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Surfing the web, algorithmic criticism and Digital Humanities

Diane Favro, Kathleen Komar, Todd Presner, Willeke Wendrich

The participants of this interview are colleagues at the Humanities at UCLA and members of its Digital Humanities group. They apply the tools and methods of Digital Humanities in their research and teaching, write about Digital Humanities or study subjects of Digital Media Studies such as literature in and with new media. Diane Favro is professor at the Architecture and Urban Design department and Director of the UCLA Experiential Technologies Center; Kathleen Komar is professor at the Department of Comparative Literature, former President of the American Comparative Literature Association and Acting Co-Director of the Office of Instructional Development at UCLA; Todd Presner is Professor of Germanic Languages, Comparative Literature, and Jewish Studies and Chair of the Digital Humanities Program; Willeke Wendrich is Professor of Egyptian Archaeology and Digital Humanities, Editorial Director of the Cotsen Institute

of Archaeology Press and director of the Center for Digital Humanities at UCLA.

The interviewees address the fear of ‘derailment’ on the digital highway, the ‘lack of deep thinking’ among their students and the worry of humanists (and especially the ‘old folks’) to be devalued as thinkers by technological advances. They speak about the pluriformism of the Digital Humanities movement, about visualized thinking and collaborative theorization, about the connection between cultural criticism and Digital Humanities, they share their mixed experiences with the Digital Humanities program at UCLA, explain why most innovative work is done by tenured faculty and muse about the ideal representative of Digital Humanities.

Prelude

Roberto Simanowski: What is your favored neologism of digital media culture and why?

Diane Favro: *Hackathon*: beyond the obvious associations with marathon [the long race] and telethon [crowd sourcing], etc., such events capture key characteristics of digital humanities work: collaborative, adventurous, nimble, and productive.

Willeke Wendrich: Twitter feed. It is supposed to mean access to the output of Twitter, but it evokes images of sparrows focusing on the seeds directly in front of their beaks, and to me symbolizes how many tweeters react instantly on other tweets, rather than the world at large.

Kathleen Komar: I am taken with the phrases “digital immigrant” and “digital native” because they make so painfully clear the difference between my use and understanding of technology and that of my students. Students are so comfortable multitasking and web surfing. I still process information vertically while they do it horizontally.

RS: If you could go back in history of new media and digital culture in order to prevent something from happening or somebody from doing something, what or who would it be?

WW: Google Earth for updating their API without allowing backward compatibility.

KK: I would stop pop-ups and ads. They succeed in distracting me much too often!

RS: If you were a minister of education, what would you do about media literacy?

DF: Literacy is essential, but involves more than texts. I would advocate students become adept at critically reading a range of information-conveying sources including words/languages, spaces, colors, movement, and people/cultures, and that they become adept at using the appropriate tools to do so.

WW: Involve students in an exciting project to produce a high quality work and see their name in “print”/on the screen while having learned everything from metadata, to mark up and copy rights with preferably a bit of programming as well.

KK: Make sure that technology is available to *every* child. The rest they will figure out for themselves. And institute a course on web ethics.

Todd Presner: I consider digital literacy to be a grand challenge of the 21st century. This involves understanding, among other things, how information is structured, presented, stored, and accessed; how computational processes create and organize data; how interfaces structure user experiences; how platforms embody certain world-views and encode culture more generally. Digital literacy is both critical and creative.

Digital Media

RS: With the critical turn in Digital Media Studies in the last 10 years, the notion of the Internet as an ‘identity workshop,’ as Sherry Turkle described it, or the new public sphere for free political discourse has widely been abandoned (cf. Columbia’s

Cultural Logic of Computation, Morosov's Net Dellusion, Turkle's Alone Together, Carr's The Shallows, Lovink's Networks Without a Cause, Pariser's Filter Bubble, Vaidhyathan's Googlization of Everything etc.). Meanwhile there is also worry and warning outside the academic field regarding the spoiling of the Internet by commerce and surveillance, i.e. Tim Berners-Lee's *The Web We Want*-Campaign, Edward Snowden's appeal to rescue the Internet, to name only two popular figures in the Anglo-American discourse. How do you see the development of the Internet over the last 20 years? Which worries and warnings do you share, which do you find ill-founded?

DF: My greatest fear centers on derailment. We were given the keys to the car with very little driver's education. Able to go down too many different roads on the Internet at any given moment, users easily forget their targeted original destination. While undirected touring can be wonderful, it has overwhelmed other types of investigations and minimized deep, slow thinking. Without critical, serious training on how to use the Internet we are weakening our criticality. The fact that users are insulted by the notion of needing Internet training is indicative of the problem. The un-ending attempt to be technologically current (Do I have the fastest connection? Last upgrade? Newest browser? Best smart phone/computer with all the latest bells and whistles?) further derails us, consuming time and redirecting efforts to the tools rather than the substance of inquiry.

WW: The internet has, on the one hand, democratized and become available to many, which is a positive development. On the other hand, it has a strong focus on consuming, rather than producing, and an expectation that the information found online can be trusted.

KK: It might be the case that the early days of any field are filled with heady idealism. Early on we may have felt that the internet would make us free and allow us to communicate globally and instantly. Our assumption (on the optimistic side) was that that would be liberating. In some ways it has been. The function of social media in fueling revolutionary movements is a case

in point. But we have also been contained in many ways by our technology. I see my students much less in a face-to-face setting now than I did before the digital revolution. They email and want instant and brief responses to very complex questions. I fear that they think too broadly and quickly and do not do the work of thinking deeply or in any sustained way. I also fear that we will become so digitalized that our “personal” existence will become public data to be consumed and used but not to get to understand us as individuals. Distance reading might become an analogy for distance relationships. No need to read the primary text—no need to know the actual person at all.

TP: Like all networking technologies that preceded the internet (from postal systems to railways and telephones), we see a persistent dialectic: technology enables certain things and prevents other things; technology is hailed as salvific and simultaneously apocalyptic; it can democratize and also be used to advance authoritarianism; it can be used to facilitate participation, and it can be used to control and monitor populations. No big surprise here! Technology always has a dialectical underbelly, as these authors have identified, and it can also be used in surprising, unanticipated, and creative ways that have the potential to advance democratic values. We need to move beyond the either/or binary, and consider both the risks and possibilities embodied in any technology. We must not give up on the *weakly* utopian possibilities (to rework Walter Benjamin’s phrase) since without them, it becomes very hard to imagine alternatives, build better worlds, and foster ethical communities.

RS: According to Maryanne Wolf, Director of the Center for Reading and Language Research and Professor of Child Development at Tufts University, Somerville, Massachusetts, and her doctoral candidate Mirit Barzillai, ‘an early immersion in reading that is largely online tends to reward certain cognitive skills, such as multitasking, and habituate the learner to immediate information gathering and quick attention shifts, rather than to deep reflection and original thought.’ (http://204.200.153.100/ebeiling/Deep_Reading.pdf) The shift from deep attention to

hyper attention and the results of multitasking and power browsing have been announced and bemoaned by many intellectuals, and I hear similar comments here. Nicholas Carr made the loss of deep thinking (or: derailment) popular in his 2011 book *The Shallows - What the Internet is Doing to Our Brains*. Bernard Stiegler speaks of a threat to social and cultural development caused by the destruction of young people's ability to develop deep and critical attention to the world around them. Your work as an academic teacher is closely connected to the ability of deep reading. Kathleen already voiced her concern that the message of digital media - instant and brief responses to complex questions - does not foster deep thinking. To press you all on this issue: Do you share the worries listed above? How do you experience the relationship to reading in the younger generation of students?

DF: Students today do seem to have differently-wired brains than those of the previous generation. Rapid assimilation and highly developed curiosity are positive results of "distracted learning;" lack of sustained inquiry and deep thinking are among the negative. "Free" and easy access is resulting in a rise in college scholarship as well as plagiarism. Particularly of concern is the shift away from sustained writing and reading. Students moan loudly if asked to do a 10-page paper, while in the past the moan-threshold was at 20 pages. Deep reading is increasingly viewed as an educational necessity, not something done outside the classroom, for pleasure or personal learning. In response to this changing reality I now develop projects (rather than assignments) that are more oriented toward hypothesis testing, object creation (digital model, thick map, etc.) involving multi-media, interdisciplinarity, and peer learning through collaboration. Students respond well to the competition presented by working in groups, in contrast to the results they produce from isolated researching on the Internet.

WW: What I have found is that students not only have a shorter concentration span, but also appreciate audio-visual information over reading. They would rather have something explained to

them in short videos than by reading an article (which is something I cannot identify with at all. I'm usually bored to irritation with video explanations because they are slow and not very information dense). I do, however, not tend to worry about such changes, although I will not cater to them. There is not much point to try to hold back societal developments. My hope is that we will end up with a pluriformity of media, although with the increased commercialization of the internet that might not actually happen. Now THAT is a true cause for worry.

KK: Yes, I share this concern. My students are great at surfing the web to find the information they seek; but when confronted with a poem by Emily Dickinson or Wallace Stevens, they are confused by the need to read deeply and to consider each word in its poetic context. They are less attuned to unreliable narrators in novels as well. I think that the need to mull over a word or phrase—and to be able to argue a particular meaning among other possible meanings is increasingly difficult for them. They are also less aware of the history of literature or culture that informs a particular work of art or literature. They are not any less bright than earlier students; they have been conditioned to think differently. That gives them some advantages in this new world—but I would hate to see them lose other capacities of thought.

TP: I think the era of deep attention is largely a fantasy that has been projected backwards to romanticize a world that never existed. We've conjured up an image of a past world in which people could concentrate on a single task (like reading a Tolstoy novel from start to finish) in order to elevate certain cultural ideals, behaviors, and artifacts. But this binary makes little sense: first of all, film theorists in the early 20th century complained about film causing a "cult of distraction" among the masses and before that, critics complained about the genre of the novel being subversive (largely because it helped bring literacy to a much wider public). In both cases, prior media revolutions elicited the same critiques. Hyper-attention has probably always been around, just like deep attention still persists today: If

you've ever watched teenagers play videogames, you would note their rapt attention, complex strategy making, and formidable attention to detail.

RS: There is a series of neologisms around of the basic elements of digital media: algorithmic criticism, algorithmic design, ethics of the algorithm, algorithmic analytics, algorithmic regulation. This abundance of new technical terms around the algorithm evidences its central role in coding and computing. The implications this role will have on culture and society in the age of digitization is still to be seen. Some welcome the algorithm as a tool of knowledge production by big data mining and distant reading. Others, however, see the algorithm as Pandora's box since it fosters a way of thinking and acting based on stiff if-then-rationales and on statistics and it outsources human agency. How do you look at algorithms?

DF: I personally like the rigor imposed by rule-based (algorithmic) thinking, in part because the approach parallels my own field of study. The meaning of the term, however, has become equated with "computing." As a result, I tend to use other descriptors.

WW: They certainly have their uses, and we should not do away with them. Big data analysis, however, is of a completely different use than detailed qualitative analysis or thick descriptions of phenomena. Algorithms actually are not really stiff if-then-rationales. Mostly what happens in big data analysis is the description of trends, without any attempt to explain these. They are mostly descriptive, rather than analytical or interpretational.

KK: If we see algorithms as a formal set of instructions to carry out a specific function, then I like the clarity of the operation. This might be couched in numbers or words (e.g., if you see an oncoming plane, veer right). So it isn't the formal process that is a problem for me; it is the assumption that this is always numerical and that it can provide ultimate answers to complex questions. Complexity and ambiguity are not always bad; they induce us to imagine other answers. I would hate to see this human

capacity devalued in favor of illusory certainty. A single answer is not always the best way to go.

TP: I've used the phrase "the ethics of the algorithm" in a recent study of the Shoah Foundation's Visual History Archive, a digital archive of 52,000+ Holocaust testimonies, to describe the ways in which computational processing of data is hardly a neutral enterprise and, in fact, requires an attention to ethical issues at every stage. Other authors, like Stephen Ramsay, have begun developing the critical field of "algorithmic criticism," examining not only the ways in which code needs to be analyzed and interpreted for its assumptions and structures, but also how code can be used to engage in cultural critique. The code and database might, for example, be reordered, disassembled, and reassembled according to the constraints and possibilities of computational logic. This is the essence of algorithmic criticism.

RS: Let me just pick the two key phrases in Todd's answer to readdress the problems I see when it comes to the advance of the algorithm. The "ethics of the algorithm" can also be seen in terms of the famous article by computer scientist Robert Kowalski in 1979 *Algorithm = Logic + Control*. In my interview with David Golumbia, the author of *The Cultural Logic of Computation*, he differentiates between two philosophical approaches to life: Leibniz to whom everything in the mind and in society can be reduced to mathematical formulae and logical syllogisms and Voltaire whose "critical rationalism" includes phenomena like irony and skepticism. In light of increasing algorithmic reading and regulation of society I wonder how much room the future will offer Voltaire if the future - including the Internet of things - is densely populated by computers as Leibniz' 'children'. My other question aims at Ramsay's concept of "algorithmic criticism." I absolutely support Ramsay in that computer-assisted text analysis should not be employed in the service of a heightened critical objectivity but deepened subjectivity. However, when Ramsey looks forward to the day "algorithmic criticism" is, as a practice, so firmly established that the term itself may seem as odd as "library based criticism". I am concerned about the insensibility

towards the underlying media. While the library offers a specific collection of texts to a reader, the algorithm offers its reading of a (specific collection of) text(s) to the reader. The algorithm as a medium does not equal the library, nor does it substitute it, but complements it and establishes (by stepping between the given text and the reader) a very different pre-condition of criticism.

TP: I don't think we are in disagreement here. I would love to imagine and advance a kind of algorithmic criticism in which Voltaire's irony and skepticism unfolds in profound and even unpredictable ways, but I certainly recognize the lure and the dangers of the Leibnitz model. Again, we have both existing simultaneously, pulling us between logic and control, on the one hand, and artful subversion, on the other. The notion of an ethics of the algorithm is an attempt to inject ethical thought and humanistic values into computational processes at all levels, from the broader information architectures to the design of structured data and databases to the processes of capturing, analyzing, and interpreting that data.

Digital Humanities

RS: One neologism of the development of digital media is Digital Humanities, which meanwhile has been become the most important keyword in the Humanities. The debate on DH has itself coined a series of neologisms such as "fluid textuality," "ubiquitous scholarship," "animated archive," and "distributed knowledge production". What do those terms mean and what do they mean to you?

DF: I don't use the first terms, but would equate "ubiquitous scholarship" with pervasive access to scholarship that in turn promotes learning at many levels, including by citizen learners outside academia. I participate in a number of "distributed knowledge production" projects in which scholars in distant locations all work together in a truly interactive way. Such collaboration is dynamic and stimulating, as well as expedient.

WW: These terms are keyed by a specific section of DH practitioners. The interesting thing about DH is that it is very pluriform, with multiple disciplines working together, critiquing and using DH methods and tools. Often these critiques bridge the method and theory of DH as well as the practitioner's other scholarly backgrounds. In the case of archaeology and DH there is, for instance, a strong emphasis on theories of chronology and spatiality, critiquing how space and time are represented. Issues are, for instance, that chronologies differ depending on the geographical and archaeological context, a situation which does not lend itself easily to representation in standard western calendar structures.

KK: "Ubiquitous scholarship" and "distributed knowledge production" indicate a movement toward more collaborative work and towards more openly sharing research findings. I think these are good things in the Humanities—where we have been in the habit of going off to our own cubby holes and doing our own individual work. "Fluid textuality" implies a different area to me—one that involves electronic literature (on which I am currently doing research). It indicates the capacity of creating texts that are not fixed artifacts (like a book) but rather can be recombined or are interactive or may be authored by several individuals. So still collaboration of some kind. But also a fleeting characteristic. Texts can disappear or change rapidly in an electronic environment (websites or posts, for example).

TP: Together with my co-authors (Anne Burdick, Johanna Drucker, Peter Lunenfeld, and Jeffrey Schnapp), we introduced each of those terms in *Digital Humanities*. They are not terms that people necessarily use in everyday discourse, even about the Digital Humanities, but are meant to conceptualize certain shifts in cultural production and humanistic inquiry enabled by the digital. In brief: fluid textuality refers to the malleable, fungible, and extensible environment for digital artifacts; animated archives are just that: archives that are no longer a bunch of "dead" and forgotten objects but ones that have been given a new lease on life in digital worlds, often through strategic

curatorship and blended environments; distributed knowledge production refers to the world we work in, where collaborative research is prized and knowledge is spread across many locales, including academic and non-academic ones, not to mention slices of the broader public; and finally, ubiquitous scholarship refers to a future to come, in which the pervasive infrastructure of computing has also transformed the scholarly enterprise in a way that greatly enlarges its domain, reach, and impact.

RS: Besides new words, another contribution of this 2012 book to the discussion in the humanities is a different perspective on its present and future. Against the ‘default position that the humanities are in “crisis”,’ the authors portray the computational turn in Humanities as a chance of bringing the ‘values, representational and interpretative practices, meaning-making strategies, complexities, and ambiguities of being human into every realm of experience and knowledge of the world.’ What would be an example for this extension of the values and strategies of the Humanities into other fields? How, on the other hand, do you see the ‘dark side of the Digital Humanities’ and ‘where is cultural criticism in the Digital Humanities’ (to allude to two popular and rather critical debates on DH at the MLA-convention 2011 and 2013)?

DF: At UCLA, the new Urban Humanities Initiative aims to integrate the criticality and values of humanists into the design and theorization of architecture and urban design and planning. At the same time, the UHI provokes humanists to experiment with the approaches of architects and urban designers, including hypothesis testing, visualized and spatial thinking, and collaborative theorization. In identifying a “dark side” for DH, we often forget that all fields have their own negative aspects since those of traditional fields have become masked by familiarity. Humans synthesize a myriad of actions, emphases, contradictions, and interpretive practices, yet these are often isolated in academia. By embracing ambiguity, simultaneity, fuzzy thinking, and interdisciplinary collaboration, DH is a positive provocation

to the field compartmentalization that has increasingly hobbled academics pursuing new knowledge.

WW: Perhaps the most important contribution of DH is that it brings the understanding to computational approaches that data are not objective, often ambiguous, and context dependent. These are insights from the humanities that are seldom considered, let alone valued in the sciences, including computer science. I, therefore, don't think that there is a lack of cultural criticism in DH, although there are undoubtedly practitioners who use DH methods and tools uncritically (but then they would also write uncritical articles or books). In other words culture criticism, critical thinking, and social awareness are not inherently part of, nor inherently lacking in DH.

KK: The "humanities" began as those areas of study in which we examine achievements designed and executed by human beings—as opposed to natural phenomena. It is a study of human culture—which, at earlier moments in our history, would have included mathematics and engineering. So I see no inherent need to separate (or protect) the Humanities from other humanly generated systems of meaning such as mathematics. I think we should be chipping away at these separations rather than buttressing them. I believe it profits scientists to see their own work as a kind of narrative. However, I do not believe we should cede the arena of important intellectual achievements to the sciences—as many of our campuses have done recently. The speculative and critical thinking skills remain crucial in our society. Students (and colleagues) need to be able to examine cultural and political claims critically. This is the point of my undergraduate course on Kafka. Literature makes us think and rethink cultural currencies.

TP: The issue for me concerns the importance of the values, perspectives, methods, and content of the humanities at a time in which the humanities are under fire for their supposed irrelevance or secondary status. The humanities provides historical and comparative perspectives; it shows how knowledge is always "situated" in specific cultural, social, and economic contexts; it

provides an ethical orientation and methods that seek to comprehend – not overcome – ambiguity, difference, uncertainty, and fuzziness. As I've written elsewhere, the connection between cultural criticism (*Kulturkritik*) and DH is crucial in this respect.

RS: I assume it is easy to agree that *all* fields have their “dark side” and that, though there is no shortage of cultural criticism in DH, DH can also be practiced uncritically. It is also absolutely understandable how DH can and should be critical regarding the ‘givenness’ of data and the structure of knowledge production and representation. Todd’s discussion on DH as a kind of heir of cultural criticism and Critical Theory illustrates very well how “cultural-critical archive projects and platforms” undermine and overcome what Foucault defined as rules of exclusion by means of “citizen-scholars” and “participation without condition”. The aim of such “historical documentation” or “database documentaries” seems to be the improvement of knowledge rather than its subversion. From a certain philosophical point of view, however, it is the subversion of knowledge that renders most the “ambiguities of being human”. An example for this perspective is the German philosopher Odo Marquard who, in a 1986 essay on the inevitability of the Humanities (“Über die Unvermeidlichkeit der Geisteswissenschaften”), considers the function of Humanities in society to create a rhetoric of resistance not (only or first of all) towards institutions but (also and moreover) to signification and Truth. To Marquard the characteristic – and mission – of the Humanities is to irritate the business of understanding, to counterbalance the notion of reliable, objective knowledge in the natural sciences. The political importance of such deconstructive work becomes clear, as Marquard holds, with respect to confessional civil wars, which he terms ‘hermeneutic civil wars’: People killed each other over the right interpretation of a book. Such political view of the relationship of the Humanities to interpretation and knowledge may be surprising and foreign. However, it is mirrored by others if for example the Italian philosopher Gianni Vattimo, in his 1997 book *Beyond Interpretation: The Meaning of Hermeneutics for Philosophy*, speaks of a ‘nihilistic vocation

of hermeneutics' and welcomes it as 'the dissolution of fundamentalism of every kind.' Here the aim of interpretation is not the better, more complete, less manipulated understanding of reality but rather the understanding that the comprehension of reality is inevitably grounded in difference and irreconcilability. The vocation of DH may not be to present the Truth. But it also seems to be far from the nihilistic epistemology of postmodern perspectives.

Digital Literacy

RS: It is obvious that the humanities scholar of the future needs skills that exceed the traditional requests. Computational skills and statistical methods come to mind, as well as new ways of undertaking research and presenting the results. How does the ideal representative of Digital Humanities look like? What are the main obstacles you see in this regard?

DF: I would argue that there is no "ideal representative" of DH, as it is by nature interdisciplinary in approaches and practitioners. I believe that we are in a transitional phase of evolution in which new tools are stimulating dynamic methodologies that will gradually become the mainstream. Twenty years ago we had a separate academic program in my department called Architectural Computing; today computing is so pervasive in all aspects of teaching and research that program has been eliminated. I would imagine that likewise in the future the majority of humanistic inquiries will deploy the tools, theories, collaborative strategies, and interpretive practices of today's DHers and we will move on to other provocations.

WW: The ideal future humanities scholar will not necessarily need computational skills or a fluency in statistical methods. The training preparation and set of skills really depend on her particular research interest. Knowledge of relevant languages and disciplinary theories and methods will remain of great importance. Some of those languages could be, but don't necessarily have to be, computer languages. More important is the will and talent to work in interdisciplinary teams, take time and have the openness

of mind to familiarize oneself in the background and methods of other team members, and have an appreciation of all team contributions. Developments are following each other in rapid order and rather than everybody in the academic organization trying to keep up with everything, we will have to divide tasks and play on our own and each other's strengths. Having said that, in general it works best if humanities scholars do try to familiarize themselves with a core suite of tools and programs, so that they are at least intelligent conversation partners. Similarly, the best designers and programmers have at least some understanding of what scholarly work is concerned with: the main questions, approaches and critiques.

KK: The main obstacle I see is fear. Humanists (myself included) fear being devalued as thinkers by the technological advances that seem to leave us behind. But every new app or piece of technology grows out of a narrative that can imagine a new way of doing things. Even pop culture such as science fiction and Star Trek have contributed to our technological developments. Many of us "old folks" fear that we cannot attain the necessary computational skills this late in our careers—and perhaps this is true. But the future generations may not see any problem. They are techno-savvy and unafraid of the challenges. My undergrads are excited about using computers to do their literary research. They are the future. But they still need the understanding of other cultures and languages and the critical-thinking skills to explore research outside of their immediate contexts. Working in collaborative teams (as many of the sciences have done for some time) is probably a strong need for future scholars.

RS: UCLA offers a graduate certificate in Digital Humanities Program which, as it reads at the website, 'prepares students to work in this new environment by providing them with knowledge about the tools, methods, and theoretical issues central to the emerging field and enabling them to ask specific research questions that harness new technologies.' What are the details of this program? What kinds of students enroll? What are the (administrative) obstacles you encounter?

TP: The graduate students come from a multiplicity of backgrounds across the humanities, social sciences, and arts, ranging from fields such as history, English and foreign literatures, comparative literature, art history, information studies, architecture, urban planning, archaeology, design media arts, and more. They are interested in how digital tools, methods, and technologies are transforming knowledge investigation, knowledge making, and knowledge dissemination in the 21st century as well as the ways in which their own fields can be drivers of these transformations. The DH certificate functions like a “minor” for graduate students and requires five courses, including an introductory seminar on DH and a capstone research experience in DH. The latter embeds graduate students in faculty-led team projects, often drawing on library and technical staff, undergraduates and other faculty members. Graduate students also produce a web portfolio of their research and present it publicly at the end of the program. More details about the program can be found online at: <http://digitalhumanities.ucla.edu>

WW: The students enroll in a core class, which has a focus on the theoretical aspects of DH, illustrated by looking at and analyzing existing projects. Practical work is an integrated part of the certificate, learning particular tools and basic programming, but with a focus on those approaches that might be of direct use to the type of research that they are doing. This can be database programming, three dimensional Virtual Reality reconstruction of ancient buildings, Geographic Information Systems to analyze spatial data, text analysis, gaming, statistical analysis, or big data. Rarely do students specialize in more than one or two of these large fields of interest. Students who enroll usually already have a strong interest in computer based research and they typically choose to do the certificate because they want to learn more in order to facilitate their own research, but also to give themselves an edge when applying for jobs. There don't seem to be major administrative hurdles to initiate and teach the program. It remains to be seen how well-accepted PhD theses will be that have a non-traditional structure or are strongly

collaborative. In general advisors, even those who are DH proponents, will advise their students to err on the side of the traditional. The same is true for Assistant Professors who have a great interest in DH, but still feel they should produce a book with a respected publisher to safeguard tenure. Therefore for the coming decade or so, at least until DH work is more widely accepted by Academia, most innovative work is done by tenured faculty who can afford to take risks.

DF: The UCLA administration supports inter- or trans-disciplinarity, especially inquiries which have the potential to be transformative academically and in the world at large (this is specifically the aim of our new Urban Humanities Initiative). However, the barriers to working across fields, departments, and divisions within a rule-heavy, tradition-bound state institution remain significant. In addition to the administrative challenges presented (In what department does the program reside? Who pays for what? How can other divisions get “credit” for something named “Humanities?”), are the practical needs for digital access, storage, archiving, and space. The UCLA administration involves DH faculty and staff in committees dealing with digital infrastructural needs, but actual realization remains painfully slow. On the bright side, the UCLA library is a major partner in DH, providing expertise as well as space.