas of expertise and sub-expertise to a digital humanities with large-scale projects, distributed models and “big pictures” partly built on expert knowledge. A university that segregates scholarship from curation is contrasted with a world where curation is a central feature of the future of the humanities disciplines. The traditional disciplinary structure is questioned, and the manifesto asks: why defend 19th century structures when “the intellectual ground has shifted out from under their feet?” [Manifesto 2009, 11]. Statements like these make it quite clear that the digital humanities is employed as a means of rethinking the academy and scholarship more generally and that the digital sometimes functions more as a lead-in or a projectile than a sustained focus.

Let us now return to questions of how the “Digital Humanities Manifesto 2.0,” was created and agency. According to Todd Presner ([Presner 2009b]), one of the main authors of the manifesto, the text was partly written by himself, Jeffrey Schnapp and Peter Lunenfeldt. Other parts came from a collaborative process through a Commentpress blog (where most of the comments addressed the first version of the manifest), and participants of the Mellon Seminar in Digital Humanities wrote even other parts. This process is particularly interesting given the strong argument made in the manifesto for co-creative scholarly processes, social media as a model, and the emphasis on the manifesto as a product of plurality and iterative scholarship. Looking at the comments on the first version of the manifesto, published on December 15, 2008, there were a total of 116 comments as of March 25, 2010 (comments were made on the whole text as well individual paragraphs). Of these, almost half (49% or 57 comments) came from the top five commentators. The main authors identified above did not play a very active part in this web-based space, and it is unclear how comments were implemented in the second version of the manifesto or how the different modes of authorship interrelated (main authors, Commentpress, seminar participants). What is clear, however, is that the main authors have authority. The only apparent main author comment for the first version of the manifesto, apart from a blog entry announcement, contained a suggestion:
Add: -Department of Erasure Studies: The purpose of this department is to develop models and criteria both for the cancellation of records and archives, and for selective, strategic, and smart conservation and archiving. [Manifesto 2008]

This suggestion was implemented in the second version of the manifesto, if only as the category name “School of Erasure Studies” (illustrated by an eraser). What is most interesting here is the authoritarian mode of the comment indicated by the simple initial “Add.” This is arguably an author’s voice rather than a co-creative suggestion.

Our Cultural Commonwealth

“Our Cultural Commonwealth” was published in 2006 by the American Council of Learned Societies, which in 2004 asked John Unsworth to chair a Commission on Cyberinfrastructure for the humanities and social sciences (appointed by ACLS). Unsworth selected the other members of the commission and its advisers. In the foreword to the report, it says that the “analysis and recommendations of this report are theirs, but the responsibilities for grappling with the issues they present lies with the wider community of scholarship and education” [Unsworth 2006, i]. Importantly, the focus of the report is not the digital humanities exclusively but cyberinfrastructure for the humanities and (interpretative) social sciences.

The foreword, signed by the president of the ACLS, may not set the frame quite as distinctly as the HASTAC interview questions we considered earlier, but there is certainly visionary sentiment here too. Indeed the first sentence of the foreword frames the report:

I am pleased to commend Our Cultural Commonwealth to what I hope will be the many readers who will find in the report a vision of the future and a guide to realizing that future. [Unsworth 2006, i]

The president also points out that earlier reports on the same topic focused on technology to support research on traditional objects of study, which also serves as a starting point for the current report, but that “the widespread social adoption of computing is transforming the very subjects of humanistic inquiry” [Unsworth 2006, ii]. This transformation is linked to the need for cyberinfrastructure for the humanities and social sciences:

The intensification of computing as a cultural force makes the development of a robust cyberinfrastructure an imperative for scholarship in the humanities and social sciences. [Unsworth 2006, ii]

The links between computing as a cultural force, humanities scholarship and cyberinfrastructure are complex. For instance, in contrast to the above assumption, it could be argued that humanities scholarship in relation to computing as a cultural force can be carried out without large-scale investments in cyberinfrastructure. For instance, critical studies of computation do not necessarily require extensive research infrastructure.

The first chapter of the report is entitled “Possibilities: A Grand Challenge for the Humanities and Social Sciences.” One initial frame of reference is teenagers and their creative and communicative and social uses of technology. A major challenge is presented:

The challenge for scholars and teachers is to ensure that they engage this outpouring of creative energy, seize this openness to learning, and lead rather than follow in the design of this new cultural infrastructure. [Unsworth 2006, 10]

It might be questioned whether humanities and social science scholars will ever lead the way in designing pervasive cultural infrastructure of this type, but it is certainly a major vision and challenge. However, as we have already noted, the invocation of a digital generation can be problematic. It could be argued that we are concerned with two fairly disparate levels of infrastructure and cultural representation in this case. On the one hand, everyday cultural, social and “creative” uses of digital technology as part of our everyday lives – especially young peoples’ everyday lives (cf. [Livingstone 2009]). On the other hand, digitalized cultural heritage and digitally supported access. The connection between these two levels seems fairly weak in the text under consideration. The report clearly focuses on the latter, and the overall vision would seem to be the unification of public record ([Unsworth 2006, 17]) and general access to digital cultural heritage:

We should place the world’s cultural heritage – its historical documentation, its literary and artistic achievements its languages, beliefs, and practices – within the reach of very citizen. [Unsworth 2006, 40]

As we have already noted, this is indeed a strong and utopian vision, although in contrast with some of the visions we have
discussed above, it seems more precise and directly related to the digital humanities – in particular the tradition of humanities computing. One of the most established digital humanists, Jerome McGann, is reported to have said the following at the UVA Conference *The Shape of Things to Come*: “McGann’s big vision: every book, every periodical, every user plugged into one interoperable network #uvashape” [Cordell 2010]. There is also an explicit allusion to the “inherently democratizing power” of digital information in the report ([Unsworth 2006, 27]). The above vision of public access to digitalized cultural heritage is materialized through a list of necessary characteristics for associated cyberinfrastructure. According to the report, such cyberinfrastructure would have to be accessible as a public good, be sustainable, provide interoperability (seamless across repositories), facilitate collaboration and support experimentation. This technology is presumed to come with considerable leverage:

Evolving technologies not only provide unprecedented access to a variety of cultural artifacts but also make it possible to see these artifacts in completely new ways. [Unsworth 2006, 15]

Here we find reference to the proximate future often invoked by technology through “evolving technologies.” These technologies do not only give excellent (“unprecedented”) access to cultural artifacts, but also make it possible to see these artifacts in entirely (“completely”) new ways. This is a fairly positivistic argument, associated with the discourse of cyberinfrastructure (cf. [Svensson 2011]), which gives significant agency to technology. Furthermore, it is quite clear that the cyberinfrastructure envisioned is strongly associated with cultural heritage, repositories and perseveration.

The focus on cultural heritage is also apparent in the set of recommendations given in the report ([Unsworth 2006, 23–29]), even if they are more general. The recommendations include prioritizing investment in cyberinfrastructure for the humanities and social sciences, promoting openness and access, and creating extensive and reusable digital collections. This focus is not surprising, given the nature of the report, but there is an interesting conflation of the fairly specific use of research infrastructure and a more general vision. For instance, in the executive summary of the report, it says that Chapter 1 “makes the case for the transformative potential of an improved cyberinfrastructure with respect to the preservation and availability of our cultural heritage” [Unsworth 2006, 2]. In the introduction, it is also said that the same chapter “articulates a vision for the future of the humanities and social sciences” [Unsworth 2006, 9]. The report focuses considerably more on the former than the latter. In doing so, it arguably engages more with a science and engineering based model for research infrastructure and a humanities computing interest in cultural heritage than with an inclusive and far-reaching vision for the humanities.

**Sparking a Revolution**

The work of envisioning the digital humanities is naturally also done on the institutional level, and I will now turn to an examination of institutional web presences for the digital humanities. In fact, many institutional websites do not provide elaborate information on visions or even goals (as noted by [Terras 2010]). Others provide fairly extensive statements and visionary grounding. While some of these websites may not be updated consistently or be seen as a community expressions, they still constitute an important mode of institutional representation and outwards projection. Instead of surveying a great many websites, many of which are not very rich in terms of visionary content, I will look at one particular example in more detail.

At the time of this study, the Institute for Computing in Humanities, Arts, and Social Science (I-CHASS) at University of Illinois at Urbana-Champaign had a prominent multi-colored textual banner on the cover page of their website saying “Sparking a revolution in digital humanities, arts, and social science research and education.” In their mission and goal statement, the close collaboration with the high performance computing center is quite clear in terms of the vision and frame articulated:

> With an emphasis on identifying, creating, and adapting computational tools that accelerates research and education, I-CHASS engages visionary scholars from across the globe to demonstrate approaches that interface next-generation interdisciplinary research with high-performance computing. I-CHASS provides these researchers with world-class computational resources, both human and technical, to enhance their knowledge discovery and exploration. [I-CHASS 2010, Mission]

Here, we are concerned with a vision that is partly tool based, with a particular focus on high-performance computing. The visionary sentiment is strengthened through language such as “accelerates research and education,” “visionary scholars” and “next-generation interdisciplinary research.” The offer to researchers is first-rate computational resources, technical and human, which will allow them to “enhance their knowledge discovery and exploration.” The quote above suggests a clear separation of scholars and human “computational resources.” Unsurprisingly, there is also a fairly pronounced focus on technology and on helping the humanities, arts and social sciences to use these resources:
An approximate future is invoked through the expression “ripe to be leveraged” and through the mention of “the forefront.” The vision articulated in the mission and goals seems to suggest a model where scholars in the humanities are “helped” by computing and other related competencies (for a critique of this model, see [Drucker 2009b]). The latter group does the work of “leveraging” the appropriate (mostly data intensive) technologies, and providing assistance. The assumption, possibly correct, is that humanities scholars have limited computational knowledge. However, the phrasing below suggests a clear framing based on predetermined and separate roles:

We show researchers and students with little knowledge of advanced computing how to use new technologies in their work. [I-CHASS 2010, Goals]

Also, the process described (“We show”) would not seem to indicate a particularly iterative and integrated approach. These quotes arguably contribute to construing humanities researchers and students as subjects, rather than active, co-creative agents. There is little in the text about humanities driven research challenges, and presumably the “brokering” is often carried out in relation to available technologies and the opportunities these present.

### Addressing the Community

As was previously mentioned, Melissa Terras was the concluding plenary speaker at the Digital Humanities 2010 conference at King’s College, London, on July 10, 2010.[5] Her speech attracted a large local and distributed audience and much appreciation. While it may not be full of visionary “speak” of the kind we just examined in the context of institutional websites, it is quite relevant in terms of forward-looking sentiment and discussing the future of the digital humanities. Indeed, the talk was described as “a call to action” [Fitzpatrick 2010], and there was a great deal of discussion about the plenary session in various media and channels including an article in the *Times Higher Education* (July 15, 2010) with the provocative heading “As a discipline, we suck online.” This heading, as well as the article, presumably demonstrates how difficult it can be to “sell” a message that is somewhat dismal in such a way that it actually promotes the field.

Terras makes an initial point of the plenary not being done by someone “external to the community,” but rather someone “well within the community.” The community addressed is, of course, mainly the attendees at the conference – physically present in the room or watching the live-streamed version in another lecture theater – and the members of the conference associations. More generally, the community addressed would seem to be the community of digital humanities, which is evident from the title “Present, Not Voting: Digital Humanities in the Panopticon.” At the end of the manuscript, Terras says:

> This has been an honest tour of what DH means to me, and some of the issues which DH is presented with at the moment. [Terras 2010] (not in the actual plenary speech)

It is thus very clear that the talk is about the digital humanities. In the written manuscript, the denomination “digital humanities” is employed 36 times and “DH” in the sense of digital humanities (excluding references to the DH2010 conference) occurs 35 times.[6] Importantly, there is a considerable emphasis on community and community building, which is lexically demonstrated by 25 instances of the very word “community.” The personal pronoun “we” carries an important including role in the text, and there are as many as 134 occurrences of this word in the manuscript. Incidentally, there are no instances of “humanities computing,” which used to be the self-identifying community denomination of the associations behind the Digital Humanities conference. These frequency data are necessarily crude, but they give us a sense of how language is used to address and include the field and community.

A simple comparison is offered by John Unsworth’s recent talk on the state of the digital humanities [Unsworth 2010]. The two texts are roughly equally long, and based on normalized data, Terras references the “digital humanities” 1.2 times as often as Unsworth (a total of 125 instances in both texts), which seemingly shows the primacy of this concept in both texts. However, Terras refers to “community” about 8 times as often as Unsworth, and “we” is close to 4 times more frequent in Terras’s text.[7] This clearly demonstrates Terras’s emphasis on the community and her inclusive mode of address. The focus on the field is also evident in the use of the very term “field,” which occurs 19 times in the sense of the field of digital humanities. There are also 11 instances of “discipline” in the sense of the discipline of digital humanities. The latter figure is arguably more interesting in that “discipline” may be seen as suggesting a comparatively high degree of institutionalization, as well as a view of digital
The context and contemporary moment make Terras's talk particularly interesting. Her talk is situated in the annual and long-standing digital humanities conference with a strong heritage in humanities computing at a time when the field is undergoing expansion and negotiation and when there is discussion of inclusion and exclusion (Rockwell 2010). While Terras in no way is an accountable representative of digital humanities, or a specific tradition, she performed a significant role as a chosen plenary speaker within the field of digital humanities and as a representative of the community associated with the digital humanities at a key conference at an important point in time. Also, the talk is significant because of the praise it received within the community and among conference participants.

When discussing the effects of the dire situation for higher education in the UK, Prescott refers to “Melissa Terras’s remarkable plenary address at Digital Humanities 2010, one of the most compelling and visionary statements on the digital humanities I have ever heard” [Prescott 2010a]. It thus seems clear that the plenary struck a chord with the digital humanities community, and that there is a lasting sense of visionary sentiment and power.

In the talk, a specific project – The Bentham Project (which aims at producing new editions of the scholarship of Jeremy Bentham) – is presented and used as a way to discuss digital humanities more generally. After a discussion of mainly the technical and structural development of the project (keywords include access, transcriptions, crowdsourcing, text encoding initiative and digitalization), it is said that:

> We can peer at Digital Humanities through this one project, and see the transformative aspects that technologies have had on our working practices, and the practices of those working in the historical domain. [Terras 2010]

Two observations can be made here. Firstly, technology is given considerable agency, the strength of which is indicated through the adjective “transformative.” Secondly, a clear distinction is made between “our working practices” (those of the digital humanities participants) and the practices of “those working in the historical domain” (cf. the discussion of I-CHASS above). This would seem to indicate a significant separation between the digital humanities community and the humanities researchers in this case mainly historians. Work practices are part of the epistemic core of a discipline or tradition ([Knorr Cetina 1999, 7–8]), and therefore significant. This separation should be seen as a problem, naturally, but would seem characteristic of the tradition of humanities computing [Svensson 2009]. The role of the digital humanist is that of an intermediary agent or representative of the “technology side”. Terras says that “I’ve just been drafted in to help bridge the gap between primary sources, dedicated scholars, and new technology” [Terras 2010].

While Terras does not explicitly advocate a particular type or subset of digital humanities, her plenary lecture is deeply embedded within the tradition of humanities computing and entangled with the three affiliated associations behind the Digital Humanities conference. This may not be very surprising but certainly interesting at a time when the landscape of digital humanities is being expanded and negotiated. In her discussion of emerging issues in the digital humanities, Terras gives evidence of her epistemic position. For instance, the above point about digital humanists operating in between researchers, data and technology is reiterated. Another example concerns the type of material and data. As I have argued elsewhere [Svensson 2009, §53], humanities computing tends to be concerned with digitalized materials rather than born-digital data. Even though Terras discusses digital legacy data, there is little discussion of “new” digital data:

> But as well as working with historical documents (or artefacts, or whatever), it’s becoming increasingly common with the Digital Humanities that we have to work with historical digital documents – or legacy data, left over from the not-so-distant past, in different formats and structures that need bringing into current thinking on best practice with Digital data. [Terras 2010]

Furthermore, it is clear from Terras’s discussion that a primary concern is adequate text encoding of these materials. Again, this is not surprising, but telling. Indeed, this traditional humanities computing engagement would seem to help explain why the
piece has had so much resonance in the community. Another critical part to this resonance is that Terras is usefully pushing that same tradition by talking about crowd-sourcing for transcribing, the importance of high-quality digital presence, and the need to articulate what digital humanists do.

Of course, the Bentham Project as a historical transcription endeavor sets the scene for this part of the talk, but the choice is not accidental. Terras says the project shows the progression of the field in "historical manuscript based projects":

The Bentham Project has been primarily occupied with print output, gaining a web presence in the mid 1990s, then an online database of the Bentham archive in the early 20th Century, and is now carrying out a moderately large scale digitisation project to scan in Bentham’s writings for Transcribe Bentham. In addition, the Bentham Project has gone from a simple web page, to interactive Web 2.0 environment, from MS Word to TEI encoded XML texts, and from a relatively inward looking academic project to an outward facing, community-building exercise.

Indeed, it could be argued that the story of the Bentham Project is the story of humanities computing as digital humanities more generally. This is part of the appeal and strength of Terras’ talk. However, it is important to acknowledge that this is one story and that there are other epistemic traditions.

Epistemic commitments come into play when considering different modes of knowledge production:

Because no matter how successful Transcribe Bentham, the “impact” will be felt in the same usual way – through publications. This is a nonsense, but it’s part of the academic game, and is becoming of increasing frustration to those working in the Digital Humanities. It’s not enough to make something that is successful and interesting and well used: you have to write a paper about it that gets published in the Journal of Successful Academic Stuff to make that line on your CV count, and to justify your time spent on the project.

Terras largely positions herself and the digital humanities outside of predominant modes and structures of knowledge production. There can be no doubt that the issue of what qualifies as acceptable modes of knowledge production is an important one and that there is a considerable top-down push – not least in the UK through the Research Evaluation Framework. It is noteworthy here, though, that the Center for Computing in the Humanities at King’s College did very well in the 2008 Research Assessment Exercise [CCH Newsletter 2009]. This is a complex issue, however, and there is considerable variation across a more broadly conceived digital humanities. The above statement, and especially the sentiment evident through use of descriptors such as “nonsense” and “part of the academic game,” may resonate with part of the humanities computing community, heavily invested in the type of production Terras discusses, but it may not harmonize with the many digital humanists invested in traditional or mixed modes of knowledge production. A key question is what alternative is offered. How will the digital humanities have a real long-term impact on the humanities and the academy? While, on one level, it may be good enough to “make something that is successful and interesting and well used,” it may not be good enough or convincing in terms of potential scholarly impact, visionary power and outward credibility (which Terras emphasizes elsewhere in her talk).

A subsection of the written manuscript is called “Fears for the Future,” and Terras paints a fairly bleak picture of the future of the digital humanities. This sentiment, however, should be seen in the context of the downturn in the economy and the problems for higher education in the UK and elsewhere. Terras talks about “We’re all scared” and points to how we arrived to a different place:

I remember very strongly that at the end of an upbeat DH2009 Neil Fraistat stood up and said “The Digital Humanities have arrived!” But in 2010, the place we have arrived to is a changed landscape, and not nearly as optimistic. [Terras 2010] (ot in the actual plenary speech)

Clearly this vision or addressing the future is different from some of the future projections we have looked at so far. Indeed, after the Digital Humanities 2010 Conference, the situation in the UK has become worse than some of the direst predictions. Terras makes a case for presenting and enacting the digital humanities in the best possible way and to articulate what it means to be a digital humanist and what the digital humanities is about. It makes sense to ensure that digital humanities is funded at the time when funding is being withdrawn from the Humanities. We need to be prepared, and to articulate and explain why what we do is important, and relevant.

But at the same time, it could be argued that what the digital humanities needs is an inclusive and forward-looking (not necessarily utopian) vision. That strength comes from incorporating different epistemic traditions and projecting digital
scholarship as well as substantial scholarly leverage.

Part III: Envisioning the Digital Humanities

Introduction

As we have seen, there are many different visionary statements, goals and hopes associated with the digital humanities. Just as there is no single vision, there is no one set of concerns, issues or technologies that feed into the process of envisioning and defining the digital humanities. In this section, a vision of the digital humanities will be presented in the form of a number of “design parameters”. These do not project a singular vision, nor a set of visions or issues, but rather a visionary space.

Given the number of new and coming digital humanities initiatives, and the general interest in the field it is hoped that these parameters can serve as one starting point for a discussion. The aim is to stimulate discussion and encourage reflection relating to some of the parameters below in an implementation process rather than to impose a particular vision or a definite set of design principles. A loose and suggestive vision seems viable given the fact that the digital humanities is such a heterogeneous and contextually configured entity. There is no single model or size that fits all. The difference between a university-wide digital humanities center, a departmental research group and an international virtual network is quite significant. Similarly, an institute devoted to studies of the internet is quite different from a center focused on creating and adapting tools for textual analysis. Furthermore, the context of a technical university college or a liberal arts college is different from a comprehensive university. An initiative imagined as a way of changing the humanities (and the university) is different from an initiative focused on strengthening research in one particular area.

The Visionary Context

It goes without saying that given this variation and multiplexity, factors such as organizational placement, basic strategies and technical infrastructure are contextual and disparate. Given an inclusive notion of the digital humanities, the total scope of possible design parameters is quite large. If we look at initiatives that self-identify as “digital humanities”, the scope is somewhat smaller.

Considering university level or humanities wide initiatives in the digital humanities, there is not only considerable variation, but there are also many commonalities. There is, for instance, typically a need to facilitate collaborative work across traditional disciplines, stimulate faculty engagement, and bring in funding for projects. Often there are infrastructural needs in terms of space, technology and staff. In the case of initiatives invested in reconfiguring the humanities, addressing the state and development of the humanities will be a recurring interest. Since a university or school investment in the digital humanities would normally be tightly linked to policy making and funding opportunities, there would also be attempts at securing such funding or influencing funding agencies at various levels to invest in the “new” area. Long term, this process may lead to fewer “sizes” of digital humanities, as these opportunities in turn shape, or even constrain, new and, to a lesser extent, existing initiatives.

It would seem that the most easily identifiable type of digital humanities initiative is the “digital humanities center”, broadly referring to a distinct center with some kind of institutional stability, people and technology resources, and as noted above, working across more than single disciplines or research groups. Digital humanities centers are typically associated with comprehensive universities or research universities, but they are becoming more common also in other contexts (although not always called digital humanities centers), while naturally not being the only model (cf. [Sample 2010a]). The history of digital humanities and humanities computing includes a number of initiatives to list, group, network and discuss such centers based on different criteria and assumptions (see e.g. [McCarty & Kirschenbaum 2003], [Zorich 2008], and the CenterNet initiative).

An External Point of View

In her DH2010 plenary speech, Terras emphasizes the importance of looking at the digital humanities from the outside [Terras 2010]. What does the field project outwards? How do we present ourselves and the work we do? Taking this assumed external position, I would briefly like to address some other challenges that are relevant to envisioning the digital humanities but rarely get much attention in whitepapers and on institutional websites. One important point concerns the “whiteness” of digital humanities:

No offense, but where are all the people of color? Not that the work being done by these current superstar academics isn’t amazing and important, but where are those individuals and communities who are visibly different
Cong-Huyen’s reflection followed the MLA 2011 conference, and there seems to be a sense that the digital humanities both lack in diversity in the community and in approaching diversity and race critically (e.g. a THATCamp SoCal session on diversity and digital humanities in January 2011). This latter point relates to a concern that the digital humanities does not have a strong critical or theoretical engagement. This concern, as articulated by various commentators, has surfaced several times in this article series, and is clearly seen as problematic both inside and outside the community. Higgin says that “Without a robust critical apparatus, DH has and will continue to unwittingly remake the world in its old image.” [Higgin 2010] This point is also highly relevant to the connection between the digital humanities and the humanities at large.

It could be argued that the community needs to better foreground and support work that relate to vital non-instrumental research challenges in the disciplines. Some examples of “rich” themes taken from relatively recent books and courses include: what counts in electronic music as a gendered domain in terms of production and noisemaking; looking at factors such as erasure and variability in relation to electronic literature; the impact of technology on ideas about architectural design and the cultural imaginary of the body; how transcontinental railways reconfigured space/time and remade the landscape of the West; and how media and security interrelate as technologies such as filtering and sorting have become part of national defense.[8]

In an *Insider Higher Ed* article, Barron discusses how big data, quantitative methods and visualization can make the digital humanities seem more “digital” than “humanities”:

> For many of us trained in the humanities, to contribute data to such a project feels a bit like chopping up a Picasso into a million pieces and feeding those pieces one by one into a machine that promises to put it all back together, cleaner and prettier than it looked before. [Barron 2010]

As indicated by Nakamura’s comment discussed earlier (on the “counting” done in digital humanities) and the heated argument around “making” and “coding” referenced above, this is clearly a charged topic. Of course, digital humanities is not at all without theory or critical reflection, but it would seem that there is a place for envisioning a more critically engaged digital humanities and also for considering how we communicate critical engagement as well as engagement in technology and commitment to “making” in a broad sense.

**A Visionary Scope of the Digital Humanities**

As we have seen, there is no single vision of the digital humanities, nor can a single vision even be possible. Many visions are quite abstract and sweeping and will thus be fairly inclusive and consequently lacking in concreteness. Likewise, singular visionary statements have a tendency to be at least partly excluding in their nature, and are sometimes also provocative. However, it would be unfortunate if the visionary sentiment of the digital humanities could not be recruited in thinking about the future while also maintaining grounding and a nuanced view.

In the following, a visionary scope of the digital humanities will be contoured using a set of design parameters. These parameters draw on personal experience, the discussion in this article, as well as the article series in its entirety. They are not meant to be all-inclusive nor a list to tick off, but rather suggestive and ideally help initiate dialogue and reflection. Also, we need to exercise critical caution while allowing for visionary work, experimentation and engagement in the actual implementation of the digital humanities.

There was a related discussion in *Humanist* on designing the academic digital humanities department in the fall of 2010. This discussion was largely framed by *Humanist* editor Willard McCarty, and it focused mostly on a very practical level including discussing ratios between technical staff and faculty, whether to do consultancy, and the importance of communicating with the public. The framing did not only encompass the questions posed by the editor, but also was grounded in a humanities computing based tradition. Hence the inclusion of technical staff or technical infrastructure, for instance, did not seem to meet any resistance. Some discussants pointed to conceptual issues such as the importance of thinking about how to support collaborative cultures:

> While it is understandable to want to reproduce structures institutions are familiar with, nevertheless, no matter what structure institutions may adopt, it is essential, I feel, to foster collaborative cultures between all participants be they academic, technical, or academic-related post-holders. Forming such cultures requires leadership, institutional support and a willingness on the part of all participants, irrespective of their individual disciplinary backgrounds, to engage in dialogue and dissemination. [Cronin 2010]
Deeply collaborative work requires a supportive culture, and Cronin suggests that this involves a range of factors. Such factors can contribute to a kind of a conceptual underpinning. The parameters discussed below are more of this conceptual type than directly practical.

The design parameters under consideration are: mutual respect, the digital humanities as a trading zone, the importance of space, connecting to the disciplines and engaging across multiple modes of engagement, making technology part of the digital humanities, and the field as an arena for innovation and rethinking. Importantly, the parameters function more as a possible target than a presentation of “natural” qualities of contemporary digital humanities.

**Design Parameter: Assume Mutual Respect**

Mutual respect can be seen as a very basic quality, but for that reason, it can sometimes be taken for granted. However, exactly because of its fundamental quality and its importance for interdisciplinary endeavors, such as in the digital humanities, it deserves attention. Indeed, the importance of mutual respect is sometimes pointed out in research on interdisciplinary practice (cf. e.g. [Repko 2008, 44]). In any enterprise where you facilitate meetings across traditional boundaries – whether it be across disciplines, across parts of the university, between the university and the outside world, between faculty and technical staff or between faculty and students - explicit mutual respect can help make that boundary crossing easier and more productive. It lowers the threshold to engagement, encourages “positive” exchange and makes participants more willing to step out of their comfort zone. The sense of an allowing and friendly space does not imply, however, that discussions should not have intellectual edge, that there should not be tension or that everyone has to be overly “nice” all the time, but rather that there is basic level mutual respect that is fundamental to the operation. Shanks says that “Collaboration does not mean consensus — dissent is good. Enable such a diversity of voice.” [Shanks 2008] The point is that expressing dissent and having rich collaborative discussions are indeed combinable with mutual respect and “being nice”.

For instance, this respect should extend to traditional disciplines and the accumulative work done in these disciplines, as well as the work carried out by new formations. Even when faced with rather provocative issues, such as the future existence of one’s own discipline, many scholars are willing engage in discussions. As a general rule, however, it helps not to be unnecessarily provocative. For instance, cursory dismissal of existing disciplines or particular work practices is not recommended, and excluding people through enforcing your own epistemic commitments is strongly discouraged.

Mutual respect entails being interested in other people’s research and practice, acknowledging different epistemic traditions, engaging in dialogue and collaborative work regardless of someone’s position in the university hierarchy or other structures, but also respecting more “monastic” work processes (cf. [Manifesto 2009, 5]) and a temporary reluctance to be highly dialogic. As we shall see, carefully designed space – whether mostly physical, mostly digital or mixed – can support both individual practice and collaborative, trading zones [Galison 1997]. One way of addressing this particular contrast is to use translucence as one design principle to allow for multiple zones at the same time (cf. [Svensson 2011]), and thus hopefully making respectful work and rich collaboration easier.

**Design Parameter: Allow the Digital Humanities to be a Trading Zone and Meeting Place**

Most varieties of digital humanities seem to have a core engagement beyond a single discipline or well-defined institutional center. As we saw earlier, this broad engagement is closely related to the visionary scope of the digital humanities. Even when pushing for digital humanities departments on par with other departments, it would seem that the digital humanities rarely is conceived of as a traditional “walled” department. An important realization is that broad engagement and collaborative practice are not a given but have to be built and supported through institutional, cultural and individual commitment. In the aforementioned Humanist discussion, Cronin points to the importance of building a collaborative culture for the digital humanities [Cronin 2010].

In his classical work on knowledge building, Galison introduces the notion of trading zones, which allows him to show that cross-sectional knowledge building requires the identities and practices of individual traditions, and that this tension can be quite productive.

> Different finite traditions of theorizing, experimenting, instrument making, and engineering meet – even transform one another – but for all that they do not lose their separate identities and practices. [Galison 1997, 137]

Such processes operate on multiple levels and relate to aspects of digital humanities such as tool building, understanding of shared digital resources, theory making and the dynamics of the spaces associated with the field. Given that collaborative and
interdisciplinary work seems to be characteristic of much of the digital humanities, it would seem tenable to categorize the field as more open and intersectional than many others. There are different types and levels of openness, however, and it could be argued that the digital humanities could make “openness” a much more central and clearly articulated concept or vision.

Making the digital humanities an open, inclusive and dynamic meeting place requires commitment and engagement on multiple levels as well as a willingness to be a trading zone. The idea of an open and accessible meeting place is far-reaching, and not necessarily easy to implement in the highly structured and hierarchical system of higher education. Indeed, there is a certain degree of non-permanence, fluidity and resistance to hierarchies associated with such meeting places. Bey talks about temporary autonomous zones to describe the strategy of creating temporary spaces that elude formal structures of control and that are created on the boundary lines of established regions [Bey 1991]. According to Bey, there is a power, intensity and creativity to such territories. An interesting question thus arises: how does the digital humanities position itself in relation to temporal and hierarchical structures, and what is required to create and maintain a functional trading zone?

On a more practical level, there are a number of factors involved in seeing the digital humanities as a trading zone. For instance, it requires the digital humanities to be comparatively non-territorial and comfortable with existing outside some traditional structures. Finding ways of sharing costs between schools, departments and programs is also often difficult. While being different is problematic in some ways, the possible gains are arguably substantial. It makes broad engagement across and outside the humanities easier; it increases the number of possible interaction points; and it allows the digital humanities to be a laboratory for the humanities. Trading zones do not necessarily stop at departments or schools. Importantly, such zones or meeting places could, and probably should, extend outside the humanities proper to other parts of the university and, if appropriate and mutually beneficial, to industry, cultural institutions and the art world. Arguably, this is a strong possible positioning for the digital humanities.

We should acknowledge, however, that many, if not most, digital humanities initiatives already engage in a range of activities that can be classified as intersectional. An example would be fellowship programs allowing faculty to do work at the digital humanities center and different types of open seminars and workshops. Multiple affiliation is another example of such a strategy (cf. also the earlier discussion of area studies and the idea of “dual citizenship”). The underlying rationale is the importance of connecting the digital humanities center with other departments and disciplines, and creating long-term commitments to such exchanges. People with double affiliations can be involved in changing both worlds (i.e. both institutions), and individual people can help forge strong links. On a more particular level, it is important to think carefully about such strategies. Regardless of the extent of the openness of a digital humanities initiative, such strategies can play an important role. This is even more true if they are anchored in a conceptual framework.

An open meeting place and energetic trading zone does not necessarily make a sharp distinction between research, education and other activities. Indeed, it can be argued that incorporating undergraduate and graduate students as well as researchers, developers and others increases the potential of the trading zone considerably.

**Design Parameter: Care About Space**

Knowledge production, intellectual exchange and development work are spatially situated (cf. [Livingstone 2003, 179], [Burke 2000, 56], [Martin 2003, 183]), and arguably space is particularly important to the digital humanities given its often intermediate role, supposedly emergent state, collaborative work practices, and engagement with technology. These spaces may be mostly physical, mostly digital, or mixed. Physical institutional space is typically difficult to come by, and adequate control of the design of such spaces may not be given to the institution supposed to inhabit the space. Digital “space” is temptingly easier to come by, but no less challenging in terms of design, use, long-term costs and possible constraints and possibilities imposed by the space.

When planning new initiatives in the digital humanities, consideration should definitely be given to space, and for many enterprises grounded at one university, having a strong physical space can be advantageous. In other cases, regular institutional space or a strong digital space may be more optimal, and the main point of introducing space as a design parameter, is to stress the importance of actively considering space in the context of the digital humanities. In this article series, considerable attention has been given to the idea of having a lab or studio space [Svensson 2011]. This is obviously just one possible model, but one that would seem compatible with at least some varieties of the digital humanities (see [Earhart 2011] for a critical discussion). A studio space can bring different kinds of people and competencies together, host (or be) cyberinfrastructure, and help create energy, leverage and “buzz”. On a more symbolic and political level, such a space can represent and enact the initiative and associated values, become a showcase for the university, and attract visitors.
In the same way as mostly physical spaces can be seen as reflecting the ideational underpinnings of a digital humanities initiative, digital spaces or platforms can help facilitate the type of work seen as important to the initiative. Some such platforms would be more spatially oriented than others, such as virtual worlds, video-based team software or tools that create an experimental or interpretative space. In any case, while the design of digital platforms and spaces may not be brick and mortar, the associated costs and long-term commitments may be as costly and decisive in terms of establishing certain structures and constraints that will influence how work can be carried out. Again, premeditation and connection with the core values of the initiative are important, as well as engaging with standards, protocols and existing platforms. The fact that most spaces are mixed in one way or another emphasizes the importance of seeing spaces as part of an ecology, where many different components, affordances and considerations help create a sense of conceptual and connectional grounding.

**Design Parameter: Connect to the Heart of the Disciplines and Engage Broadly with the Digital**

The humanities engage with information technology and the digital in many different ways, and it has been suggested in this article series that we can distinguish between technology and the digital serving as a tool, object of analysis, expressive medium, exploratory laboratory and activist venue (see [Svensson 2009]). For a “big tent” digital humanities, it would seem that a broader engagement with the digital is advantageous as it increases the possible points of interaction between the humanities and the digital, and between the digital humanities and the humanities. It is, however, important that digital humanities initiatives and centers maintain their own status, integrity and mandate to facilitate work in this area, work with faculty from other departments, and help create momentum. Productive exchange and innovative work in intersectional domains are more likely to be successful if the competencies that engage in such domains work together from the very beginning and if there is a sense of equal worth.

Traditionally, humanities computing has built tools, provided methodological expertise, helped with advanced data management, facilitated project management, etc., for scholars in different humanities disciplines (some disciplines more than others). Such a model may also include fellowship programs that allow faculty from humanities departments to have dedicated time to work with a digitally inflected project (typically technology would serve as a tool in such projects). In terms of impact, it may be argued that such a model probably only reaches a portion of possible humanities scholars and that it does not necessarily connect to the heart of the disciplines – to what really matters to scholars in the disciplinary community. This is particularly true if tool making and use of technology are not deeply embedded in the research process (cf. [Drucker 2009a] and [Drucker 2009b]). The digital humanities arguably need to be about major research challenges, exciting tools, and engaging expression.

Although the modes of engagement listed above naturally overlap to some extent, there is a risk with a high degree of separation and specialization. The development of critical tools requires intellectual investment and preferably a sense of pushing on the analytical tradition of the involved disciplines. The study of the digital in a broad sense is likely to benefit from the use and development of advanced digital tools and from engagement with technology (see [Ross et al. 2009] for some early examples). It could furthermore be argued that most of the humanities need to consider digital knowledge production (broadly speaking, see [Fitzpatrick 2009]) and the expressive capabilities of digital (and other) media. All digital humanities initiatives will naturally not be exploratory laboratories and activist venues, but it arguably benefits the digital humanities and the humanities to be involved in the active rethinking of the humanities and the academy.

Looking at it from the point of view of the operations of a digital humanities center, a broad engagement with the digital presumably expands the palette of possible interactions, activities and projects. Moreover, it would seem that such a cross-sectional mix could facilitate a more dynamic and open trading zone. On the other hand, a broad approach becomes less focused and requires care in order to support different epistemic traditions robustly. The gain comes from the possibilities of collaboration and combinability, maximizing possible engagement, and the ability to take on complex research and development challenges convincingly.

Connecting to the heart of the disciplines involves relating to the core challenges and needs of those disciplines. This does not imply a pronounced service function (cf. [Nowviskie 2010a] and [Liu 2011]) or aligning with disciplinary agendas but rather to be engaged in an intellectual dialogue that sparks core interest among scholars from those disciplines. At the UVA Shape of Things Conference in 2010, Michael Keller of Stanford University brought up the issue of humanistic discourses:

**Ajprescott:** Keller: what are the new research questions? 
**That is fundamental question. We thought we would see new humanistic discourses. Are we? #uvashape** [Prescott 2010b]
It is suggested that a larger intellectual engagement and involvement in humanistic discourses is easier to achieve with a rich and multi-faceted engagement with the digital. Some disciplines are more likely to engage on the levels of tools whereas others are more likely to engage in relation to interpretative research issues. An expansive and collaborative digital humanities can engage richly across the board and clearly relate to some of the most interesting research and education going on in the disciplines.

As always, institutional factors and possible leverage vary and depend highly on the local context, but in most cases it would seem likely that a strong, deep and multiple-level connection to the humanities disciplines, and at least a few of the leading scholars there, will strengthen the digital humanities and associated initiatives. This is particularly true if the digital humanities also can maintain integrity and mandate in relation to its own operation and while working with the established departments and disciplines.

**Design Parameter: Engage with Technology**

As was noted earlier, engagement with technology is a prerequisite for digital humanities, but it can also be a point of tension between different varieties of digital humanities. It would seem advantageous in many cases, for instance, for the digital humanities not to restrict itself to relate to technology and the digital only as a distant object of study. For more cultural or critical studies approaches, it might be argued that there is value in engaging with technology more directly, and that this can be done without sacrificing analytical rigor. Furthermore, digital media can facilitate alternative modes of representation and expression (cf. [McPherson 2009]).

For more technically oriented varieties of digital humanities, engagement with technology is a more integral part of the operation. Here, critical perspectives on technology are important as well as a humanities based investment in scholarly infrastructure. Interestingly, the engagement of digital humanities is not necessarily reflected in the digital spaces associated with the field. As Terras points out, it is important that the digital humanities represents itself appropriately online given “what we do.” [Terras 2010] Similarly, it could be argued that many physical digital humanities spaces do not manifest the technological investment of the field or, for that matter, the alternative modes of knowledge production or innovation often associated with the digital humanities. This goes far beyond presenting a “surface,” even if the outward projection is not unimportant and is intrinsically linked to acknowledging the significance of the particulars of actual sites of knowledge production [Livingstone 2003] and of rich material engagement with various modes of “the digital”. For instance, the aesthetics of scholarly environments, whether digital, physical or mixed, is highly relevant to learning and research processes (cf. [Svensson 2011]). Furthermore, it could be argued that there is considerable value in making technology available to encourage experimentation and to stimulate innovative scholarly uses of a variety of digital technologies. Indeed, digitally supported manifestations would seem natural in relation to the digital humanities, and they also tend to attract collaborative partners from technology and engineering as well as art and design.

The rigor and deep knowledge associated with humanities computing could be expanded more widely across the landscape of the digital humanities. For instance, there would seem to be considerable potential in such knowledge and innovative tool building in approaches that primarily engage with the digital as a study object. This also means that the digital humanities must be able to align with the contemporary media and technology landscape, and integrate with existing software and hardware systems ranging from social media platforms to high performance computing setups. Such alignment and interest in shaping and experimenting with technology can be an important part of the meeting between humanities-based epistemic traditions and the development of meaningful tools and expressions.

On a fundamental level, one visionary possibility would be for the digital humanities to be at the forefront of technological development and appropriation in relation to deep disciplinary research challenges. The relation between research questions and technological innovation is not a simple one, and generally speaking, neither starting out solely from the research questions or solely from the technology side of things is tenable. There is a need for iterative and integrated processes, which influences and, to some extent, shapes both the research and the technological development. Such a process must allow for some risk taking and experimentation (we do not always know what specific technologies are good for, if anything), and must be adaptive (the research challenges may change as a result of availability or development of certain methods and technologies) and critically engaged.

**Design Parameter: Digital Humanities as an Arena for Innovation and Rethinking**

As we have seen, the digital humanities often has a reach across the humanities and tends to be different from regular
departments and centers in terms of institutional organization, mission, work and self perception. Arguably this position facilitates a platform for innovation in the humanities more generally and can turn the digital humanities into a laboratory or arena for such matters as alternative modes of knowledge production and learning, large-scale collaborative ventures to address substantial intersectional research challenges, and an unapologetic, respectful, visible, proactive and deeply reflective humanities. Indeed, the digital humanities can lead the way. Liu argues that “the digital humanities will need to show that it can also take a leadership role” and “[t]he obvious leadership role at present is service for the cause of the humanities.” [Liu 2011]

This is partly a visionary sentiment, of course, which should ideally be coupled with ground level work and pragmatic implementation. The main point is that the digital humanities can be positioned in such a way that it offers a space for rethinking, experimenting and developing the humanities, and indeed, the university or school. This is one possible position, and naturally not the only one that affords possibilities for innovation or first-rate digital humanities work.

Indeed, the humanities-wide reach and sense of being (or wishing to be) different is not universal for the field. Arguably there is a tendency to further institutionalization in the sense of digital humanities centers becoming departments and hence, presumably, more disciplinary and similar to traditional departments. There are important strategic reasons for such a development including the vulnerable situation of many center-like institutions (cf. [Svensson 2009]), how funding streams and faculty hires are operationalized, as well as how academic identity is created and sustained. There are also predecessors to such a development, as successful interdisciplinary or intersectional academic fields have a tendency over time to become institutionalized with their own disciplines, educational programs and a higher degree of self-reliance (e.g. Asian American Studies, women's studies and cognitive science). While this in many ways is a reasonable and productive development, there are also advantages to a liminal and non-departmental position. It may help create leverage, collaborative possibilities, a significant role and position within the humanities and for the university, be less of a threat to other departments, and increase the possibility to be involved in the rethinking and changing of both the humanities and the academy.

A Vision Statement

I will now end this article series with a vision statement placed within the visionary scope articulated above. This statement is not so much the culmination of the article series as a particular and personal endnote. It only seems appropriate that an article on envisioning the digital humanities ends with a vision.

The digital humanities is a part of the humanities not so much in the sense of being a distinct and separate discipline, but in the sense of interrelating deeply and multifariously with the humanities disciplines. The digital humanities should not only have integrity and independence, but they also need consistently to touch at the heart of the disciplines and engage with major contemporary research challenges and some of the most acknowledged humanities scholars. The digital humanities does not have to work with every scholar or discipline, and most initiatives are specific in one way or another, but the field as a whole should be open enough to invite both data heavy projects, encoding methodology and critical theory based analyses. We need to acknowledge that “big tent” digital humanities draws on multiple epistemic traditions and that finding common ground and language is not trivial. Furthermore, the rhetoric of an expansive digital humanities comes with certain responsibilities and cannot be exclusively mapped on individual traditions in a convincing way. At the same time, inclusion in the field of digital humanities must be based on self-identification and a willingness to engage, although considerable richness comes from continuously attracting scholars who may not initially relate to the digital or the digital humanities. While there is clear value to identifying a field of digital humanities, we need to accommodate a range of organizational relations. Double affiliation is a useful way of maintaining links both to a discipline and the digital humanities. The field, however, is not reliant on departments and disciplines to make “things happen”. For instance, a digital humanities center may have to create new faculty positions to support a significant area not of immediate interest to the relevant departments.

The digital humanities clearly has the power to stimulate visionary and transformative thinking, and it can be a site for innovation, reconfiguration and exploration. This power, which should be acknowledged and valued, comes from the broad and intersectional reach of the digital humanities, a sense of being situated at the periphery and fighting established structures, the non-disciplinary status of the field, and humanities-external interest and acknowledgement. The digital serves as a potent point of canalization for this transformative sentiment, and by proxy, the digital humanities can become a place where the digital, analogue and hybrid humanities can be discussed, negotiated and projected. Again, this will not take place everywhere, but is a significant property of the digital humanities as a project.

The digital humanities need to be materially and technologically grounded in order to facilitate the often intertwined practical, expressive and critical work associated with the field. We need to engage deeply and sensitively with digital media and
The digital humanities can serve as a laboratory, innovation agency, portal and collaborative initiator for the humanities, and as a respectful meeting place or trading zone for the humanities, technology and culture, extending across research, education and innovation. This meeting place would normally extend far outside the humanities proper and could include the humanities as well as other academic disciplines, industry and the art world. The digital humanities center (in whatever form) is not dead, nor probably an absolute requirement, but there is clear advantage to an independent role and to having a space. The lab or studio model is one of many but one that has clear advantages worth considering for new digital humanities initiatives. A well-designed and conceptually grounded space, whether mainly physical, digital or necessarily mixed, can help bring people together, instantiate technology, be clearly invitational, support collaborative and processual work practices, and allow ongoing, cross-sectional, and profound dialogue. A physical space can function as a focus of interest and as a showcase, and the digital humanities can be one of the two-three most frequent and popular spots for external high-level (and other level) guests to the university. This gives the added benefit of the provost or university president being informed about the current state of affairs in the digital humanities on a regular basis, and it challenges us to talk freshly and intensely about the future of the field, significant scholarly challenges, and some of the most exciting trajectories of the humanities.

Conclusion

As this article has shown, the digital humanities is intimately connected with different kinds of visionary and forward-looking discourses. These discourses can tell us a great deal about an expanding and shifting field, its considerable international variation, as well as tensions due to different epistemic traditions and sets of hopes. The digital humanities can serve an important function in providing a means to think about the state and future of the humanities, as well as the digital humanities more specifically. Such thinking need not be all-pervasive, overly utopian or ungrounded, but must be forward-looking and, arguably, "large".

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Notes

[1] Interestingly, the beginning of the entry was updated on October 31, 2010 to include a "sometimes": The digital humanities, sometimes also known as...". This demonstrates a sensitivity to some of the issues at play here. Accessed on March 22, 2010. http://en.wikipedia.org/w/index.php?title=Digital_humanities&oldid=372715619.

[2] The Wikipedia entry is linked to by the Alliance of Digital Humanities Organizations (AHDO) from the main ADHO entry webpage. A simple wiki dashboard analysis shows that many of the edits have been carried out by scholars from the humanities computing community. Accessed on July 10, 2010. http://digitalhumanities.org/.

[3] Incidentally, two of the three Yale conference chairs listed are women, whereas two of ten "founding fathers" listed by Unsworth are women.

[4] In commenting on his own statement, Ramsay ([Ramsay 2011b]) modulates his original statement (in particular using “building” instead of “coding”) and provides some softening, but in principle he does not back down in terms of the epistemic basis to his argument. An intricate question here is what is included in “building” (see also Alan Liu’s comment on Ramsay’s blog entry, [Ramsay 2011b]), but Ramsay’s notion of building seems anchored in the kind of building found in humanities computing.

[5] The following discussion is primarily based on the manuscript Terras usefully posted on her blog after the talk as well as on the streamed version of
the talk (made available by the DH 2010 conference). Citations are taken from the manuscript. All citations have been checked against the streamed version, and while there is expectedly no exact word-by-word correspondence, there is at least rough correspondence in terms of meaning. In two cases, the citations given do not have any direct linguistic correspondence in the streamed version. The analysis, however, is based on the (widely disseminated) written manuscript, and it is argued that there is enough relation to the actual speech to warrant the more general and contextual conclusions drawn from the material. Additionally, some of the concurrent and online discussion is considered in the analysis.

[6] 7438 words in total including the title.


[8] Respectively: [Rodgers 2010], [Kirschenbaum 2008], [White 2011], “Post-Digital Architectures — Living Machines” (Timothy Lenoir, 2010 course, Duke University), and [Parks 2011].

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