DHSI

DIGITAL HUMANITIES SUMMER INSTITUTE

DH for Chairs and Deans

Harold Short, John Unsworth,
Bethany Nowviskie, and Ray Siemens

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ETCL
ELECTRONIC TEXTUAL CULTURES LAB

Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada

Welcome to DHSI 2023!

Thank you for joining the DHSI community!

In this coursepack, you will find essential workshop materials prefaced by some useful general information about DHSI 2023.

Given our community's focus on things computational, it will be a surprise to no one that we might expect additional information and materials online for some of the workshops—which will be made available to you where applicable—or that the most current version of all DHSI-related information may be found on our website at dhsi.org. Do check in there first if you need any information that's not in this coursepack.

Please also note that materials in DHSI's online workshop folders could be updated at any point. We recommend checking back on any DHSI online workshop folder(s) that have been shared with you in case additional materials are added as DHSI approaches and takes place.

And please don't hesitate to be in touch with us at **institut@uvic.ca** or via Twitter at **@AlyssaA_DHSI** or **@DHInstitute** if we can be of any help.

We hope you enjoy your time with us!

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Statement of Ethics & Inclusion

Please review the DHSI Statement of Ethics & Inclusion available here: **https://dhsi.org/statement-of-ethics-inclusion/**

DHSI is dedicated to offering a safe, respectful, friendly, and collegial environment for the benefit of everyone who attends and for the advancement of the interests that bring us together. There is no place at DHSI for harassment or intimidation of any kind.

By registering for DHSI, you have agreed to comply with these commitments.

Virtual Sessions

Your registration in DHSI 2023 also includes access to the virtual **institute lecture** sessions. Access details for these talks will be shared as DHSI approaches.

Due to the high volume of attendees, please ensure your DHSI registration name or DHSI preferred name and your Zoom name match so that we know to let you into the virtual sessions.

DHSI Materials

DHSI materials (ex. videos, documents, etc.) are intended for registrant use only. By registering, you have agreed that you will not circulate any DHSI content. If someone asks you for the materials, please invite them to complete the registration form to request access or contact us at **institut@uvic.ca**.

Auditor and participant registration

If you registered to **audit** any workshops, note that auditor involvement is intended to be fully self-directed without active participation in the workshop. The auditor option offers more flexibility regarding pace and time with the workshop content. Your registration as an auditor will include access to some asynchronous workshop materials only and does not include access to live workshop sessions and/or individual/group instruction or consultation. Please direct any questions about DHSI workshop auditing to **institut@uvic.ca**.

If you registered as a **participant** in any workshops, your registration includes access to asynchronous content + active participation in live workshop session(s). The workshop instructor(s) will contact you about the date(s), time(s), and platform(s) of the live workshop session(s).

If you are unsure whether you registered as an auditor or participant, please check your registration confirmation email. Further questions can be directed to **institut@uvic.ca**.

Schedule

The at-a-glance schedule of DHSI 2023 courses, workshops, institute lectures and aligned conferences & events can be found here: **https://dhsi.org/timetable/**

All times are listed in North American **Pacific Time Zone**.

For those who registered as participants in any workshops, live sessions for online workshops are not currently listed on the above-referenced schedule. **Instructors will be in touch with registered participants directly about the exact date(s) and time(s) of their live workshop session(s).**

Acknowledgements

We would like to thank our partners and sponsors (including the Social Sciences and Humanities Research Council), workshop instructors, aligned conference & event organizers, institute lecturers, local facilitators, and beyond for making this possible.

Further information

General DHSI 2023 information: **https://dhsi.org/program/**

Full course listings (in-person): **https://dhsi.org/on-campus-courses/**

Full workshop listings (online): **https://dhsi.org/online-workshops/**

Aligned conferences & events (in-person): **https://dhsi.org/on-campus-aligned-conferences-events/**

Aligned conferences & events (online): **https://dhsi.org/online-aligned-conferences-events/**

Institute lectures: **https://dhsi.org/institute-lectures/**

Frequently asked questions: **https://dhsi.org/faq/**

Any questions not addressed in the above pages? Please email us at **institut@uvic.ca**!

Digital Humanities for Department Chairs and Deans

John Unsworth, Harold Short, and Ray Siemens, with Dene Grigar and Angel David Nieves

Overview (locations as per DHSI schedule, http://www.dhsi.org/schedule.php)

- Sunday 2 June 2018, 9.00 am – 4.00 pm
    - Session 1: Defining Digital Humanities
    - Session 2: Organizing Digital Humanities
    - Session 3: Engaging in Digital Humanities
- Monday 3 June, 2.00-4.00
    - 2.00-2.30: Touching base on audited courses
    - 2.30-3.15: Discussion of selected workshop topic
    - 3.15-4.00: Speaker: Angel David Nieves (San Diego State U), on practicing and building DH as a faculty member
- Tuesday 4 June, 2.00-4.00
    - 2.00-2.30: Touching base on audited courses
    - 2.30-3.15: Discussion of selected workshop topic
    - 3.15-4.00: Speaker: Dene Grigar (Washington State, Vancouver), on practicing and building DH as a faculty member
- Wednesday 5 June, 2.00-4.00
    - 2.00-2.30: Touching base on audited courses
    - 2.30-3.15: Discussion of selected workshop topic
    - 3.15-4.00: Case Study
- Thursday 6 June, 2.00-4.00
    - 2.00-2.30: Touching base on audited courses
    - 2.30-3.15: Discussion of selected workshop topic
    - 3.15-4.00: Case Study
- Otherwise: Observing DHSI classes as non-participatory auditors.
    - To help plan auditing visits, course paks (which include outlines, and related materials) can be found at http://www.dhsi.org/content/2019Curriculum/ by May.

Description

- Intended for university administrators who seek an understanding of the Digital Humanities that is both broad and deep, this offering establishes a cohort that [1] meets as a group for two dedicated sessions before the first day of DHSI (on the Sunday beforehand) and one dedicated session each afternoon 2.00-4.00 pm Monday to Thursday to survey and discuss pragmatic DH basics and chief administrative issues related to supporting DH and those who practice it at their institution, [2] allows those enrolled to audit (as non-participatory observers, able to go from class to class) any and all of the DHSI courses, and [3] individually engages in consultation and targeted discussion with the instructors, who are the first three chairs of the international Alliance of Digital

Humanities Organisations (ADHO), and others in the group outside of course time during the institute.

About the Instructors

· **John Unsworth** (U Virginia) is Dean of Libraries, University Librarian, and Professor of English. Before coming to Virginia, he was Vice-Provost, University Librarian, and Chief Information Officer at Brandeis University, where he also is a Professor of English; earlier, Dean of the Graduate School of Library and Information Science (GSLIS) at the University of Illinois, Urbana-Champaign from 2003 to 2012. In addition to being a Professor in GSLIS, at Illinois he also held appointments in the department of English and on the Library faculty. At Illinois he also served as Director of the Illinois Informatics Institute, from 2008 to 2011. From 1993-2003, he served as the first Director of the Institute for Advanced Technology in the Humanities, and as a faculty member in the English Department, at the University of Virginia. In 1990, as a member of the English faculty at NCSU, he co-founded the first peer-reviewed electronic journal in the humanities, Postmodern Culture (now published by Johns Hopkins University Press). He also organized, incorporated, and chaired the Text Encoding Initiative Consortium, for which he now serves as treasurer. He co-chaired the Modern Language Association's Committee on Scholarly Editions, and served as President of the Association for Computers and the Humanities and later as chair of the steering committee for the Alliance of Digital Humanities Organizations. With Ray Siemens and Susan Schreibman, he co-edited the Blackwell Companion to Digital Humanities and its second edition, and he chaired the national commission that produced Our Cultural Commonwealth, the 2006 report on Cyberinfrastructure for Humanities and Social Science commissioned by the American Council of Learned Societies.

· **Harold Short** is Emeritus Professor of King's College London, where he founded and directed the Centre for Computing in the Humanities (later Department of Digital Humanities) until retirement in 2010. He has an educational background in the Humanities and in Mathematics, Computing and Systems, and worked for 11 years at the BBC. While at King's he was involved in the development of three MA programmes: *Digital Humanities*, *Digital Culture and Society* and *Digital Asset Management*, and, with Willard McCarty, of the world's first PhD programme in Digital Humanities, launched in 2005. He also played a lead role as Co-Investigator or Technical Research Director in over 20 large-scale inter-disciplinary research projects. He is a former Chair of the European Association for Digital Humanities and the Alliance of Digital Humanities Organisations in which he has a continuing role to support the development of digital humanities associations world-wide. He is a general editor of the Routledge series *Digital Research in the Arts and Humanities*. From 2011-2015 he was Visiting Professor at Western Sydney University, where he was closely involved, with Willard McCarty, in the establishment of the Digital Humanities Research Group, which hosted the international *Digital Humanities 2015* conference. Currently he is a Visiting Professorial Fellow at Australian Catholic University in Sydney, where he is co-Director of the *Julfa Cemetery Digital Repatriation Project*(https://julfaproject.wordpress.com).

· **Ray Siemens** (U Victoria) is Distinguished Professor in the Faculty of Humanities at the University of Victoria, in English and Computer Science, and formerly (2004-2015) Canada Research Chair in Humanities Computing. He is founding editor of the electronic scholarly journal Early Modern

Literary Studies, and his publications include, among others, Blackwell's *New Companion to Digital Humanities*(with Schreibman and Unsworth), Blackwell's *Companion to Digital Literary Studies* (with Schreibman), *A Social Edition of the Devonshire MS*, and *Literary Studies in the Digital Age* (MLA, with Price). He directs the Implementing New Knowledge Environments project, the Digital Humanities Summer Institute and the Electronic Textual Cultures Lab, and served as Vice President / Director of the Canadian Federation of the Humanities and Social Sciences for Research Dissemination, recently serving also as Chair of the international Alliance of Digital Humanities Organisations' Steering Committee.

Syllabus

- **Advance Readings** (all provided in the coursepak or available via links below):
    - Earhart and Taylor, "Pedagogies of Race: Digital Humanities in the Age of Ferguson" (Online)
    - Liu, "Where Is Cultural Criticism in the Digital Humanities?" (Online)
    - McPherson, "Why Are the Digital Humanities So White?" (Online)
    - Mandell, "Gendering Digital Literary History: What Counts for Digital Humanities" (Coursepak)
    - Risam, "Beyond the Margins: Intersectionality and the Digital Humanities" (Online)
    - Svensson, "Sorting Out the Digital Humanities" (Coursepak)
    - Thomas, "The Promise of the Digital Humanities and the Contested Nature of Digital Scholarship" (Online)

- **Opening**
    - Welcome
    - Research/teaching + administrative partnership
    - Possible "buddy system" for this course; structure and intended outcomes

- **Session 1**: **Defining Digital Humanities**
    - History of DH as an international and interdisciplinary undertaking (following Advance Readings, above)
        - *Humanities Computing*
        - *Digital Humanities*
    - Definitions of DH?
        - *What is DH:* Further supportive readings that might be useful include Spiro, "Getting Started in Digital Humanities"; Unsworth, "What is Humanities Computing and What is Not"; Burdick, *et al*., *A Short Guide to the Digital Humanities*; Schreibman, Siemens, and Unsworth, eds. *A New Companion to Digital Humanities,*and *A Companion to Digital Humanities*; Crompton, Lane, and Siemens, eds. *Doing Digital Humanities*(based on the DHSI curriculum).

- *The Humanities & digital scholarship:* Further supportive readings that might be useful include Ayers, “Does Digital Scholarship Have a Future?”; Davidson, “Humanities 2.0: Promise, Perils, Predictions”; Gold, “The Digital Humanities Moment”; McPherson, “Why Are the Digital Humanities So White?”; Unsworth, “The Importance of Failure”
- *Where & when does DH happen?:* Further supportive readings that might be useful include Kirschenbaum, “What is Digital Humanities and What’s it Doing in English Departments?”; Vandergrift, “What is DH and What is it Doing in the Library?”;

- **Session 2**: **Organizing Digital Humanities**
  - Institutional structures (centers, labs, departments, partnerships)
    - *Building foundations:* Further supportive readings that might be useful include: Schafner and Erway, “Does Every Library Need a Digital Humanities Center?”;
    - *Support structures & partnerships:* Further supportive readings that might be useful include Edwards, Jackson, Bowker, and Knobel, "Understanding Infrastructure: Dynamics, Tension, and Design"; Pannapacker, William, “Cultivating Partnerships in the Digital Humanities”;
    - *Collaboration: teams in and across depts and institutions:* Further supportive readings that might be useful include Greenberg, Mylonas, Hamlin, and Yott, “Supporting Digital Humanities Research: The Collaborative Approach”; Casciaro and Lobo, “Competent Jerks, Lovable Fools, and the Formation of Social Networks”; Bohen and Stiles, “Experimenting with Models of Faculty Collaboration: Factors that Promote Their Success”; de Moor and van Zanden, “Do ut des (I Give So That You Give Back): Collaboratories as a New Method for Scholarly Communication and Cooperation for Global History”; Gratton and Erickson, “8 Ways to Build Collaborative Teams”; Katzenbach and Smith, “The Discipline of Teams”; Woodfield and Kennie, “’Teamwork’ or ‘Working as a Team’? The Theory and Practice of Top Team Working in UK Higher Education.”; Nowviskie, “Ten Rules for Humanities Scholars New to Project Management”; Brown and Ettenson, “The Question Every Project Team Should Answer”; Ruecker and Radzikowska, “The Iterative Design of a Project Charter for Interdisciplinary Research”.
    - *Pragmatics: Project funding & management, credit, careers:* Further supportive readings that might be useful include: Siemens,*Issues in Large Project Planning and Management;* Hughes / Burroughs Wellcome, *Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty;* Kirschenbaum, Nowviskie, Scheinfeldt, and Reside, “Collaborators’ Bill of Rights”; MLA CIT, “Guidelines for Authors of Digital

Resources"; MLA CIT, "Guidelines for Evaluating Work in Digital Humanities and Digital Media"; MLA CIT, "Guidelines for Information Technology Access and Support for the Modern Languages."; Fitzpatrick, *Peer Review*.

- *Pedagogy:* Further supportive readings that might be useful include: Cordell, "How Not to Teach Digital Humanities" (http://ryancordell.org/teaching/how-not-to-teach-digital-humanities/); Rehbein and Fritze, " Hands-on Teaching Digital Humanities: A Didactic Analysis of a Summer School Courses on Digital Editing"; Jakacki and Faull, "Doing DH in the Classroom: Transforming the Humanities Curriculum through Digital Engagement"; Mauro, "Digital Liberal Arts and Project-Based Pedagogies"; McCarty, "The PhD in Digital Humanities"; Spiro, "Opening up Digital Humanities Education"; Clement, "Multiliteracies in the Undergraduate Humanities Curriculum: Skills, Principles, and Habits of Mind".

- Associations, conferences, standards organizations, and publications
  - *National, regional and international associations:* Further supportive readings that might be useful include those society websites and documents available via https://adho.org.
  - *Academic infrastructure - national and international:* Further supportive readings that might be useful include Unsworth *et al*., *Our Cultural Commonwealth*; Svensson, 'From Optical Fiber to Conceptual Infrastructure'; Zorich, *A Survey of Digital Humanities Centers in the United States*; see also http://www.dariah.eu, https://www.clarin.eu, https://www.computecanada.ca/tag/digital-humanities/.
  - Some publications and series to consider beyond those noted specifically in the course materials include: the online seminar Humanist, edited by Willard McCarty; blogs, including those by Bethany Nowviskie, Roopika Risam, Dan Cohen, Ted Underwood, Miriam Posner, Melissa Terras, Mark Sample, Matt Wilkens, and Ben Schmidt; and useful groups such as Digital Humanities Data Curation and Zotero Digital Humanities Group; the journals *Digital Scholarship in the Humanities* (http://dsh.oxfordjournals.org/), *Digital Humanities Quarterly* (http://www.digitalhumanities.org/dhq/), *Digital Studies*(http://www.digitalstudies.org/); the book series Topics in the Digital Humanities (U Illinois P), Debates in the Digital Humanities (U Minnesota P), and Digital Research in the Arts and Humanities (Routledge; https://www.routledge.com/Digital-Research-in-the-Arts-and-Humanities/book-series/DRAH), among others; publications frequently referred to in this course: *The New Companion to Digital Humanities*; *Debates in the Digital Humanities*.

- **Session 3**: **Engaging in Digital Humanities**
    - Impact of Digital Humanities
        - On technical developments and infrastructure
        - On arts and humanities research
        - On teaching
    - Preview of possible workshop topics
        - *Institutional strategies*
            - strategies for hiring/strategies for educating search committees
            - organizational structures (centers/labs) supporting DH
            - engagement of library/campus IT/research computing
            - cross-department strategies
            - sustainability
            - different strategies for large and small institutions
            - integrating a DH strategic plan with institutional strategic planning
        - *Nature of research; DH projects*
            - Methods, tools, multi-disciplinary work
            - Selecting a DH research topic
            - Humanities informatics? Human Data Science? Big Humanities Data?
            - Preserving and evolving the epistemological culture of the humanities
            - Individual vs. collective knowledge production
            - Grant-writing, grant-winning/losing
            - technical infrastructure
            - project planning & management, project failure
            - review and publication(s)
            - role(s) for students (ug & grad) in projects
        - Professionalization, credit, peer review
            - Postdocs (designing a postdoc program)
            - graduate training
            - work experience
            - apprenticeship, early and joint publications
            - alt-ac
            - Stated goals for new hires
            - Mentoring to tenure
            - Educating tenure and promotion committees (and colleagues generally)
            - Modeling the DH portfolio in senior promotion cases (assoc. to full)
            - Peer review strategies for projects
        - Pedagogy, DH curriculum
            - DH courses or DH i n courses
            - online instruction
            - open educational resources

- developing courses, certificates, degree programs

  - "Buddy" assignments?

- **DHSI Auditing Sessions** (mornings, Monday-Friday)
  - Participants may audit any and all of the DHSI courses - as a non-participatory observer, able to go from class to class.
  - To help plan auditing visits, course paks (which include outlines, and related materials) can be found at http://www.dhsi.org/content/2019Curriculum/ by May.

- **Dedicated Afternoon Sessions** (Monday-Thursday)
  - Each session typically has three components:
    - 2.00-2.30: discussion of audited courses, led by participants
    - 2.30-3.15: workshop topics, led by tutors or participants. Selection of topics is flexible and may involve case studies where appropriate
    - 3.15-4.00: talk by visiting speaker, followed by group discussion OR a case study, which involves working in small groups on a topic chosen by participants.

- **Tutor 'office hours'** (Monday-Thursday)
  - At least one of the tutors will be available in the course classroom between 1.00 and 2.00 each day Monday through Thursday.
  - Tutors are also happy to speak to participants outside class times, individually or in small groups as interest and opportunity allow.

A Full List of Supportive Readings (many available online, or via earlier courepak)

- Advance Readings, including and in addition to those listed above:
  - Earhart, Amy, and Toniesha Taylor. "Pedagogies of Race: Digital Humanities in the Age of Ferguson." In *Debates in Digital Humanities, 2016*. Ed. Lauren Klein and Matthew Gold. Minneapolis: U Minnesota P, 2016. 251-64.
  - Liu, Alan. "Where Is Cultural Criticism in the Digital Humanities?" In *Debates in the Digital Humanities*, Ed. Matthew K. Gold. Minneapolis: U Minnesota P, 2012. 490-509.
  - McCarty, Willard. "Becoming Interdisciplinary." In *A New Companion to Digital Humanities*. Eds. Schreibman, Susan, Ray Siemens, and John Unsworth. Oxford: Wiley-Blackwell, 2016. 69-83.
  - McPherson, Tara "Why Are the Digital Humanities So White?" In *Debates in the Digital Humanities*. Ed. Matthew K. Gold. Minneapolis: U Minnesota P, 2012. 139-160.

- Mandell, Laura. "Gendering Digital Literary History: What Counts for Digital Humanities." In *A New Companion to Digital Humanities*. Eds. Susan Schreibman, Raymond G. Siemens and John Unsworth. Oxford: Blackwell, 2016. 511–523.
- Prescott, Andrew. "Beyond the Digital Humanities Center: The Administrative Landscapes of the Digital Humanities." In *A New Companion to Digital Humanities*. Eds. Schreibman, Susan, Ray Siemens, and John Unsworth. Oxford: Blackwell, 2016. 461-475.
- Risam,Roopika. "Beyond the Margins: Intersectionality and the Digital Humanities." *Digital Humanities Quarterly* 9.2 (2015).
- Svensson, Patrik. "Sorting Out the Digital Humanities." In *A New Companion to Digital Humanities*. Eds. Susan Schreibman, Raymond G. Siemens and John Unsworth. Oxford: Blackwell, 2016. 476-492.
- Thomas, William G, III. "The Promise of the Digital Humanities and the Contested Nature of Digital Scholarship." In *A New Companion to Digital Humanities*. Eds. Susan Schreibman, Raymond G. Siemens and John Unsworth. Oxford: Blackwell, 2016. 524-537.

· Session 1: Defining Digital Humanities

- Ayers, Edward. (2013). "Does Digital Scholarship Have a Future?" *Educause Review*(August 5, 2013):http://www.educause.edu/ero/article/does-digital-scholarship-have-future
- Burdick, Anne, et al. (2012). A Short Guide to the Digital_Humanities(2012): http://jeffreyschnapp.com/wp-content/uploads/2013/01/D_H_ShortGuide.pdf
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- Davidson, Cathy N. (2008). "Humanities 2.0: Promise, Perils, Predictions" PMLA 123(3): 707–17: http://www.mlajournals.org/doi/abs/10.1632/pmla.2008.123.3.707?journalCode=pmla&
- Gold, Matt. (2012). "The Digital Humanities Moment." In *Debates in the Digital Humanities*, Ed. Matthew K. Gold. Minneapolis: U Minnesota P http://dhdebates.gc.cuny.edu/debates/text/2
- McPherson, Tara. (2012). "Why Are the Digital Humanities So White?" *Debates in the Digital Humanities*, Ed. Matthew K. Gold. Minneapolis: U Minnesota P http://dhdebates.gc.cuny.edu/debates/text/29
- Kirschenbaum, Matthew G. (2010)."What is Digital Humanities and What's it Doing in English Departments?"ADE Bulletin: http://mkirschenbaum.files.wordpress.com/2011/01/kirschenbaum_ade150.pdf
- Schreibman, Susan, Ray Siemens, and John Unsworth eds. (2004).*A Companion to Digital Humanities*. Oxford: Blackwell, 2004 , 2008. xxvii+611 pp. http://www.digitalhumanities.org/companion/.

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- Spiro, Lisa. (2011). "Getting Started in Digital Humanities,"Journal of Digital Humanities (Winter 2011): http://journalofdigitalhumanities.org/1-1/getting-started-in-digital-humanities-by-lisa-spiro/
- Unsworth, John. (1997). "Documenting the Reinvention of Text: The Importance of Failure." JEP 3.2 (1997): http://dx.doi.org/10.3998/3336451.0003.201
- Unsworth, John. (2002). "What is Humanities Computing and What is Not". http://computerphilologie.uni-muenchen.de/jg02/unsworth.html
- Vandergrift, Micah. (2012). "What is DH and What is it doing in the library": http://www.inthelibrarywiththeleadpipe.org/2012/dhandthelib/

· Session 2: Organising Digital Humanities

- Bohen, S. J., & Stiles, J. (1998). Experimenting with models of faculty collaboration: Factors that promote their success. *New Directions for Institutional Research, 1998*(100), 39-55. http://onlinelibrary.wiley.com/doi/10.1002/ir.10004/abstract
- Brown, K. M., Hyer, N. L., & Ettenson. (2013). The question every project team should answer. *MIT Sloan Management Review, 55*(1), 49-57. http://sloanreview.mit.edu/article/the-question-every-project-team-should-answer/
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- Kirschenbaum, Matthew G., Bethany Nowviskie, Tom Scheinfeldt, and Doug Reside. (2011). "Collaborators' Bill of Rights." Maryland Institute for Technology and the Humanities, January 22, 2011. http://mith.umd.edu/offthetracks/recommendations/.
- Mauro, Aaron. (2016). "Digital Liberal Arts and Project-Based Pedagogies." In Crompton, Lane, and Siemens.
- McCarty, Willard. (2012). "The PhD in Digital Humanities." In Brett D Hirsch ed. *Digital Humanities Pedagogy*. Cambridge: Open Book Publishers, 2012. http://www.openbookpublishers.com/product/161/
- MLA Committee on Information Technology
  - "Guidelines for Authors of Digital Resources": http://www.mla.org/resources/documents/rep_it/web_guidelines
  - "Guidelines for Evaluating Work in Digital Humanities and Digital Media": http://www.mla.org/resources/documents/rep_it/guidelines_evaluation_digital
  - "Guidelines for Information Technology Access and Support for the Modern Languages": http://www.mla.org/resources/documents/rep_it/it_support
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- Session 3: Engaging in Digital Humanities (following the above, and as discussed in session)

Pedagogies of Race: Digital Humanities in the Age of Ferguson

AMY E. EARHART, TONIESHA L. TAYLOR

In their 2013 essay, "Can Digital Humanities Mean Transformative Critique?" Alexis Lothian and Amanda Phillips ask, "What would digital scholarship and the humanities disciplines be like if they centered around processes and possibilities of social and cultural transformation as well as institutional preservation? If they centered around questions of labor, race, gender, and justice at personal, local, and global scales?" (Lothian and Phillips). As digital humanities scholars invested in critical race studies, we share their concerns, and we applaud the recent work in the field that draws attention to these questions. But we are also invested in the development of a practice-based digital humanities that attends to the crucial issues of race, class, gender, and sexuality in the undergraduate classroom and beyond. Our *White Violence, Black Resistance*[1] project merges foundational digital humanities approaches with issues of social justice by engaging students and the community in digitizing and interpreting historical moments of racial conflict.[2] The project exemplifies an activist model of grassroots recovery that brings to light timely historical documents at the same time that it exposes power differentials in our own institutional settings and reveals the continued racial violence spanning 1868 Millican, Texas, to 2014 Ferguson, Missouri.

An Activist Model of Grassroots Recovery

As our cultural heritage is being transferred from print to digital form, we must ensure that we do not perpetuate known biases. In the previous volume of *Debates in the Digital Humanities,* one of this chapter's authors, Amy Earhart, critiques the digital "canon that skews toward traditional texts and excludes crucial work by women, people of color, and the GLBTQ community," advocating for an activist model of grassroots recovery projects to expand current digital offerings (316). This model could also help to allow broader participation in canon expansion. Rather than the current digital project model, one that relies on a high degree of expertise and knowledge, as well as substantial funding, grassroots recovery approaches emphasize the use of entry-level technology and broad partnerships, with particular attention to community and student participation. We select technologies with

low entry points so as to encourage this range of participation. Here we disagree with those who see digital humanities projects as too complex or too difficult for introductory courses, such as Peter J. Wosh, Cathy Moran Hajo, and Esther Katz. We reject an approach that "relies more on describing and critiquing projects than examining the challenges inherent in creating digital projects," instead maintaining that embedded skills development is possible within such courses, and that undergraduates may make meaningful contributions to digital projects (Wosh, Hajo, and Katz). We are also concerned that an overreliance on high-end technologies in digital humanities projects necessarily excludes those outside of well-funded, elite academic institutions. As we watched news from Ferguson and later Baltimore, it became apparent that citizens on the ground were closest to the news and were using social media to share their experiences. We view this as a compelling reason to keep skills at an accessible level so that they can translate from the classroom to the community. In our classrooms, we teach "small" digital humanities skills such as data collection, metadata application, and analysis. We are invested in working with community activists and students, both of whom have much to add to scholarly work. Accordingly, we structure our projects to provide entry points for a range of collaborators. Ours are projects that can grow over time. The careful structuring of a classroom exercise allows for the development of an increasingly complex and sophisticated project as budgets and skills grow.

A collaborative project between this chapter's authors and the students in their respective classes at Prairie View A&M University (PVAMU) and Texas A&M University (TAMU), *White Violence, Black Resistance,* provides an important example of how grassroots projects can teach research, recovery, and digitization skills while expanding the digital canon—in this case, as it relates to race, violence, and Texas politics.[3] *White Violence, Black Resistance* privileges the recovery of historic primary sources and literary products languishing in our university special collection and archives. Accordingly, Earhart has focused on the recovery and curation of primary materials related to the Millican riot, an 1868 race riot in Texas, while Taylor has collected materials related to Prairie View A&M women. As we were collecting and digitizing these materials, the United States was hit with waves of violence against black bodies. As the murders of Mike Brown and Eric Garner made the news, our historic project gained additional contemporary significance. Activists' use of social media to document and draw attention to recent events reaffirmed our desire to include local communities in our projects. Taylor, who began to collect tweets associated with the hashtags #ICantBreathe, #BlackLivesMatter, #BLM247, #Ferguson, and #JusticeforMikeBrown, was shocked by the eerie echoes of the language

used during the coverage of the Millican riot and how it was replicated in contemporary coverage of violence against African American men. It redoubled our desire to broaden the digital canon with respect to white violence and black resistance, since those issues remain crucial to our understanding of contemporary events.

By viewing our project as activist in nature, we are able to tap into alternative understandings of project development. Most digital humanities work is premised on an acquisition model, wherein a project or center must accrue money, staff, space, and hardware so as to complete meaningful digital projects. We wondered how we might, instead, think about a dispersal model, one designed to decenter traditional power structures by shifting power centers, eliminating funding needs, and reducing the necessity for advanced technical knowledge. What does it mean to create a truly student-centered project? What does it mean to rethink archival ownership? How do we redefine the relationship between scholarship and community? Might we allow subject specialists who lack high-end technical skills to participate in digital projects? *White Violence, Black Resistance* was designed to answer such questions as we leveraged expertise and resources across historical areas of divide. We also followed the lead of GO::DH co-founder Alex Gil, who argues that diversity of approach is the key to access (see also chapter 16 in this volume for Ernesto Oroza's interview with Alex Gil). Indeed, resources and support vary by borders and by institution and are fundamentally local. In our project, citizen scholarship and community interest in the recovery and analysis of historical and cultural materials provide invaluable resources. In designing our project, we have prioritized the development of a space for community activists and citizens to participate.4

TAMU and PVAMU: System Institutions with a Twin Past

We are acutely concerned with inequitable distributions of digital humanities resources and labor, given the divergent histories of our home institutions, Texas A&M University (Earhart) and Prairie View A&M University (Taylor). Prairie View A&M University first opened in 1876 as Alta Vista Agriculture & Mechanical College for Colored Youth, the same year that Texas A&M University was opened as the land grant Agricultural and Mechanical College.5 During segregation, the two universities were divided by race, and they continue to be divided by resources. Though the state constitution in Texas clearly indicates that both are "universities of the first class," they have not seen the funding allocations that would realize this (Woolfolk, 27–28). Rather, the campuses continue to be marked by a separation of race and resources that constructs

Texas A&M as a predominantly white (PWI) research university and Prairie View as a historically black (HBCU) teaching university.

Over the course of our collaborative project, certain practical implications of this racially charged history became apparent. For instance, Taylor discovered that the two universities have had different attitudes toward the development of special collections materials (Gabriel; Owens). Certain types of preservation were viewed as a drain on limited resources that exacerbated existing power differentials. According to an informant, the racial tensions and pressures of creating a space:

> for the education of Negroes meant that keeping paper and stuff was seen as *the white man's job* [emphasis spoken]. You know something that white folks did. And could do better. You had folks that really believed that. So they thought that if they, you know, A&M, wanted to keep stuff then folks would let them. Never mind this meant they could care less about us or what really happens up here, but you know, we kept what we could when folks would know better. (Anonymous Informant No. 2)6

The inequitable treatment of HBCU libraries within larger university systems is a pervasive problem. Irene Owens documents the difficulties that such libraries have faced in terms of space, personnel, and collections, and the library at Prairie View A&M is no exception ("Stories Told yet Unfinished").7 Funding issues for a variety of campus-related preservation projects at PVAMU have only recently begun to be addressed. We view our project as another way to help equalize the imbalance between institutions. For example, Taylor discovered, during her time working on the PV women's materials, that many PVAMU-related documents had been moved to the TAMU special collections. Yet the materials were often stored haphazardly in back rooms at the main campus, effectively hidden from the cataloging system and therefore from use. Through our collaboration, we have been able to find partners at both institutions to help review the collections. The Dean of TAMU has promised to return the materials pending the findings of the investigation; the process of repatriation has begun.

White Violence, Black Resistance reminds us of the range of means by which power differentials are replicated within the academy. When we selected Omeka as our platform, we each asked our institution to host the software on a campus server. Omeka is available either as a free software program that an individual or organization can install and run on a server, or as a for-fee service through which the software is

hosted by the Roy Rosenzweig Center for History and Media (RRCHNM) at George Mason University. We initially hoped to install the software on our own servers, as there is greater ability to customize the site with local control. Unfortunately, hosting the Omeka software proved difficult. Texas A&M University has strict rules that prohibit faculty from running small-scale servers, making a self-run Omeka installation out of the question. Earhart's interest in using Omeka began a formal inquiry into content management systems run by the TAMU library, but at this date neither the library nor the Initiative for Digital Humanities, Media, and Culture (the IDHMC, TAMU's digital humanities center) have installed Omeka. So, institutional support of this sort of collaborative pedagogical work proves challenging at Texas A&M University. To complete the project, Earhart used her research funding to purchase access to an RRCHNM-hosted Omeka installation. Taylor, on the other hand, found Prairie View A&M University supportive of Omeka hosting due to its pedagogical applications. Taylor was able to secure the annual purchase of Omeka access through university funds for student research and faculty development, yet she was unable to persuade the university to support Omeka on its own servers due to concerns over student access to Omeka as a data curation space. The launch of the project through Omeka, then, was impacted by our universities' understandings of their respective missions—teaching versus research—and institutional rules about server access.

The divergent missions of these universities also impact the ability of their faculties to access research funding, whether through conference travel or release time. When our paper on *White Violence, Black Resistance* was accepted at Digital Humanities 2014 in Lausanne, Switzerland, for example, Taylor was unable to secure travel funding, so Earhart attended and presented the paper with Taylor skyping in to the session. But other institutional structures present greater impediments to the project's success. Taylor was able to locate a GIS specialist, Noel Estwick, who taught her students basic mapping approaches to historical data, a partnership nearly impossible at TAMU, where tenure and promotion requirements encourage faculty to privilege research productivity over pedagogical training. Through the project, we have learned that successful partnerships must circumvent the limitations of specific institutions and find strength in partnerships that remove barriers. Rather than assuming that the research institution has greater resources, our partnership reminds us that every institution can make valuable contributions to carefully constructed projects.

Such partnerships require careful management of the ownership of materials and digital content, however. Given the past history of removal of resources from PVAMU to

TAMU, we carefully considered symbolic markers of ownership in the project. We decided that individual pieces of the project might be housed on the respective scholars' institutional server, but that the project website needed to be neutral, a space deliberately unaffiliated with either university in its domain registration and visual branding. We chose a Google Sites page as a federating space in which to gather our materials and eschewed institutional labels or logos.8 Given a history of institutional exploitation, we wanted to emphasize in simple ways that Texas A&M and its affiliated faculty and students were not going to co-opt materials or work from Prairie View A&M. At the same time, we wanted to individuate the projects and give students control over their engagement with them. The discrete representation of individual digital objects within Omeka allowed students to delineate their own items while at the same time contributing to a larger project. Omeka became a bridge through which we could model student research across the two universities, emphasizing individual archival collection and collaborative moments of interaction between the classes.

DIY Digital Projects: Choosing Tech and Teaching Choices

Central to the recovery project has been a sense that historical and cultural narratives have often erased Prairie View and other primary black towns and spaces in Texas and within our university system. Will G. Thomas III and Elizabeth Lorang argue for "an alternative modality of engagement with the digital on our campuses—one built around reciprocity, openness, local community, and particularity." We view projects like our current work as a way of disrupting such erasures, using carefully constructed technological projects to spread digital cultural empowerment through both universities and student bodies. Much as we saw activists using Twitter to promote change during #BlackLivesMatter campaigns, we too see technologies as opening spaces of intervention. Here we also agree with the FemTechNet whitepaper that Internet technology "strains the capacity for respect and the appreciation of the nuances of diverse backgrounds which increases the intensity of the work that must be done by teachers and organizers of the learning process."

To locate the voices, spaces and places where African American contributions have been most actively present, yet also actively erased or silenced, we have been careful to create digital structures that reveal rather than conceal. Such erasure, we found, occurs both symbolically and literally. Our project intervenes in current structures of production through the digitization and dissemination of materials about white violence and black resistance found buried in difficult-to-access

archives, crumbling newspapers, analog and/or transcribed oral histories, and unknown journals. We focus on the recovery of cultural objects that have been underrepresented in digital archive collections, artifacts that discuss the racial violence, tensions, and other aggressions (micro and macro) in our localized Texas environment. This project brings to light the very different university and social structures in which our students reside. For Taylor's predominantly black students, the recognition of historical racism and violence against African Americans is far less surprising than it is to Earhart's predominantly white students. In Earhart's class, students often struggle to come to terms with the horrific mutilation and lynching of a black Methodist minister, Reverend George Brooks, that occurred a mere twenty minutes' drive from campus.9 The difference in student perceptions of the Millican race riot mirrors national understandings about violence and race. After Ferguson, numerous polls showed that black and white Americans perceived race issues very differently. For example, a December 2014 Gallup poll, cited in *U.S. News and World Report,* revealed a statistically significant difference in the view of racism (Cook). The same patterns are replicated in our classrooms, reminding us of how significant it is to engage students in such complex and troubling history.

When Taylor discusses the idea of erasure with her students, she is careful to focus on how individual stories have often been silenced. As V. P. Franklin reminds in his text, *Living Our Stories,* the voices of African Americans are crucial to the American project. While the slave narrative is the first, and, Franklin argues, the only real American literary tradition, it gives birth to a power inherent in the names and naming of black lives. Franklin impresses on his reader that in the telling of the stories there is a resistance to silence and erasure. The power of the narrative is held within the black body telling the story. For students engaged in the digitization of documents, it becomes important to name as many aspects of the document, such as the author, the place of publication, and the race of the participants, as possible. This naming happens in the creation of a plain but common language system used for metadata. It also gives both Earhart and Taylor an opportunity to discuss how racial descriptors that may have once been in vogue can change over time. In conversations with students, there have been deep discussions about the use of racial descriptors that appear in historic newspapers and photo captions. So where Franklin would argue that there is power in the telling of the stories, we would assert that there is particular power in the story of metadata as a searchable discourse that expands or contradicts the data. For this reason, we encourage students to think about how the use of descriptive terms of race such as "colored," "negro," "white," and "mulatto" function historically and contemporarily, in both historical

documents and our current digital project.

In Taylor's class, students worked on projects related to the Prairie View Women's Oral History Project, which redresses the fact that very few of the published histories of the university mention the women who were on the staff or faculty of the institution. Among the oral histories collected from women who have had a thirty-year or longer relationship to the university, students interviewed Dr. E. Joahanne Thomas-Smith, the longest serving upper-level woman administrator in PVAMU history.10 Students uncovered a number of women who came to Prairie View and returned as staff or faculty members, including Lucille Bishop Smith. After finding that there was little mention of the first women who attended Prairie View A&M, students discovered evidence of a washerwoman on staff in 1878 (unnamed in the annual report) as well as female students in attendance. The project collects narratives, personal papers, photographs, and audio and video recordings related to the growth, development, and maintenance of the university, its students, faculty, staff, and surrounding community through a "deep dig" into the university archives, expanding the digitized canon of works collected and archived by the university. The items that students located were often well known to senior community members but missing from the official digital archive.

In Earhart's class, students researched a local history event, the Millican race riot of 1868, a conflict that occurred in Millican, Texas, a town located fifteen miles from Texas A&M University campus.11 Details remain unclear, but we believe that Reverend George Brooks, a local Methodist preacher, former Union soldier, and Union League organizer, led his congregants to drive a Klan parade out of Millican, which sparked several days of conflict and the deaths of numerous black Millicans, including Brooks. The event was covered by newspapers across the globe, yet when the event is discussed by scholarship a watered-down version with glaring inconsistencies is presented. For example, in *Still the Arena of the Civil War: Violence and Turmoil in Reconstruction Texas, 1865–1874,* Mary Jo O'Rear notes that in response to the supposed lynching of Miles Brown, the black militia "took Brown's boss, plantation owner Anthony Holiday, hostage" (275). Students' research of newspaper archives, marriage documents, and Census materials reveal that the relationship between the Holiday or Halliday family and the black community is complex. Andrew and William Holiday, sons of the former Brazos County plantation owner Samuel Holiday, were involved in the riot as well as black freedmen who share the surname Holiday, suggesting that they were either owned by the Holiday family or were relatives of the white Holidays. Clearly the complexities of the local situation demand recovery to bring the riots and the participants into focus.

The *White Violence, Black Resistance* site functions as a common space for the two courses as well as a classroom space. While we are interested in producing a high-quality research project, we continue to position student learning and shared inquiry before the production of the archive. This is a crucial distinction, as we do not want to lose student agency and participatory learning in our desire for a finished site. Paul Fyfe calls the interaction between classroom and research "a terrific opportunity to join students in shared projects of inquiry and explore new aspects of the discipline" (85). To this end, we evaluate student learning based on tasks completed within a project during the course through carefully constructed markers of assessment. For example, students are asked to apply metadata to the individual items that they include in the Omeka site. To facilitate this task, we workshop the project with a metadata specialist in the library and incorporate a discussion of the limitations of metadata, which is particularly important when dealing with the complexities of race. We also ask students to write reflections on the experience of applying metadata so as to have them apply humanities interpretations to technological functions. As Lindsay Thomas and Dana Solomon note, "Asking students to use, break, and comment on a project currently in development—and then, ideally, repeating this cycle—transforms how they think about the project itself and about their roles as researchers, students, and developers." Finally, we see students as part of a process of creation and fully expect that materials that they create will undergo review and revision similar to the peer review process of scholarship. We remind students that they will be given credit for the work they produce. At the same time, we make clear that process-oriented projects mean that various partners might revise items submitted to projects, much as an editor would suggest revision to scholarly articles and books.

Here we understand digital pedagogies as closely akin to the way writing and communication has been taught. Process remains the central goal, not just product. Accordingly, students take an active role in the project, some driving to local sites related to the project to collect graveyard records and others seeking relatives whom they might interview about ties to Prairie View A&M University. Students select particular areas of interest with which to engage, giving students ownership and responsibility for constructing their own attributed sections of a larger federated site. We are focused on what E. Leigh Bonds calls a "methodology of experimentation—of teacher and student producing knowledge rather than delivering/receiving it" ("Listening in on the Conversations"). Crucial to our belief in a student-centered, activist project we follow the principles of the Collaborators' Bill of Rights for attribution.[12] Accordingly, each student was given a form to fill

out that requests students opt in or out of the public display of the project. While we might require that students complete work on the project for the class for credit and grades, we must give students the right to opt out of the public display due to safety concerns or privacy issues.

A focus on points of resistance is central to student learning. Just as we as faculty collaborators interrogate moments of resistance in our partnership, we encourage students to understand how points of resistance in their own work, in the historical narrative, or the technical interface reveal crucial moments of engagement and insight. Instead of following a lockstep approach to a text, we ask the students to creatively interrogate the text within a broader context. As Ann Hawkins argues, "the textual condition I find most commonly in my students: [is] a textual boredom." By asking students to engage with the consideration of how such resistances shape knowledge, the project spurs student engagement and skills development. Omeka's use of Dublin core metadata provides one such moment of interrogation. Dublin core metadata is a fifteen element form of description that is purposefully "broad and generic" (Metadata Innovation). While the broadness of the metadata makes it broadly applicable, the danger of such a metadata form is a loss of the specific contours of certain cultural experiences. Application of metadata forces students to consider their materials as nuanced and complex. Instead of merely conducting close readings of materials, as would happen in a traditional literature or communication studies course, the application of metadata helped to push students to confront crucial concepts that we teach in our courses. For example, the software defines the creator category as "an entity primarily responsible for making the resource" (Omeka). Students questioned how to apply the creator category to newspaper article reprinted or extensively quoted in other newspaper publications. They also wondered how to attribute the creator of oral histories passed down from parent to child and preserved by the black community. Such questions help us to reframe the way that ownership becomes culturally constrained.

Most powerful is the ability of such projects to shift the relationship between student, teacher, and community. "In such networked humanities projects, . . ." notes Alan Liu, "the paradigm changes to one in which the teacher and student stop looking through the text just at each other, turn shoulder to shoulder, and both look at a different kind of project they are building together—one that, as in the case of a Web site, allows them to look *through* it to a public able to look in reverse at *them*" (314). The ability to have students work with faculty and to allow the public to view the type of work that we accomplish is powerful, particularly within the current environment of distrust of the academy. Students are interested in

classroom activities that have an impact, and "there is clear evidence that students are not dominated by new media (as the NEA reports)," according to Tanya Clement, "but instead feel an increased sense of creative control and therefore a desire to participate in society and actively engage in 'generative practices' that herald social change" ("Multiliteracies"). Students who participate in our digital projects uniformly note that the work is a highlight of their college career, a project that meant something important to them and to their learning experience. The community benefits from our work as well through expanded access to the topics we are investigating. Many of the resources related to our project, such as contemporary newspaper accounts, are paywalled. As university faculty we have access to a substantial number of resources that remain unavailable to the general public, whether digital, such as digital newspaper databases, or physical, the permission to examine archives. As we have received feedback from the interested public regarding our project, it is clear that the inequities of access have impacted what the interested novice might be able to learn about these events. Hence, we have focused on collecting and making open access to primary resources related to the events we are exploring.

Our work has revealed that the print record tells only one piece of the story of such racial conflicts, so we have turned to the local community to flesh out the record through oral histories. Contemporary newspaper reports give the numbers of dead in the Millican riot from zero to sixty persons. Oral histories from the local black community suggest that the number was far greater than reported. By including oral histories we present other stories and perspectives, learning from local communities with long memories of such events. Such projects encourage our students to interact with the community, to move off of the campus grounds, while also expanding their understanding of cultural and historical events. The opportunity to work with the community also provides student agency. Saklofske, Clements, and Cunningham note that "students need not only collaborate with academic colleagues, but also with their wider community. The mutable nature of the digital environment demands flexibility, so that students can be allowed to bring their own ideas, knowledge, questions and topics into the learning environment, as opposed to the strict set of guidelines that might be imposed by an instructor of administration." While acknowledging that such freedom could seem "daunting" to students, "we must recognize various means of knowledge contribution through unique and differing methods of communications" (Saklofske, Clements, and Cunningham). For students this has meant a greater connection to the events and people of the past. Moreover, students are empowered to think critically about the ways that *not* digitizing the stories of the local community further si-

lences them. Students working with the Prairie View Women's Oral History Project recognize that Prairie View's rural location and agricultural focus allows for a localized knowledge of history that is often invisible to those outside the university community. Curating digital exhibits with the aid of community members provides needed institutional and social memory context. To ensure that local knowledge is not exploited or misrepresented, projects are created in collaboration with community members and the faculty member.13 Of course, a connection to the local community needs to be carefully navigated. Given the historical past of our universities, community members rightly fear exploitation. Any connections to the community need to be carefully built, paying attention to power dynamics.

At a moment where black bodies are under threat, attention to the historical roots of such violence is crucial. Through the engagement of students and the community *White Violence, Black Resistance* creates a digital record of past violations that have a direct impact on how we understand Ferguson, Mike Brown, Trayvon Martin, and other such contemporary events. Student exploration of the historical events through primary documents provides an important space for students to come to terms with such events and to position these historical events in relationship to current events. The creation of digital canons where such events are erased allows us to believe that such acts are random occurrences of a few individuals rather than systemic actions that have origins within American culture. Through careful attention to historical inequities within our institutions, with the attention to power dynamics between students, faculty, the university, and our communities, our project provides a model of digital humanities engagement with complex issues of race and social justice while also providing needed expansion of the digital record.

Notes

1. http://sites.google.com/site/bkresist.

2. *White Violence, Black Resistance,* https://sites.google.com/site/bkresist/.

3. Currently, the digital canon is skewed by the types of projects that seem most likely to receive funding. Funding is often reliant on granting agencies that must make decisions based on impact. Impact is often measured by interest in a subject or author, which means that better-known authors, more canonical authors, are necessarily more likely to be funded than those seemingly noncanonical or lesser-known authors. Jessica DeSpain and Elizabeth Lorang have tracked NEH funding awards and argue that "from 2006–2016, the combined totals of Digital Humanities Start-up Grants, Implementation Grants, Digging into Data Grants, and Fellowships, as well as Collaborative and Scholarly Editions and Translations Grants indicate that out of 691 grants, only 34 have

women's work as a subject—5 percent of funded projects. The statistics for grants considering underrepresented cultures is slightly higher, at 14 percent."

4. Other digital projects are built on community interaction. See *History Harvest*, http://historyharvest.unl.edu, and *eBlack Champaign Urbana,* http://eblackcu.net. Thank you to Paul Fyfe for suggesting these resources. We are also exploring partnerships within our community. One local group, the Camptown Texas Ten Counties Historical Explorers, has a history of exemplary work in documenting African American experiences in Texas. They have successfully documented the Camptown Cemetery in Brenham, Texas, and have been working to obtain historical markers to commemorate the Millican riot and other black history events. The knowledge possessed by individuals who participate in the group is rich and often underestimated by scholars.

5. Prairie View A&M University became a land grant university in 1890 when the Morrill Act was expanded to include "Negro-Land Grant Institutions."

6. Participants in the Prairie View Women's Oral History Project are allowed to choose to have their interviews remain confidential; in some cases the names of participants are withheld by mutual agreement.

7. Owens also has a helpful discussion of the inequitable treatment of HBCU libraries.

8. We recognize that the choice of Google as a neutral space runs counter to many in digital humanities who are concerned with Google's control and ownership of materials. Our project, however, uses Google as the federating space, with project and partnership descriptions linking to individual project materials housed on other servers.

9. Contemporary newspaper reports indicate that Brooks was mutilated before lynching. Reverend George Brooks's body was only identifiable by his previously missing finger on his right hand (Nevels, 21).

10. Dr. Flossie M. Byrd is the second longest serving woman administrator with twenty-seven years of service (she was a Dean of the College of Home Economics for twenty-three years). Mrs. R. B. Evans is likely the third longest serving woman administrator as Dean of Women, and Dr. Thomas-Smith is the longest, as her appointment in administration is ongoing. Dr. Thomas-Smith was Provost and Senior Vice President of Academic Affairs for eighteen years. She served in administrative roles for nearly thirty-nine years and has been at PVAMU for forty-seven years.

11. The town is located 36.5 miles from Prairie View, Texas.

12. Collaborators' Bill of Rights, NEH whitepaper, http://mith.umd.edu/offthetracks/recommendations/.

13. Just under half of the students that have participated in the curation and collection work on the Prairie View Women's Oral History Project have had one or more family member(s) previous attend PVAMU. The majority of these students were not from the Prairie View or Waller County communities. So while they had an intimate family connection to the university, they tended to not have the same familiarity with the surrounding community. This required both students and professor to think more critically about the connections to community and the location of narratives.

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Where Is Cultural Criticism in the Digital Humanities?

ALAN LIU

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

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

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

tial and responsibility to assist humanities advocacy") is counterfactual or, at best, proleptic. It's a tactical lie in the service of a hope.

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

The digital humanities have been oblivious to cultural criticism

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

It is as if, when the order comes down from the funding agencies, university administrations, and other bodies mediating today's dominant socioeconomic and political beliefs, digital humanists just concentrate on pushing the "execute" button on projects that amass the most data for the greatest number, process that data most efficiently and flexibly (flexible efficiency being the hallmark of postindustrialism), and manage the whole through ever "smarter" standards, protocols,

schema, templates, and databases uplifting Frederick Winslow Taylor's original scientific industrialism into ultraflexible postindustrial content management systems camouflaged as digital editions, libraries, and archives—all without pausing to reflect on the relation of the whole digital juggernaut to the new world order.

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

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

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

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

While this is not the place for a detailed examination of the close versus distant reading debate (to which I have myself contributed [Liu, "Close"]), it is apropos to recognize that the debate serves as a proxy for the present state of the running battle between New Critical method and post–May 1968 cultural criticism. Indeed, we recall that close reading came into dominance only after the New Critics fought polemical battles against a *prior* age of cultural criticism whose methods were in their own way distant reading. I refer to nineteenth-century

historicist, philosophical, religious, moral, and philological reading, which culled archives of documents to synthesize a "spirit" (*Geist*) of the times, nations, languages, and peoples capable of redeeming the other, darker people's identity haunting the century: the French revolutionary mob. The New Critics displaced such *Historismus* (as the Germans called such historism), but only to urge an equivalent project of modern reclamation. Rejecting alongside *Historismus* (and the related intellectual tradition of *Geistesgeschicte)* also the "paraphrase" of contemporary scientific discourse and mass media information, they defended their notion of an individual human sensibility rooted in organic culture (originally, the yeoman small-farm culture idealized in their southern agrarian phase) against the other, "northern" people's identity of the time: modern mass industrial society.[8]

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

Now enter the digital humanities, which have been invited to the main table of debate. As symbolized by Moretti's collaboration at Stanford with the digital humanist Matthew Jockers (the two have started the Stanford Literary Lab and worked together on quantitative stylistics research), the digital humanities are now what may be called the *practicing partner* of distant reading. I choose this phrase not to imply that everyone else since May 1968 has been disengaged from practice but to spotlight the fact that digital humanities practice assumes a special significance qua practice because it is positioned at a destabilizing location in the post–May 1968 balance of methods. In reality, we recall, the running battle between the New Criticism and critical methods après 1968 fairly quickly settled into a cold war. Generation '68, including cultural critics, occupied the high ground of "theory." The New Criticism, meanwhile, dug into the ordinary, pedagogical, and even existential

levels of reading practice—to the extent that even high theorists took pride in grounding their method in close reading. Just as deconstruction was ultraclose reading, for instance, so the New Historicism read the microhistory of "anecdotes."[10] An unspoken demilitarized zone thus intervened between close and cultural-critical reading.

The digital humanities break this détente. Sophisticated digital humanities methods that require explicit programmatic instructions and metadata schema now take the ground of elemental practice previously occupied by equally sophisticated but tacit close reading methods. Moretti and his collaborators, therefore, explore "the great unread" of vast quantities of literature (rather than only exceptional literature) through text analysis, topic modeling, data mining, pattern recognition, and visualization methods that have to be practiced at the *beginning* and not just interpretive or theoretical end of literary study.[11] Adding to the casus belli is the fact that the contrast between the practices of close reading and the digital humanities is so stark that it is changing the very nature of the ground being fought over: the text. The relevant text is no longer the New Critical "poem [text] itself" but instead the digital humanities archive, corpus, or network—a situation aggravated even further because block quotations serving as a middle ground for fluid movement between close and distant reading are disappearing from view. We imagine, after all, that even as bold a distant reader as Moretti still at times—or even most times—wants to pause to close read en bloc literary passages as he encounters them. But block quotations have a different status in the digital humanities. Either they drop out of perception entirely because text analysis focuses on microlevel linguistic features (e.g., word frequencies) that map directly over macrolevel phenomena (e.g., different genres or nationalities of novels) without need for the middle level of quoted passages; or they exist as what hypertext theorists, originally inspired by Roland Barthes, call "lexia"—that is, modular chunks in a larger network where the real interest inheres in the global pattern of the network.[12] In either case, one noticeable effect of distant reading in Moretti and Jockers's mode is that data visualizations of large patterns increasingly replace block quotations as the objects of sustained focus. One now close reads graphs and diagrams that have roughly the same cognitive weight (and even visual size on the page) as block quotations of old, even if the mode of "meaningfulness" to be read off such visualizations is of a different order (linking the act of analysis more to breadth of field than to a sense of depth or emplacement).

The upshot is that digital humanists will never get a better invite to the table, as I put it, where the mainstream humanities are renegotiating the relation between qualitative methods premised on a high quotient of tacit understanding and

quantitative methods requiring a different rigor of programmatic understanding. All those lonely decades of work on text encoding, text analysis, digital archives or editions, online reading tools or environments, and other incunabula of digital scholarship are now not so lonely. Mainstream humanists have come to recognize that, at minimum, they need a search function to do research; and the nature of digital media is such that the transition from the minimum to the maximum is almost instantaneous. No sooner does one come to depend on online searching then it becomes intuitive that one also needs advanced digital humanities tools and resources to practice scholarship in the age of Google Books. Indeed, Google itself has encouraged the creation of new digital humanities methods for using Google Books through its Digital Humanities Research Awards (Orwant).

But will digital humanists be able to claim their place at the table? Or, as in the past, will they once more be merely servants at the table whose practice is perceived to be purely instrumental to the main work of the humanities?[13] This is the blockage in the growth of the field that I fear. Consider the nature of some of the scholarly works that have recently had the greatest impact in turning the attention of the humanities to large literary systems—for example, Moretti's *Graphs, Maps, Trees* and Pascale Casanova's *The World Republic of Letters*. Both of these remarkable books, which participate in what James F. English calls the "new sociology of literature," frame their corporate- or system-scale analyses of literature in cultural criticism—specifically, a combination of Braudelian historiography, Marxist sociology (in Casanova's case, an Immanuel Wallerstein–like "core versus periphery" analysis of world literature), and global-scale literary comparatism. The lesson to digital humanists should be clear. While digital humanists have the practical tools and data, they will never be in the same league as Moretti, Casanova, and others unless they can move seamlessly between text analysis and cultural analysis. After all, it can be said that digital materials on the scale of corpora, databases, distributed repositories, and so on—specialties of the digital humanities—are ipso facto cultural phenomena. The people behind Google Books Ngram Viewer say it. In their groundbreaking *Science* article (paralleled by Google's release of its Ngram Viewer), Jean-Baptiste Michel and Erez Lieberman Aiden (with their collaborators) call their quantitative analyses of Google Books a contribution to "culturomics." So, too, the Software Studies Initiative at the University of California, San Diego, is well advanced in developing what it calls "cultural analytics."[14] Where are the digital humanists in the picture? To be an equal partner—rather than, again, just a servant—at the table, digital humanists will need to show that thinking critically about metadata, for instance, scales into thinking critically about the power, finance, and

other governance protocols of the world.

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

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

I believe that the service function of the digital humanities—as literal as running the actual servers, if need be—can convert into leadership if such service can be extended beyond facilitating research in the academy (the usual digital humanities remit) to assisting in advocacy *outside* the academy in the humanities' present hour of social, economic, and political need. I refer to the economic recession beginning in 2007 that gave warrant to nations, regional governments, and universities to cut funding for the humanities and arts in favor of fields perceived to apply more directly to society's well-being, especially the STEM fields (science, technology, engineering, mathematics).[15] Of course, this is an old story that goes back as far as the "two cultures" problem named by C. P. Snow. What is new is that the scale of the Great Recession of 2007—bringing a climax to decades of neoliberal and postindustrial trends that shift the work and value of knowledge away from the academy—is leading to a changed paradigm. Especially in public university systems, which are exposed most directly to changing social, economic, and political attitudes, the new normal threatens to solve the two cultures problem by effectively subtracting one of the cultures. The humanities, arts, and other disciplines that rely disproportionately on funds not supplied by industry or national agencies for science, medicine, and defense are in peril of systematic defunding.

Simultaneous with such defunding, another peril threatens the humanities: the continuing breakdown in their ability to communicate with the public. This, too, is an old story that extends back, for instance, to the decline of the fabled "public intellectual" in the twentieth century. What is new today is that the Internet and, most recently, Web 2.0 have altered the very idea of effective public communication by changing the relation between "experts," traditionally those with something valuable to communicate, and the public, who traditionally listened to expertise (or at least media reports about expertise)

and responded with votes, tuition dollars, fees, and so on to support the various expert institutions and professions. As perhaps best exemplified by Wikipedia, the new networked public is now developing its own faculty of expertise through bottom-up processes of credentialing (e.g., Wikipedia's "administrators"), refereeing, governance, and so on. It will take at least a generation for the academy (and mediating agencies such as journalism) to create or adapt the institutional protocols, practices, and technologies that can negotiate a new compact of knowledge between expertise and networked public knowledge—for example, between the standards of peer review and crowdsourcing. In the meantime, the humanities are caught in a particularly vicious form of the communicational impasse of expertise. While the networked public still tolerates specialized knowledge from scientists, engineers, doctors, and others, it seems to have ever less patience for specialized humanities knowledge, since in the domain of "human" experience everyman with his blog is an autodidact. And this is not even to mention the ridiculous mismatch between the forms of humanities knowledge and the new networked public knowledge—for example, between the scale, structure, and cadence of a humanities monograph and those of a blog post or tweet.[16]

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

Hence the unique leadership opportunity for the digital humanities. As digital humanists simultaneously evolve institutional identities for themselves tied to the mainstream humanities and explore new technologies, they become ideally positioned to create, adapt, and disseminate new methods for communicating between the humanities and the public. At a minimum, digital humanists—perhaps in alliance with social scientists who study Internet social activism—might facilitate innovative uses of new media for such traditional forms of advocacy as essays, editorials, petitions, letter-writing campaigns, and so on. But really, digital humanists should create technologies that fundamentally reimagine humanities advocacy. The goal, I suggest, is to build advocacy into the ordinary work of the humanities, so that research and teaching organically generate advocacy in the form of publicly meaningful representations of the humanities. As a starting point, for example, consider how something like the Open Journal

Systems (OJS) publication platform might be extended for this purpose. Created by the Public Knowledge Project, OJS facilitates the publication and management of online journals while also providing "reading tools" that assist users in pursuing additional research (e.g., looking beyond an individual text through search and aggregation tools that give a glimpse of the relevant context). Imagine that OJS could be mashed up with text analysis and extraction tools as well as output platforms like OMEKA or the Simile Exhibit and Timeline widgets designed to break scholarship free of the "document" format, with the result that the publication process automatically generates from every article a "capture" of humanities scholarship that is not just an abstract but something more akin to a brochure, poster, video, or other high-impact brief—that is, something that could expose the gist of scholarship for public view and use.

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

tory of Multitasking," "UC and Human Rights Around the World," and "What is the Community Reading?" (Liu, "UC Research Contributions to the Public"). While humanities scholarship can sometimes seem abstruse, minute, or nonsensical to the public (true of all fields), there are also a stunning number of projects that intuitively, profoundly, and movingly demonstrate the public value of the humanities—many of them, not incidentally, designed around or otherwise centrally facilitated by digital technologies.

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

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

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

Yet on the other hand, digital humanists also worry that

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

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

On the other hand, clearly, the humanities suffer even more from seeming to be noninstrumental to the point of uselessness. In hard economic times (a real-life incident from my own experience), parents actually come up to chairs of English departments at graduation to complain that their daughter's humanities degree is only good for working at Starbucks.[17] The catch-22 is that the harder the humanities work to become research enterprises equipping students with specialized competencies and vocabularies, the more cut off they seem from practical use. This is particularly galling for post–May 1968 cultural critics, who addressed their advanced research methods to praxis but, if anything, reinforced the impression that humanist critique is only interpretive, reflective, politically marginal, skeptical, or nihilist—that is,

unrealpolitik.[18] Much of my own early work in cultural criticism (and also as an internal critic of the method) was devoted to exploring this and related problems—for example, in the essays on subversion collected in my *Local Transcendence: Essays on Postmodern Historicism and the Database*. As I put it, "what kind of movement is subversion anyway—the single action still allowed in a New Historicist universe become like a gigantic, too-quiet house within which, somewhere, in one of the walls, perhaps, insects chew?" (47).

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

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

To put it mildly, in sum, contemporary society is existentially uncomfortable about determination and its instrumental agencies. It may very well be that the concept of "culture" originally rose into prominence to make the problem of determination if not solvable then what Claude Lévi-Strauss, in a memorable phrase, called "good to think" (89). *Historismus* and *Geistesgeschichte* in the nineteenth century, for example, converged in a *Kulturgeschichte* (cultural history or history of civilization) whose metanarratives created the fiction of an equivocal middle ground between determination and free will. Humanity was constrained by natural, psychological, historical, and social forces; yet a will to be human, or *Geist,* nevertheless came to light through the cultural workings of those forces. A compelling recent example is the idea of corporate culture in the United States, which emerged after the 1970s in conjunction with the expansion of the so-called service industries, especially in the areas of "knowledge work." In the new service industries, men and women were imprisoned by global socioeconomic forces in little cubicles staring at even smaller cells in a spreadsheet. Corporate culture was an expression of that, since the idea was that strong corporations have totalizing cultures that determine (and are constantly reinforced by) everything from information technology practices to company slogans and social events. Yet paradoxically, corporate culture was also supposed to incubate in workers the spirit of "disruptive" innovation and entrepreneurship that is the mark of neoliberal freedom.[19] It's as if we all live in the universe of Iain M. Banks's richly imagined science fiction novels set in the universe of "the Culture," a sprawling galactic civilization that dominates in a totally distributed, decentralized, Western-liberal style at once wholly determinative and utterly laissez-faire in its encouragement of individual freedom.[20]

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

In particular, my recommendation for the digital humanities is two-fold: First, while continuing to concentrate on research and development in its core areas (e.g., text encoding, text analysis, pattern discovery, the creation of digital archives and resources), digital humanists should enter into fuller dia-

logue with the adjacent fields of new media studies and media archaeology so as to extend reflection on core instrumental technologies in cultural and historical directions. The time is long overdue for staging major conferences or programs designed specifically to put digital humanists in the same room, for example, with new media artists, hackers, and media theorists. In that room, standard issues in the digital humanities (such as "standards" themselves) could be enlarged with sociocultural meaning. Individuals working in the digital humanities, or who straddle fields, already increasingly engage in such dialogue. What is needed now is the elevation of the dialogue to the front and center of the discipline of the digital humanities.

Second, digital humanists should also enter into dialogue with science-technology studies. On reflection, it is remarkable how little the field draws on contemporary science-technology studies to enrich its discussion of tools, building, and instrumentality through new understandings of the way researchers, technicians, processes, communication media, and literal instruments come together in what Andrew Pickering calls the "mangle of practice" that is inextricably linked to society and culture. Science-technology studies by Lorraine Daston, Peter Galison, and Bruno Latour, for example, are canonical in this respect—for example, Daston and Galison's work on the history of changing ideals of "objectivity" (variously mediated by instruments and interpreters) and Latour's well-known melding of the concepts of human agency and machine instrumentality in "actor-network theory." Engaging with science-technology studies would help the digital humanities develop an understanding of instrumentalism—including that of its own methods—*as* a culture embedded in wider culture.[21]

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

Ultimately, the greatest service that the digital humanities can contribute to the humanities is to practice instrumentalism in a way that demonstrates the necessity of breaking down the artificial divide of the "two cultures" to show that the humanities are needed alongside the sciences to solve the intricately interwoven natural, technological, economic, social, political, *and* cultural problems of the global age. For example,

there is not a single "grand challenge" announced by the Obama Administration, the Grand Challenges in Global Health initiative, the U.S. National Academy of Engineering, and other agencies or foundations in the areas of energy, environment, biomedicine, food, water, education, and so on that does not require humanistic involvement.[23] All these issues have a necessary cultural dimension, whether as cause or effect; and all, therefore, need the public service of humanist and, increasingly, digital humanist participants.

Notes

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

1. Geoffrey Rockwell, Melissa Terras, and I cofounded 4Humanities in November 2010 with a collective of digital humanists located initially in Canada, the United Kingdom, and the United States (with other nations added later). The creation of the initiative was prompted by two discussion threads on the *Humanist* listserv in October 2010—one worrying that the digital humanities were too narrowly "industrialised" or technologically instrumental, the other discussing the severe budget cuts in the United Kingdom imposed by the then newly formed conservative-liberal democrat coalition government. (For the posts that started these threads, see, respectively, McCarty, "Industrialisation," and Prescott.)

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

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

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

is also aptly generic for cultural criticism of the digital age.

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

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

7. I concentrate here on the distant reading versus close reading issue in literary studies. However, I am aware that this has a somewhat distorting effect because the underlying issue of quantitative versus qualitative methods is older in other humanities fields and social science disciplines, with the result that recent digital technologies enter into play in those fields in a different methodological context. In historiography, for instance, the Annales movement brought distant reading and quantitative methods to the fore in the mid-twentieth century. One difference in the contemporary history field, therefore, is that the front line of recent digital history concerns such methods as geographic information systems (GIS) or social-network analysis that evolve quantitative methods further or differently (rather than redebate the first principles of the quantitative approach). The social sciences, of course, have long been familiar with the quantitative versus qualitative problem. (My thanks to Zephyr Frank for conversation on this topic in relation to history at the Digital Humanities 2011 conference at Stanford University. In regard to the social sciences, my thanks to Astrid Mager for excellent commentary on this issue from her perspective as a digital social scientist during the question and answer period after my talk at HUMlab on "Close, Distant, and Unexpected Reading.")

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

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

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

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

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

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

14. One of the main emphases in the article on culturomics by Michel and Lieberman Aiden et al. is that the study of language enabled by their ngram analysis of Google Books facilitates the study of culture generally. Some of their specific examples (such as censorship of names of

intellectuals in Nazi Germany) are closely analogous to humanities cultural criticism (181). Similarly, specific projects in "cultural analytics" at the University of California San Diego Software Studies Initiative include not just those that define culture in terms of aesthetic or media artifacts but also those that use the initiative's methods to study culture in a recognizably cultural-critical sense—e.g., projects on "2008 U.S. presidential campaign ads"; "visualizing art, industry, territory, and global economy in Brazil"; or "mapping 28 years of TV news" (Software Studies Initiative, "Projects").

15. To be fair, society's ever narrower focus on applied research threatens the STEM fields themselves, causing scientists to worry ever more about how to argue for the need for basic research. During 2009–2010, I led a subgroup (on research mission and principles) for the research strategies working group of the University of California Commission on the Future (UCOF, a body convened by the regents of the university to rethink the paradigm of the University of California in the face of systemic, long-term cuts in state funding). One of my takeaway lessons from that subgroup, which included scientists such as John Birely, University of California's associate vice president for laboratory management (who led our subgroup's work on a recommendation about basic research), is the extent to which the STEM fields are acutely sensitive to the need to defend the very idea of basic research. While only a part of the recommendations of the various working groups made it into the UCOF's *Final Report*, that report does contain the following defensive language about basic research: "It is also critical that federal support for research be sustained or even increased given that the federal government underwrites so much of the basic research conducted at U.S. research universities, laboratories and research organizations. Although the President's budget calls for a steady increase in the financing of research, due to pressure to reduce federal budgets, Congress may look for short-term monetary gains and neglect basic research and its long-term impact on economic health" (24).

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

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

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

19. For my extended analysis of the idea of corporate culture, see my

Laws of Cool, chap. 4.

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

21. In a manner analogous to science-technology studies, David M. Berry asks digital humanists to reflect on their own field as a culture. He writes that "to understand the contemporary born-digital culture and the everyday practices that populate it ...we need a corresponding focus on the computer code that is entangled with all aspects of our lives, including reflexivity about how much code is infiltrating the academy itself" (4). This means problematizing "the unspoken assumptions and ontological foundations which support the 'normal' research that humanities scholars undertake on an everyday basis" (4) and recognizing that "there is an undeniable cultural dimension to computation and the media affordances of software" (5). Ultimately, he reflects, the culture of the digital humanities may well scale up to the future evolution of academic culture generally: "we are beginning to see ...the cultural importance of the digital as the unifying idea of the university" (7).

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

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

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Why Are the Digital Humanities So White? or Thinking the Histories of Race and Computation

TARA MCPHERSON

In mid-October 2008, the American Studies Association (ASA) hosted its annual conference in Albuquerque, New Mexico. According to its website, the ASA "is the nation's oldest and largest association devoted to the interdisciplinary study of American culture and history." Over the past two decades, the ASA conference has emerged as a leading venue for vibrant discussions about race, ethnicity, transnationalism, gender, and sexuality. While the ASA represents scholars with a diverse array of methodological approaches from a variety of disciplines, the society is a welcome home to academics whose work is interpretative and theoretical. During the meeting, I attended a variety of panels engaging such issues and approaches and came away feeling energized and refreshed, my intellectual imagination stoked by the many ways in which race and ethnicity were wielded as central terms of analysis throughout the long weekend.

The following week, I was off to Baltimore where I attended "Tools for Data-Driven Scholarship," a workshop funded by the National Science Foundation (NSF), the National Endowment for the Humanities, and the Institute of Museum and Library Services. This invitation-only event was cohosted by George Mason University's Center for History and New Media (CHNM) and the Maryland Institute for Technology in the Humanities (MITH), two pioneering centers of what we have recently begun to call the "digital humanities." This workshop built upon several years' conversation (particularly following the 2003 NSF Atkins Report on cyberinfrastructure) about the need for a digital infrastructure for humanities computing. The goal of the workshop was defined in the e-mail invite as a report "that discusses the needs of tools developers and users; sets forth objectives for addressing those needs; proposes infrastructure for accomplishing these objectives; and makes suggestions for a possible RFP." This meeting was also lively, full of thoughtful discussions about the possibilities for (and obstacles in the way of) a robust infrastructure for scholars engaged in computation and the humanities. The conversation certainly

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fired up my technological imagination and subsequently led to useful discussions with my collaborators in technological design.[1]

As I flew home following this second event, I found myself reflecting on how far my thoughts had ranged in the course a mere week: from diaspora to database, from oppression to ontology, from visual studies to visualizations. And, once again, I found myself wondering why it seemed so hard to hold together my long-standing academic interests in race, gender, and certain modes of theoretical inquiry with my more recent (if decade-old) immersion in the world of digital production and design.

While the workshop I participated in at ASA was titled "American Studies at the Digital Crossroads" and drew a nice crowd, the conference as a whole included remarkably little discussion of digital technologies (although there were some analyses of digital texts such as websites and video games.)[2] It is largely accurate, if also a generalization, to say that many in the membership of the ASA treat computation within the humanities with some level of suspicion, perceiving it to be complicit with the corporatization of higher education or as primarily technological rather than scholarly.[3] (Indeed, this attitude is shared by a large number of "traditional" humanities scholars across any number of fields or professional societies who do not work with digital media.) In a hallway chat following our workshop, one scholar framed his dis-ease as a question: "Why are the digital humanities, well, so white?" And while my memory is far from perfect, I think it is safe to say that the Baltimore workshop included no discussion of many topics much in evidence at ASA, topics including immigration, race, and neoliberalism. To be fair, this was a workshop focused on the notion of tools and infrastructure, so one might not expect such discussions. Nonetheless, this essay will argue that we desperately need to close the gap between these two modes of inquiry. Further, I will argue that the difficulties we encounter in knitting together our discussions of race (or other modes of difference) with our technological productions within the digital humanities (or in our studies of code) are actually an *effect* of the very designs of our technological systems, designs that emerged in post–World War II computational culture. These origins of the digital continue to haunt our scholarly engagements with computers, underwriting the ease with which we partition off considerations of race in our work in the digital humanities and digital media studies.

U.S. Operating Systems at Midcentury: The Intertwining of Race and UNIX

Let us turn to two fragments cut from history, during the 1960s.

FRAGMENT ONE

In the early 1960s, computer scientists at MIT were working on Project MAC, an early set of experiments in Compatible Timesharing Systems for computing. By 1965, MULTICS (Multiplexed Information and Computing Service), a mainframe

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timesharing operating system, was in use, with joint development by MIT, GE, and Bell Labs, a subsidiary of AT&T. The project was funded by ARPA (Advanced Research Projects Agency) of the Defense Department for two million dollars a year for eight years. MULTICS introduced early ideas about modularity in hardware structure and software architecture.

In 1969, Bell Labs stopped working on MULTICS, and that summer one of their engineers, Ken Thompson, developed the beginning of UNIX. While there are clearly influences of MULTICS on UNIX, the later system also moves away from the earlier one, pushing for increased modularity and for a simpler design able to run on cheaper computers.

In simplest terms, UNIX is an early operating system for digital computers, one that has spawned many offshoots and clones. These include MAC OS X as well as LINUX, indicating the reach of UNIX over the past forty years. The system also influenced non-UNIX operating systems like Windows NT and remains in use by many corporate IT divisions. UNIX was originally written in assembly language, but after Thompson's colleague Dennis Ritchie developed the C programming language in 1972, Thompson rewrote UNIX in that language. Basic text-formatting and editing features were added (i.e., early word processors). In 1974, Ritchie and Thompson published their work in the journal of the *Association for Computing Machinery,* and UNIX began to pick up a good deal of steam.[4]

UNIX can also be thought of as more than an operating system, as it also includes a number of utilities such as command line editors, APIs, code libraries, and so on. Furthermore, UNIX is widely understood to embody particular philosophies and cultures of computation, "operating systems" of a larger order that we will return to.

FRAGMENT TWO

Of course, for scholars of culture, of gender, and of race like the members of the ASA, dates like 1965 and 1968 have other resonances. For many of us, 1965 might not recall MULTICS but instead the assassination of Malcolm X, the founding of the United Farm Workers, the burning of Watts, or the passage of the Voting Rights Act. The mid-1960s also saw the origins of the American Indian Movement (AIM) and the launch of the National Organization for Women (NOW). The late 1960s mark the 1968 citywide walkouts of Latino youth in Los Angeles, the assassinations of Martin Luther King Jr. and Robert F. Kennedy, the Chicago Democratic Convention, the Stonewall Riots, and the founding of the Black Panthers and the Young Lords. Beyond the geographies of the United States, we might also remember the Prague Spring of 1968, Tommie Smith and John Carlos at the Mexico Summer Olympics, the Tlatelolco Massacre, the execution of Che Guevara, the Chinese Cultural Revolution, the Six-Day War, or May '68 in Paris. On the African continent, thirty-two countries gained independence from colonial rulers. In the United

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States, broad cultural shifts emerged across the decade, as identity politics took root and countercultural forces challenged traditional values. Resistance to the Vietnam War mounted as the decade wore on. Abroad, movements against colonialism and oppression were notably strong.

The history just glossed as "Fragment One" is well known to code junkies and computer geeks. Numerous websites archive oral histories, programming manuals, and technical specifications for MULTICS, UNIX, and various mainframe and other hardware systems. Key players in that history, including Ken Thompson, Donald Ritchie, and Doug McIlroy, have a kind of geek-chic celebrity status, and differing versions of the histories of software and hardware development are hotly debated, including nitty-gritty details of what really counts as "a UNIX." In media studies, emerging work in "code studies" often resurrects and takes up these histories.[5]

Within American, cultural, and ethnic studies, the temporal touchstones of struggles over racial justice, antiwar activism, and legal history are also widely recognized and analyzed. Not surprisingly, these two fragments typically stand apart in parallel tracks, attracting the interest and attention of very different audiences located in the deeply siloed departments that categorize our universities.

But why?

In short, I suggest that these two moments are deeply interdependent. In fact, they coconstitute one another, comprising not independent slices of history but instead related and useful lenses into the shifting epistemological registers driving U.S. and global culture in the 1960s and after.

This history of intertwining and mutual dependence is hard to sketch. As one delves into the intricacies of UNIX (or of XML), race in America recedes far from our line of vision and inquiry. Likewise, detailed examinations into the shifting registers of race and racial visibility post-1950 do not easily lend themselves to observations about the emergence of object-oriented programming or the affordances of databases. Very few audiences who care about one lens have much patience or tolerance for the other.

Early forays into new media theory in the late 1990s and much concurrent work in the computational humanities rarely helped this problem. Theorists of new media often retreated into forms of analysis that Marsha Kinder has critiqued as "cyberstructuralist," intent on parsing media specificity and on theorizing the forms of new media while disavowing twenty-plus years of critical race theory, feminism, and other modes of overtly politicized inquiry. Much of the work in the digital humanities also proceeded as if technologies from XML to databases were neutral tools.[6] Many who had worked hard to instill race as a central mode of analysis in film, literary, and media studies throughout the late twentieth century were disheartened and outraged (if not that surprised) to find both new media theory and emerging digital tools seem indifferent to those hard-won gains.

Early analyses of race and the digital often took two forms: first, a critique of representations *in* new media or the building of digital archives about race, modes

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that largely were deployed at the surface of our screens, or, second, debates about access to media—that is, the digital divide. Such work rarely tied race to the analyses of form, phenomenology, or computation that were so compelling in the work of Lev Manovich, Mark Hansen, or Jay Bolter and Richard Grusin. Important works emerged from both "camps," but the camps rarely intersected. A few events attempted to force a collision between these areas, but the going was tough. For instance, at the two Race and Digital Space Conferences colleagues and I organized in 2000 and 2002, the vast majority of participants and speakers were engaged in work in the two modes mentioned earlier. The cyberstructuralists were not in attendance.

But what if this very incompatability is itself part and parcel of the organization of knowledge production that operating systems like UNIX helped to disseminate around the world? Might we ask whether there is not something *particular to the very forms* of electronic culture that seems to encourage just such a movement, a movement that partitions race off from the specificity of media forms? Put differently, might we argue that the very structures of digital computation develop at least in part to cordon off race and to contain it? Further, might we come to understand that our own critical methodologies are the heirs to this epistemological shift?

From early writings by Sherry Turkle and George Landow to more recent work by Alex Galloway and others, new media scholars have noted the parallels between the ways of knowing modeled in computer culture and the greatest hits of structuralism and poststructuralism. Critical race theorists and postcolonial scholars like Chela Sandoval and Gayatri Spivak have illustrated the structuring (if unacknowledged) role that race plays in the work of poststructuralists like Roland Barthes and Michel Foucault. We might bring these two arguments together, triangulating race, electronic culture, and poststructuralism, and, further, argue that race, particularly in the United States, is central to this undertaking, fundamentally shaping how we see and know as well as the technologies that underwrite or cement both vision and knowledge. Certain modes of racial visibility and knowing coincide or dovetail with specific ways of organizing data: if digital computing underwrites today's information economy and is the central technology of post–World War II America, these technologized ways of seeing and knowing took shape in a world also struggling with shifting knowledges about and representations of race. If, as Michael Omi and Howard Winant argue, racial formations serve as fundamental organizing principles of social relations in the United States, on both the macro and micro levels (55), how might we understand the infusion of racial organizing principles into the technological organization of knowledge after World War II?

Omi and Winant and other scholars have tracked the emergence of a "raceblind" rhetoric at midcentury, a discourse that moves from overt to more covert modes of racism and racial representation (e.g., from the era of Jim Crow to liberal colorblindness). Drawing from those 3-D postcards that bring two or more images together even while suppressing their connections, I have earlier termed the

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racial paradigms of the postwar era "lenticular logics." The ridged coating on 3-D postcards is actually a lenticular lens, a structural device that makes simultaneously viewing the various images contained on one card nearly impossible. The viewer can rotate the card to see any single image, but the lens itself makes seeing the images *together* very difficult, even as it conjoins them at a structural level (i.e., within the same card). In the post–civil rights United States, the lenticular is a way of organizing the world. It structures representations but also epistemologies. It also serves to secure our understandings of race in very narrow registers, fixating on sameness or difference while forestalling connection and interrelation. As I have argued elsewhere, we might think of the lenticular as a covert mode of the pretense of separate but equal, remixed for midcentury America (McPherson, 250).

A lenticular logic is a covert racial logic, a logic for the post–civil rights era. We might contrast the lenticular postcard to that wildly popular artifact of the industrial era, the stereoscope card. The stereoscope melds two different images into an imagined whole, privileging the whole; the lenticular image partitions and divides, privileging fragmentation. A lenticular logic is a logic of the fragment or the chunk, a way of seeing the world as discrete modules or nodes, a mode that suppresses relation and context. As such, the lenticular also manages and controls complexity.

And what in the world does this have to do with those engineers laboring away at Bell Labs, the heroes of the first fragment of history this essay began with? What's race got to do with that? The popularity of lenticular lenses, particularly in the form of postcards, coincides historically not just with the rise of an articulated movement for civil rights but also with the growth of electronic culture and the birth of digital computing (with both—digital computing and the civil rights movement—born in quite real ways of World War II). We might understand UNIX as the way in which the emerging logics of the lenticular and of the covert racism of color blindness get ported into our computational systems, both in terms of the specific functions of UNIX as an operating system and in the broader philosophy it embraces.

SITUATING UNIX

In moving toward UNIX from MULTICS, programmers conceptualized UNIX as a kind of tool kit of "synergistic parts" that allowed "flexibility in depth" (Raymond, 9). Programmers could "choose among multiple shells. . . . [and] programs normally provide[d] many behavior options" (6). One of the design philosophies driving UNIX is the notion that a program should do one thing and do it well (not unlike our deep disciplinary drive in many parts of the university); this privileging of the discrete, the local, and the specific emerges again and again in discussions of UNIX's origins and design philosophies.

Books for programmers that explain the UNIX philosophy revolve around a common set of rules. While slight variations on this rule set exist across programming books and online sites, Eric Raymond sets out the first nine rules as follows:

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1. Rule of Modularity: Write simple parts connected by clean interfaces.
2. Rule of Clarity: Clarity is better than cleverness.
3. Rule of Composition: Design programs to be connected to other programs.
4. Rule of Separation: Separate policy from mechanism; separate interfaces from engines.
5. Rule of Simplicity: Design for simplicity; add complexity only where you must.
6. Rule of Parsimony: Write a big program only when it is clear by demonstration that nothing else will do.
7. Rule of Transparency: Design for visibility to make inspection and debugging easier.
8. Rule of Robustness: Robustness is the child of transparency and simplicity.
9. Rule of Representation: Fold knowledge into data so program logic can be stupid and robust. (13)

Other rules include the Rules of Least Surprise, Silence, Repair, Economy, Generation, Optimization, Diversity, and Extensibility.[7]

These rules implicitly translate into computational terms the chunked logics of the lenticular. For instance, Brian Kernighan wrote in a 1976 handbook on software programming that "controlling complexity is the essence of computer programming" (quoted in Raymond, 14). Complexity in UNIX is controlled in part by the Rule of Modularity, which insists that code be constructed of discrete and interchangeable parts that can be plugged together via clean interfaces. In *Design Rules, Vol. 1: The Power of Modularity*, Carliss Baldwin and Kim Clark argue that computers from 1940 to 1960 had "complex, interdependent designs," and they label this era the "premodular" phase of computing (149). While individuals within the industry, including John von Neumann, were beginning to imagine benefits to modularity in computing, Baldwin and Clark note that von Neumann's ground-breaking designs for computers in that period "fell short of true modularity" because "in no sense was the detailed design of one component going to be hidden from the others: all pieces of the system would be produced 'in full view' of the others" (157). Thus one might say that these early visions of digital computers were neither modular nor lenticular. Baldwin and Clark track the increasing modularity of hardware design from the early 1950s forward and also observe that UNIX was the first operating system to embrace modularity and adhere "to the principles of information hiding" in its design (324).

There are clearly practical advantages of such structures for coding, but they also underscore a worldview in which a troublesome part might be discarded without disrupting the whole. Tools are meant to be "encapsulated" to avoid "a tendency to involve programs with each others' internals" (Raymond, 15). Modules "don't promiscuously share global data," and problems can stay "local" (84–85). In writing about the Rule of Composition, Eric Raymond advises programmers to "make

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[programs] independent." He writes, "It should be easy to replace one end with a completely different implementation without disturbing the other" (15). Detachment is valued because it allows a cleaving from "the particular . . . conditions under which a design problem was posed. Abstract. Simplify. Generalize" (95). While "generalization" in UNIX has specific meanings, we might also see at work here the basic contours of a lenticular approach to the world, an approach that separates object from context, cause from effect.

In a 1976 article, "Software Tools," Bell Lab programmers Kernighan and P. J. Plauger urged programmers "to view specific jobs as special cases of general, frequently performed operations, so they can make and use general-purpose tools to solve them. We also hope to show how to design programs to look like tools and to interconnect conveniently" (1). While the language here is one of generality (as in "general purpose" tools), in fact, the tool library that is being envisioned is a series of very discrete and specific tools or programs that can operate independently of one another. They continue, "Ideally, a program should not know where its input comes from nor where its output goes. The UNIX time-sharing system provides a particularly elegant way to handle input and output redirection" (2). Programs can profitably be described as filters, even though they do quite complicated transformations on their input. One should be able to say

```
program-1 . . . | sort | program-2 . . .
```

and have the output of program-1 sorted before being passed to program-2. This has the major advantage that neither program-1 nor program-2 need know how to sort, but can concentrate on its main task (4).

In effect, the tools chunk computational programs into isolated bits where the programs' operations are meant to be "invisible to the user" and to the other programs in a sequence: "the point is that this operation is invisible to the user (or should be). . . . Instead he sees simply a program with one input and one output. Unsorted data go in one end; somewhat later, sorted data come out the other. It must be *convenient* to use a tool, not just possible" (5). Kernighan and Plauger saw the "filter concept" as a useful way to get programmers to think in discrete bits and to simplify their code, reducing the potential complexity of programs. They note that "when a job is viewed as a series of filters, the implementation simplifies, for it is broken down into a sequence of relatively independent pieces, each small and easily tested. This is a form of high-level modularization" (5). In their own way, these filters function as a kind of lenticular frame or lens, allowing only certain portions of complex data sets to be visible at a particular time to both the user and the machine.

The technical feature that allowed UNIX to achieve much of its modularity was the development by Ken Thompson (based on a suggestion by Doug McIlroy) of the pipe—that is, a vertical bar that replaced the symbol for greater than (>) in the operating system's code. As described by Doug Ritchie and Ken Thompson in a paper for

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the Association of Computing Machinery in 1974 (reprinted by Bell Labs in 1978), "A *read* using a pipe file descriptor waits until another process writes using the file descriptor for the same pipe. At this point, data are passed between the images of the two processes. Neither process need know that a pipe, rather than an ordinary file, is involved" (480). In this way, the ability to construct a pipeline from a series of small programs evolved, while the "hiding of internals" was also supported. The contents of a module were not central to the functioning of the pipeline; rather, the input or output (a text stream) was key. Brian Kernighan noted "that while input/output direction predates pipes, the development of pipes led to the concept of tools—software programs that would be in a 'tool box,' available when you need them" and interchangeable.[8] Pipes reduced complexity and were also linear. In "Software Tools," Kernighan and Plauger extend their discussion of pipes, noting that "a pipe provides a hidden buffering between the output of one program and the input of another program so information may pass between them without ever entering the file system" (2). They also signal the importance of pipes for issues of data security:

> And consider the sequence
>
> decrypt key <file | prog | encrypt key > newfile
>
> Here a decryption program decodes an encrypted file, passing the decoded characters to a program having no special security features. The ouput of the program is re-encrypted at the other end. If a true pipe mechanism is used, no clear-text version of the data will ever appear in a file. To simulate this sequence with temporary files risks breaching security. (3)

While the affordances of filters, pipes, and hidden data are often talked about as a matter of simple standardization and efficiency (as when Kernighan and Plauger argue that "our emphasis here has been on getting jobs done with an efficient use of people" [6]), they also clearly work in the service of new regimes of security, not an insignificant detail in the context of the cold war era. Programming manuals and UNIX guides again and again stress clarity and simplicity (don't write fancy code; say what you mean as clearly and directly as you can), but the structures of operating systems like UNIX function by hiding internal operations, skewing "clarity" in very particular directions. These manuals privilege a programmer's equivalent of common sense in the Gramscian sense. For Antonio Gramsci, common sense is a historically situated process, the way in which a particular group responds to "certain problems posed by reality which are quite specific" at a particular time (324). As programmers constituted themselves as a particular class of workers in the 1970s, they were necessarily lodged in their moment, deploying common sense and notions about simplicity to justify their innovations in code. Importantly, and as we will see, this moment is overdetermined by the ways in which the United States is widely coming to process race and other forms of difference in more covert registers,

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as noted earlier, even if the programmers themselves do not explicitly understand their work to be tied to such racial paradigms.[9]

Another rule of UNIX is the Rule of Diversity, which insists on a mistrust of the "one true way." Thus UNIX, in the words of one account, "embraces multiple languages, open extensible systems and customization hooks everywhere," reading much like a description of the tenets of neoliberal multiculturalism (Raymond, 24). Certain words emerge again and again throughout the ample literature on UNIX: modularity, compactness, simplicity, orthogonality. UNIX is meant to allow multitasking, portability, time sharing, and compartmentalizing. It is not much of a stretch to layer these traits over the core tenets of post-Fordism, a mode of production that begins to remake industrial-era notions of standardization in the 1960s: time-space compression, transformability, customization, a public/private blur, and so on. UNIX's intense modularity and information-hiding capacity were reinforced by its design—that is, in the ways in which it segregated the kernel from the shell. The kernel loads into the computer's memory at start-up and is "the heart" of UNIX (managing "hardware memory, job execution, and time sharing"), although it remains hidden from the user (Baldwin and Clark, 332). The shells (or programs that interpret commands) are intermediaries between the user and the computer's inner workings. They hide the details of the operating system from the user behind "the shell," extending modularity from a rule for programming in UNIX to the very design of UNIX itself.[10]

Modularity in the Social Field

This push toward modularity and the covert in digital computation also reflects other changes in the organization of social life in the United States by the 1960s. For instance, if the first half of the twentieth century laid bare its racial logics, from "Whites Only" signage to the brutalities of lynching, the second half increasingly hides its racial "kernel," burying it below a shell of neoliberal pluralism. These covert racial logics take hold at the tail end of the civil rights movement at least partially to cut off and contain the more radical logics implicit in the urban uprisings that shook Detroit, Watts, Chicago, and Newark. In fact, the urban center of Detroit was more segregated by the 1980s than in previous decades, reflecting a different inflection of the programmer's vision of the "easy removal" or containment of a troubling part. Whole areas of the city might be rendered orthogonal and disposable (also think post-Katrina New Orleans), and the urban black poor were increasingly isolated in "deteriorating city centers" (Sugrue, 198). Historian Thomas Sugrue traces the increasing unemployment rates for black men in Detroit, rates that rose dramatically from the 1950s to the 1980s, and maps a "deproletarianization" that "shaped a pattern of poverty in the postwar city that was surprisingly new" (262). Across several registers, the emerging neoliberal state begins to adopt the Rule of Modularity. For instance, we might draw an example from across the Atlantic. In

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her careful analysis of the effects of May 1968 and its afterlives, Kristin Ross argues that the French government contained the radical force of the uprisings by quickly moving to separate the students' rebellion from the concerns of labor, deploying a strategy of separation and containment in which both sides (students and labor) would ultimately lose (69).

Modularity in software design was meant to decrease "global complexity" and cleanly separate one "neighbor" from another (Raymond, 85). These strategies also played out in ongoing reorganizations of the political field throughout the 1960s and 1970s in both the Right and the Left. The widespread divestiture in the infrastructure of inner cities can be seen as one more insidious effect of the logic of modularity in the postwar era. But we might also understand the emergence of identity politics in the 1960s as a kind of social and political embrace of modularity and encapsulation, a mode of partitioning that turned away from the broader forms of alliance-based and globally inflected political practice that characterized both labor politics and antiracist organizing in the 1930s and 1940s.[11] While identity politics produced concrete gains in the world, particularly in terms of civil rights, we are also now coming to understand the degree to which these movements curtailed and short-circuited more radical forms of political praxis, reducing struggle to fairly discrete parameters.

Let me be clear. By drawing analogies between shifting racial and political formations and the emerging structures of digital computing in the late 1960s, I am not arguing that the programmers creating UNIX at Bell Labs and in Berkeley were *consciously* encoding new modes of racism and racial understanding into digital systems. (Indeed, many of these programmers were themselves left-leaning hippies, and the overlaps between the counterculture and early computing culture run deep, as Fred Turner has illustrated.) I also recognize that their innovations made possible the word processor I am using to write this article, a powerful tool that shapes cognition and scholarship in precise ways. Nor am I arguing for some exact correspondence between the ways in which encapsulation or modularity work in computation and how they function in the emerging regimes of neoliberalism, governmentality, and post-Fordism. Rather, I am highlighting the ways in which the organization of information and capital in the 1960s powerfully responds—across many registers—to the struggles for racial justice and democracy that so categorized the United States at the time. Many of these shifts were enacted in the name of liberalism, aimed at distancing the overt racism of the past even as they contained and cordoned off progressive radicalism. The emergence of covert racism and its rhetoric of color blindness are not so much intentional as systemic. Computation is a primary delivery method of these new systems, and it seems at best naive to imagine that cultural and computational operating systems don't mutually infect one another.

Thus we see modularity take hold not only in computation but also in the increasingly niched and regimented production of knowledge in the university after World War II. For instance, Christopher Newfield comments on the rise of New

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Criticism in literature departments in the cold war era, noting its relentless formalism, a "logical corollary" to "depoliticization" (145) that "replaced agency with technique" (155). He attributes this particular tendency in literary criticism at least in part to the triumph of a managerial impulse, a turn that we might also align (even if Newfield doesn't) with the workings of modular code (itself studied as an exemplary approach to dynamic modeling systems for business management in the work of Baldwin and Clark cited earlier.)[12] He observes as well that this managerial obsession within literary criticism exhibits a surprising continuity across the 1960s and beyond. Gerald Graff has also examined the "patterned isolation" that emerges in the university after World War II, at the moment when New Criticism's methods take hold in a manner that deprivileges context and focuses on "explication for explication's sake." Graff then analyzes the routinization of literary criticism in the period, a mechanistic exercise with input and output streams of its own (227). He recognizes that university departments (his example is English) begin to operate by a field-based and modular strategy of "coverage," in which subfields proliferate and exist in their own separate chunks of knowledge, rarely contaminated by one another's "internals" (250). (He also comments that this modular strategy includes the token hiring of scholars of color who are then cordoned off within the department.) Graff locates the beginning of this patterned isolation in the run-up to the period that also brought us digital computing; he writes that it continues to play out today in disciplinary structures that have become increasingly narrow and specialized. Patterned isolation begins with the bureaucratic standardization of the university from 1890 through 1930 (61–62), but this "cut out and separate" mentality reaches a new crescendo after World War II as the organizational structure of the university pushes from simply bureaucratic and Taylorist to managerial, a shift noted as well by Christopher Newfield. Many now lament the overspecialization of the university; in effect, this tendency is a result of the additive logic of the lenticular or of the pipeline, where "content areas" or "fields" are tacked together without any sense of intersection, context, or relation. Today, we risk adding the digital humanities to our proliferating disciplinary menus without any meaningful and substantial engagement with fields such as gender studies or critical race theory.

It is interesting to note that much of the early work performed in UNIX environments was focused on document processing and communication tools and that UNIX is a computational system that very much privileges text (it centers on the text-based command line instead of on the graphical user interface, and its inputs and outputs are simple text lines). Many of the methodologies of the humanities from the cold war through the 1980s also privilege text while devaluing context and operate in their own chunked systems, suggesting telling parallels between the operating systems and privileged objects of the humanities and of the computers being developed on several university campuses in the same period.

Lev Manovich has, of course, noted the modularity of the digital era and also backtracked to early twentieth-century examples of modularity from the factory

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line to the creative productions of avant garde artists. In a posting to the Nettime listserv in 2005, he frames modularity as a uniquely twentieth-century phenomenon, from Henry Ford's assembly lines to the 1932 furniture designs of Belgian designer Louis Herman De Kornick. In his account, the twentieth century is characterized by an accelerating process of industrial modularization, but I think it is useful to examine the digital computer's privileged role in the process, particularly given that competing modes of computation were still quite viable until the 1960s, modes that might have pushed more toward the continuous flows of analog computing rather than the discrete tics of the digital computer. Is the modularity of the 1920s really the same as the modularity modeled in UNIX? Do these differences matter, and what might we miss if we assume a smooth and teleological triumph of modularity? How has computation pushed modularity in new directions, directions in dialogue with other cultural shifts and ruptures? Why does modularity emerge in our systems with such a vengeance across the 1960s?

I have here suggested that our technological formations are deeply bound up with our racial formations and that each undergo profound changes at midcentury. I am not so much arguing that one mode is causally related to the other but, rather, that they both represent a move toward modular knowledges, knowledges increasingly prevalent in the second half of the twentieth century. These knowledges support and enable the shift from the overt standardized bureaucracies of the 1920s and 1930s to the more dynamically modular and covert managerial systems that are increasingly prevalent as the century wears on. These latter modes of knowledge production and organization are powerful racial and technological operating systems that coincide with (and reinforce) (post)structuralist approaches to the world within the academy. Both the computer and the lenticular lens mediate images and objects, changing their relationship but frequently suppressing that process of relation, much like the divided departments of the contemporary university. The fragmentary knowledges encouraged by many forms and experiences of the digital neatly parallel the logics that underwrite the covert racism endemic to our times, operating in potential feedback loops, supporting each other. If scholars of race have highlighted how certain tendencies within poststructuralist theory simultaneously respond to and marginalize race, this maneuver is at least partially possible because of a parallel and increasing dispersion of electronic forms across culture, forms that simultaneously enact and shape these new modes of thinking.

While the examples here have focused on UNIX, it is important to recognize that the core principles of modularity that it helped bring into practice continue to impact a wide range of digital computation, especially the C programming language, itself developed for UNIX by Ritchie, based on Thompson's earlier B language. While UNIX and C devotees will bemoan the nonorthogonality and leakiness of Windows or rant about the complexity of C++, the basic argument offered earlier—that UNIX helped inaugurate modular and lenticular systems broadly

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across computation and culture—holds true for the black boxes of contemporary coding and numerous other instances of our digital praxis.

Today, we might see contemporary turns in computing—neural nets, clouds, semantics, and so on—as parallel to recent turns in humanities scholarship to privilege networks over nodes (particularly in new media studies and in digital culture theory) and to focus on globalization and its flows (in American studies and other disciplines). While this may simply mean we have learned our midcentury lessons and are smarter now, we might also continue to examine with rigor and detail the degree to which dominant forms of computation—what David Golumbia has aptly called "the cultural logic of computation" in his recent update of Frankfurt School pessimism for the twenty-first century—continue to respond to shifting racial and cultural formations. Might these emerging modes of computation be read as symptoms and drivers of our postracial moment, refracting in some way national anxieties (or hopes) about a decreasingly white America? We should also remain alert to how contemporary technoracial formations infect privileged ways of knowing in the academy. While both the tales of C. P. Snow circa 1959 and the Sokal science wars of the 1990s sustain the myth that science and the humanities operate in distinct realms of knowing, powerful operating systems have surged beneath the surface of what and how we know in the academy for well over half a decade. It would be foolish of us to believe that these operating systems—in this paper best categorized by UNIX and its many close siblings—do not at least partially overdetermine the very critiques we imagine that we are performing today.

Moving Beyond Our Boxes

So if we are always already complicit with the machine, what are we to do?

First, we must better understand the machines and networks that continue to powerfully shape our lives in ways that we are often ill equipped to deal with as media and humanities scholars. This necessarily involves more than simply studying our screens and the images that dance across them, moving beyond the study of representations and the rhetorics of visuality. We might read representations seeking symptoms of information capital's fault lines and successes, but we cannot read the logics of these systems and networks solely at the level of our screens. Capital is now fully organized under the sign of modularity. It operates via the algorithm and the database, via simulation and processing. Our screens are cover stories, disguising deeply divided forms of both machine and human labor. We focus exclusively on them increasingly to our peril.

Scholars in the digital humanities and in the emerging field of code studies are taking up the challenge of understanding how computational systems (especially but not only software) developed and operate. However, we must demand that these fields not replay the formalist and structuralist tendencies of new media theory circa 1998. This formalist turn displayed a stubborn technological determinism

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and often privileged the machine over the social. To end run such determinism, the digital humanities and code studies must also take up the questions of culture and meaning that animate so many scholars of race in fields like the *new* American studies. Likewise, scholars of race must analyze, use, and produce digital forms and not smugly assume that to engage the digital directly is to be complicit with the forces of capitalism. The lack of intellectual generosity across our fields and departments only reinforces the divide-and-conquer mentality that the most dangerous aspects of modularity underwrite. We must develop common languages that link the study of code and culture. We must historicize and politicize code studies. And, because digital media were born as much of the civil rights era as of the cold war era (and of course these eras are one and the same), our investigations must incorporate race from the outset, understanding and theorizing its function as a ghost in the digital machine. This does not mean that we should simply add race to our analysis in a modular way, neatly tacking it on or building digital archives of racial material, but that we must understand and theorize the deep imbrications of race and digital technology even when our objects of analysis (say UNIX or search engines) seem not to be about race at all. This will not be easy. In the writing of this essay, the logic of modularity continually threatened to take hold, leading me into detailed explorations of pipe structures in UNIX or departmental structures in the university, taking me far from the contours of race at midcentury. It is hard work to hold race and computation together in a systemic manner, but it is work that we must continue to undertake.

We also need to take seriously the possibility that questions of representation and of narrative and textual analysis may, in effect, divert us from studying the reorganization of capital—a reorganization dependent on the triumph of the very particular patterns of informationalization evident in code. If the study of representation may in fact be part and parcel of the very logic of modularity that such code inaugurates, a kind of distraction, it is equally plausible to argue that our very intense focus on visuality in the past twenty years of scholarship is just a different manifestation of the same distraction. There is tendency in film and media studies to treat the computer and its screens as (in Jonathan Beller's terms) a "legacy" technology to cinema. In its drive to stage continuities, such an argument tends to minimize or completely miss the fundamental material differences between cinematic visuality and the production of the visual by digital technologies. For most of the twentieth century, cinema was a profoundly visual (if also aural) form, with images etched into celluloid; the digital does not depend on vision in any analogous way.

To push my polemic to its furthest dimensions, I would argue that to study image, narrative, and visuality will never be enough if we do not engage as well the nonvisual dimensions of code and their organization of the world. Yet to trouble my own polemic, we might also understand the workings of code to have already internalized the visual to the extent that, in the heart of the labs from which UNIX

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emerged, the cultural processing of the visual via the register of race was already at work in the machine.

In extending our critical methodologies, we must have at least a passing familiarity with code languages, operating systems, algorithmic thinking, and systems design. We need database literacies, algorithmic literacies, computational literacies, interface literacies. We need new hybrid practitioners: artist-theorists, programming humanists, activist-scholars; theoretical archivists, critical race coders. We need new forms of graduate and undergraduate education that hone both critical and digital literacies. We have to shake ourselves out of our small, field-based boxes so that we might take seriously the possibility that our own knowledge practices are normalized, modular, and black boxed in much the same way as the code we study in our work. That is, our very scholarly practices tend to undervalue broad contexts, meaningful relation, and promiscuous border crossing. While many of us identify as interdisciplinary, very few of us extend that border crossing very far (theorists tune out the technical; the technologists are impatient of the abstract; scholars of race mock the computational, seeing it as corrupt). The intense narrowing of our academic specialties over the past fifty years can actually be seen as an effect of or as complicit with the logics of modularity and the relational database. Just as the relational database works by normalizing data—that is, by stripping it of meaningful, idiosyncratic context, creating a system of interchangeable equivalencies—our own scholarly practices tend to exist in relatively hermetically sealed boxes or nodes. Critical theory and poststructuralism have been powerful operating systems that have served us well; they were as hard to learn as the complex structures of C++, and we have dutifully learned them. They are also software systems in desperate need of updating and patching. They are lovely, and they are not enough. They cannot be all we do, but that is not to say that they are not of any value.

In universities that simply shut down "old school" departments—like at my university, German and geography; in the UK, Middlesex's philosophy program; in Arizona, perhaps all of ethnic studies; in Albany, anything they can—scholars must engage the vernacular digital forms that make us nervous, *authoring* in them in order to better understand them and to recreate in technological spaces the possibility of doing the work that moves us. We need new practices and new modes of collaboration; we need to be literate in emerging scientific and technological methodologies but also in theories of race, globalization, and gender. We'll gain that literacy at least partially through an intellectual generosity or curiosity toward colleagues whose practices are not our own. We need to privilege systemic modes of thinking that can understand relation and honor complexity, even while valuing precision and specificity. We need nimbler ways of linking the network and the node and digital form and content, and we need to understand that categories like race profoundly shape both form *and* content. In short, we need a good deal more exchange between the ASA and the digital humanities so that we might develop

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some shared languages and goals. We must take seriously the question, why are the digital humanities so white? but also ask why American studies is not more digital.

We must remember that computers are themselves encoders of culture. If, in the 1960s and 1970s, UNIX hardwired an emerging system of covert racism into our mainframes and our minds, then computation responds to culture as much as it controls it. Code and race are deeply intertwined, even as the structures of code labor to disavow these very connections.[13] Politically committed academics with humanities skill sets must engage technology and its production not simply as an object of our scorn, critique, or fascination but as a productive and generative space that is always emergent and never fully determined.

NOTES

1. For the past decade, I have had the privilege to work with a team of collaborators on a variety of digital projects, including the online journal *Vectors* and a new authoring platform Scalar. In Los Angeles, this team includes Steve Anderson, Craig Dietrich, and Erik Loyer (and, until recently, Raegan Kelly), among others, and it is impossible to overstate how thoroughly I have been reconfigured by the opportunity to interact with such smart and congenial people. Conversations over the years (including at the Baltimore summit) with the broader DH community have deeply shaped our approach to developing computational systems for the humanities.
This essay is a revised version of a piece originally written for *Race after the Internet,* edited by Peter Chow-White and Lisa Nakamura, forthcoming from Routledge. Feedback from Neil Fraistat, Matt Gold, David Golumbia, and Steve Ramsay helped sharpen the piece for this volume.

2. This panel was organized by Glenn Hendler and Bruce Burgett, both of whom have worked quite tirelessly to engage the ASA community in conversations about the digital humanities. In addition to the three of us, Randy Bass, Sharon Daniel, Deborah Kimmey, and Curtis Marez were also on the panel. Tim Powell had been on the original program but was unable to attend.

3. These tensions between traditional humanities scholars and computational humanists are, of course, not new. For examples of these dynamics within early waves of humanities computing, see Thomas, "Computing and the Historical Imagination," and Craig, "Stylistic Analysis and Authorship Studies." As these authors note from within the realms of authorship studies and historical studies, these tensions often played out over the differences between quantitative and qualitative analysis and via debates on the status and validity of various modes of interpretation. Two readers (Golumbia and Ramsay) of this piece during the volume's semiopen peer review process expressed discomfort with the use of the term "traditional" to describe humanities scholars who don't consider themselves DHers. I share that discomfort, particularly since the word "traditional" seems to imply conservative, not a term many would associate with the ASA today, at least in a

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political sense. Instead, I mean the term simply to signal scholars in the humanities whose methodologies are not primarily dependent on digital analysis, platforms, or tools.

4. UNIX develops with some rapidity at least in part because the parent company of Bell Labs, AT&T, was unable to enter the computer business due to a 1958 consent decree. Eric Raymond notes that "Bell Labs was required to license its nontelephone technology to anyone who asked" (33). Thus a kind of counterculture chic developed around UNIX. Raymond provides a narrative version of this history, including the eventual UNIX wars, in his *The Art of UNIX Programming*. His account, while thorough, tends to romanticize the collaborative culture around UNIX. For a more objective analysis of the imbrications of the counterculture and early computing cultures, see Fred Turner's *From Counterculture to Cyberculture*. See also Tom Streeter for a consideration of liberal individualism and computing cultures.

5. Critical code studies (and software studies more generally) take up the study of computational systems in a variety of ways. For an overview of software studies, see Fuller. For emerging work in critical code studies, see the proceedings of the 2010 conference on Critical Code Studies, archived at http://vectorsjournal.org/thoughtmesh/critcode.

6. Some scholars have questioned the neutral status of digital structures such as code and databases. John Unsworth has situated UNIX as a Western cultural formation, arguing that "UNIX is deeply indebted to culturally determined notions such as private property, class membership, and hierarchies of power and effectivity. Most of these ideas are older than the modern Western culture that produced UNIX, but the constellation of cultural elements gathered together in UNIX's basic operating principles seems particularly Western and capitalist—not surprisingly, given that its creators were human extensions of one of the largest accumulations of capital in the Western world" (142). See also David Golumbia's observations on the limits of the database and of semantic computing for humanities analysis, as well as work on culturally contextual databases and ontologies undertaken by Kimberly Christen and Ramesh Srinivasan. Golumbia has further argued that object-oriented programming privileges categorization and hierarchies in a manner that has "much more to do with engineering presumptions and ideologies than with computational efficiency" (209). His work is a must read for anyone caught up in utopian readings of digital culture's empowering and participatory aspects.

7. In comments on a draft of this essay, Steve Ramsay suggested that Mike Gancarz's *The Unix Philosophy* categorizes UNIX via a related but different rule set. His rule set (4–5) is as follows:

1. Small is beautiful.
2. Make each program do one thing well.
3. Build a prototype as soon as possible.
4. Choose portability over efficiency.
5. Store data in flat text files.
6. Use software leverage to your advantage.
7. Use shell scripts to increase leverage and portability.

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8. Avoid captive user interfaces.
9. Make every program a filter.

Both Raymond and Gancarz privilege many of the same elements, including modularity, portability, and a certain notion of simplicity. See, for example, Gancarz's discussion of code modules and pipes (116).

8. This quote from Kernighan is from "The Creation of the UNIX Operating System" on the Bell Labs website. See http://www.bell-labs.com/history/unix/philosophy.html.

9. For Gramsci, "common sense" is a multilayered phenomenon that can serve both dominant groups and oppressed ones. For oppressed groups, common sense may allow a method of speaking back to power and of rejiggering what counts as sensible. Kara Keeling profitably explores this possibility in her work on the black femme. Computer programmers in the 1970s are interestingly situated. They are on the one hand a subculture (often overlapping with the counterculture), but they are also part of an increasingly managerial class that will help society transition to regimes of neoliberalism and governmentality. Their dreams of libraries of code may be democratic in impulse, but they also increasingly support postindustrial forms of labor.

10. Other aspects of UNIX also encode "chunking," including the concept of the file. For a discussion of files in UNIX, see *You Are Not a Gadget* by Jaron Lanier. This account of UNIX, among other things, also argues that code and culture exist in complex feedback loops.

11. See, for instance, Patricia Sullivan's *Days of Hope* for an account of the coalition politics of the South in the 1930s and 1940s that briefly brought together antiracist activists, labor organizers, and members of the Communist Party. Such a broad alliance became increasingly difficult to sustain after the Red Scare. I would argue that a broad cultural turn to modularity and encapsulation was both a response to these earlier political alliances and a way to short circuit their viability in the 1960s. My *Reconstructing Dixie* examines the ways in which a lenticular logic infects both identity politics and the politics of difference, making productive alliance and relationality hard to achieve in either paradigm.

12. To be fair, Newfield also explores a more radical impulse in literary study in the period, evident in the likes of (surprisingly) both Harold Bloom and Raymond Williams. This impulse valued literature precisely in its ability to offer an "unmanaged exploration of experience" (152).

13. There is no smoking gun that can unequivocally prove a one-to-one equation between shifting parameters of racial representation and racism and the emergence of UNIX as a very particular development in the history of computing, one that was neither necessary nor inevitable. Such proof is not my goal here. Rather, this essay asks why the midcentury turn to modularity was so deeply compelling and so widely dispersed, from urban planning to operating systems; I argue that in the United States this reorganization cannot be understood without taking into account the ways in which the nation responded to the civil rights movement. Of course, race is not the only axis of difference

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driving cultural change at this moment; how we understand the politics of gender and sexuality are also changing and are important to consider in relation to this essay's broad argument. In fact, we might understand the emergence of identity politics throughout the 1960s and 1970s as part of this very logic of modularity. But I would maintain that two broad things are true. First, society is reorganizing due to pressures within the political field (i.e., due to social movements), and that race is a particularly important vector in this reorganization. Second, all technological change is deeply situated within cultural forces, and, thus, the development of UNIX needs to be read in relation to these changes even if the relationship is not one of strict linear causality. It has been interesting to note that, when presenting this work in various venues, scholars of race typically get the argument, while others are sometimes more resistant. I would suggest that perhaps this very resistance might itself be an after effect of the triumph of modularity in the contemporary academy.

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35
Gendering Digital Literary History: What Counts for Digital Humanities

Laura C. Mandell

> In many cutting-edge critical discourses – e.g., globalization theory – the speed with which women can drop off the map takes my breath away.
>
> (Susan Friedman, in Cvetkovich *et al.*, 2010:242)

Ever since Anne Snitow's "A Gender Diary" was published in 1990, we have noticed that feminist activists confront numerous double-binds and paradoxes. In the forum discussing whether the term "woman" can be used "as a sponsoring category" from which the epigraph comes, Susan Friedman uncovers such a double-bind with which I'll grapple here. In order to be published in print, the forum concluded, a feminist critique cannot pose as a recovery project alone, but instead must address multiple discourses. That is, as to "what counts" (per the title of this chapter), one needs to count higher, adding to the numbers of minorities addressed and theoretical approaches deployed. However, the minute one adds other critical discourses to feminism, women tend to disappear from the discussion, rendering recovery projects even more necessary. To repeat Freidman's insight once again, women stop counting as significant so easily that "it takes [your] breath away" (Cvetkovich *et al.*, 2010:242).

Two principles inform my analysis of the problem of the disappearance of women writers from systems of valuation via paradoxical necessity. First, an approach that is beneficially required of any literary criticism is what N. Katherine Hayles named "media-specific analysis, … a kind of criticism that pays attention to the material apparatus producing the literary work as a physical artifact":

> Lulled into somnolence by five hundred years of print, literary studies have been slow to wake up to the importance of MSA. Literary criticism and theory are shot through with unrecognized assumptions specific to print. Only now, as the new medium of electronic textuality vibrantly asserts its presence, are these assumptions clearly coming into view.
>
> (Hayles, 2002:29–30)

My second principle is that, while new media make it possible for these "unrecognized assumptions" stemming from print culture to come into view, gender analysis makes them salient. That is, print culture has absorbed and materialized earlier forms of misogyny, putting it to its own uses, so that combining feminist with media-specific analysis can provide a powerful tool for analyzing our own "somnolence" in order to wakefully invent digital forms.

After showing that women writers are being recovered and forgotten in cycles, both in print and potentially in digital media, I will investigate how print media obfuscated itself as a medium, pretending to transfer intentions from one mind to another, once and for all, by deploying the figure of woman as a scapegoat for the material, ephemeral, and historically imbricated. Next, I'll examine two digital projects that are aimed at recovering women writers which do more than give us new content: they perform structural work, attempting to combat that paradoxical feminist necessity to produce a high count of women writers while simultaneously valuing them individually. Finally, I'll argue for the thick contextualization of women writers even amidst the push to analyze big data, but will also add my hope that feminists make major interventions in data mining and topic modeling. Taken as a whole, this chapter demonstrates that feminist digital literary history needs to perform media as well as gender analysis, as called for by Susan Brown and colleagues (2006:320).

Cycles of forgetting

In 1989, Roger Lonsdale published his Oxford collection, *Eighteenth-Century Women's Poetry*, introducing it by not only remarking how little

was known among English professors about the topic, but also pointing to an earlier moment, the end of the eighteenth century, when there were so many publishing women poets that no one thought they would ever disappear from our literary purview:

> Reviewing [one of over thirty collections] of verse [written by women in the 1790s], Ralph Griffiths … felt able to [pronounce,] "it is no longer a question, whether woman *is* or *is not* inferior to man in natural ability, or less capable of excelling in mental accomplishments."
>
> (*Monthly Review*, 1798, quoted in Lonsdale, 1989:xxi)

"In retrospect," Lonsdale adds, "Griffith's complacency … must seem ludicrously unjustified. … Anyone admitting to an interest in eighteenth-century women poets will soon learn to live with the politely sceptical question, 'Were there any?'" (Lonsdale, 1989:xxi). Despite the fact that there were hundreds of them – the Cardiff Corvey Women Writers on the Web database lists 1065 works by women published between 1790 and 1835[1] – at some point in the evolution of literary history, these women writers ceased to count.

In 1998, Cathy Davidson made a claim very similar to the one made by Ralph Giffiths in 1798. Describing publications around 1985, she was confident enough to assert that the publishing of women writers had triumphed; they would not be forgotten again:

> [Nina Baym and Jane Tomkins] worked to make visible a woman's tradition in American literature … Series at Beacon Press, the Feminist Press, Oxford University Press (notably The Schomburg Library of Nineteenth-Century Black Women Writers), and Rutgers University Press – to name just a few – changed the canon of American literature.
>
> (Davidson, 1998:447–8)

Yet despite this celebration of a changed canon, performing data-mining techniques to count the writers in anthologies that have been published over the last decades reveals that women writers have not yet made significant inroads (Levy and Perry, 2015). And feminists were even after 1985 still engaged in recovering forgotten women writers, especially early modern women writers who had "published" in manuscript form, not print (Ezell, 1993). Writing in the 1990s, Kathryn Sutherland expressed

hope for bringing women's work to light via digital media, based on her perception that print had failed to do so:

> [I]f computers do not substitute for books, they may substitute for the absence of books; and this is what concerns me as a scholar working to rehabilitate women's writings.
>
> (Sutherland, 1993:53)

But many of the projects undertaken in the 1990s fell by the wayside, like Sutherland's own Project Electra, assimilated by the Oxford Text Archive with, as far as I can tell, its origins as a feminist project unmarked.

Many digital recovery projects of women's writing have, like *Project Electra*, never realized their ambitions: the *Perdita Project* has been commercialized – it is now sold by Adam Matthew Digital – and *Chawton House Novels Online*, including so many women writers, has been taken down since Pickering & Chatto began publishing it as a printed series. Some digital anthologies do exist and persist: the *Women Writers Online* project (http://www.wwp.northeastern.edu/wwo), discussed in more detail below; Mary Mark Ockerbloom's *Celebration of Women Writers* (http://digital.library.upenn.edu/women/writers.html), the *Victorian Women Writers Project* (http://webapp1.dlib.indiana.edu/vwwp/welcome.do), recently revitalized thanks to the efforts of Michelle Dalmau; my own *Poetess Archive* (http://www.poetessarchive.org), its revitalization under way. But several have not been updated since sometime between 2000 and 2005: the Emory *Women Writers Project* (http://womenwriters.library.emory.edu), *British Romantic Women Writers at Davis* (http://digital.lib.ucdavis.edu/projects/bwrp). *Voices from the Gaps: Women Writers and Artists of Color* (http://voices.cla.umn.edu) was last updated in 2009 – these are not living projects. We have sites giving us diaries and letters by women writers,[2] and many individual women writers exist at http://www.luminarium.org, an anthology; we have a good Emily Dickinson site, despite the fact that her works themselves are put up on separate sites by Amherst and Harvard (http://www.emilydickinson.org); *Woolf Online* houses only one novel (http://www.woolfonline.com); an Elizabeth Barrett Browning site (http://ebbarchive.org/index.php) is as yet rather small in scope; and a site about the relatively unknown

Baroness Elsa von Freytag-Loringhoven (http://digital.lib.umd.edu/transition?pid=umd:50580) gives us many versions of her poems, but her oeuvre is quite small. With the exception of the *Willa Cather Archive* (http://cather.unl.edu) and a very promising *Jane Austen's Fiction Manuscripts* site (http://www.janeausten.ac.uk/index.html), currently under way, we have nothing as yet on the scale of the Whitman, Blake, or Rossetti archives, or the sites for Shakespeare, Thomas Gray, Herman Melville, to name a few more – no sites, that is, which focus on bringing us a woman's entire oeuvre, through many editions and revisions, along with all her letters, diaries, and other writings.

Many do-it-yourself (DIY) 1990s-looking sites have disappeared, as evinced by all the dead links bedeviling a 2001 article by Georgianna Ziegler called "Women writers online: an annotated bibliography of web resources" (http://extra.shu.ac.uk/emls/06-3/ziegbib.htm) and the minority pages at Alan Liu's *Voice of the Shuttle* (http://vos.ucsb.edu/browse.asp?id=2746). Some persist without having been completed in any way, currently out of date: for Julian of Norwich, Margery Kempe, Mary Leapor, Ann Yearsley, Anna Barbauld, Mary Hays, Jean Toomer, and Zora Neale Hurston. Amy Earhart talks about early hopes for opening the canon via the web and the gradual disappearance of those DIY projects as well as the sheer dwarfing of them in relation to the big well-funded projects that simply reiterated the masculinist canon:

> While many early digitizers of texts believed in the web as a space in which the canon might be broken … , [w]ith limited exceptions, a majority of early projects reinforced canonical bias.
>
> (Earhart, 2012:312–13)

Thus, while scholars from 1798 to 1998 have declared that the absence of women writers is a condition that we can or have already overcome, this absence threatens to persist, in both print anthologies and the Web taken as a whole, as if it were one great anthology.

And recovery projects are not in great demand. In the forum quoted in the epigraph to this chapter, "Women as the sponsoring category," Ann Cvetkovich, Susan Fraiman, Susan Stanford Friedman, and Miranda M. Yaggi seem to agree that, as Cvetkovitch puts it, "projects that focus exclusively on women writers are limited if they presume that a history of

women's writing is sufficient justification for the project" (Cvetkovich *et al.*, 2010:248). For, Yaggi adds:

> while we could once justify grouping women writers together under the rubric "women's writing" by a sense of their shared oppression, such a justification no longer works. We need to seek other, more broadly based frameworks ...
>
> (Cvetkovich *et al.*, 2010:236)

The category "woman" can't underwrite scholarship anymore. Dealing with women's oppression is not enough. Though working to bring the history of women's writing to the fore is important, it is only really justified if it is digital: Yaggi adds, "Even the word 'recovery' can elicit knee-jerk distaste or disinterest if not immediately qualified as 'digital' and disassociated from earlier [print] modes of recovery" (Cvetkovich *et al.*, 2010:248). Such "disassociation" involves, again, broadening one's interests to other "fields of inquiry such as the history of print culture, science and technology, or transatlantic studies" (Cvetkovich *et al.*, 2010:248). However, if there are, as I have suggested, cycles of forgetting women writers, we disassociate from recovery at our peril. Moreover, two different speakers at this forum in two different contexts insist that it is only by expanding to include other fields that feminist work becomes "publishable" (Cvetkovich *et al.*, 2010:247,249). Why do they privilege producing a published book, so much so that they are encouraging feminists to forgo participating in the unpopular task of recovering women writers and to publish a printed book instead?

A printed book is a thing, enabling it to be a monument, but, when formed into a disciplinary monument, it is a decontextualized and decontextualizing thing. Print offers a soundless, supposedly bodiless, and allegedly eternal venue for articulation, and, as Pierre Bourdieu puts it, "eternal life is one of the most sought-after social privileges" of any class, intellectual or otherwise (1979:72). Transcendental ambitions, borne and bred by the book, I would argue, lead these thinkers away from recovery projects onto attempts at monumentalizing. But even though the participants in the forum want eternal life for feminism, the attempt to achieve eternal life via the printed book, is, I will now demonstrate, intrinsically inimical to women writers. (A century from now, will there be anthologies of twenty-first-century criticism that include as many women writers as men, some valued as major?) It is precisely the desire

for transcendence as it is fed by the printed book, I will now show, that denigrates women writers, demotes them to the merely ephemeral and minor.

Forgotten by print

In the process of mediation, when one is writing and publishing a book, there is never a moment without concern for one's own particular immortality in, via, and through the act of mediation. In a chapter of my 1999 book *Misogynous Economies*, I argued that the desire for immortality through print has motivated the systematic erasure of women's literary history from anthologies and textbooks (Mandell, 1999:107–28). So, for example, during the time that disciplinary anthologies were coming into existence, creating with their tables of contents the monuments of literature strewn around the field of English Studies, Robert Southey published two different anthologies. One, the three-volume collection called *Specimens of the Later English Poets, with preliminary notices*, lists 213 authors, many women among them, in an index that doubles as his table of contents, listing the volume in which they appear and the date of their death. In a passage playing upon the meaning of the greek word *anthologia*, "a collection of flowers,"[3] Southey introduces his *Specimens* by explaining that he is simply collecting authors of various periods so that people can see what ordinary, or even bad, writing was like during older periods of time:

> Many worthless versifyers are admitted among the English Poets, by … charity towards the dead. … There were other reasons for including here the reprobate, as well as the elect. My business was to collect specimens as for a *hortus siccus*; not to cull flowers as for an anthology. … The taste of the publick [in previous generations] may better be estimated from indifferent Poets than from good ones; because the former write for their contemporaries, the latter for posterity.
>
> (Southey, 1807:iv–v)

This is not an anthology of living but a collection of dead flowers, specimens of what was once popular but is definitively not timeless

literature. For that, one must go to Southey's 1831 collection of poets, *Select Works of the British Poets, from Chaucer to Jonson, with Biographical Sketches*, containing 21 male poets, whose genuine, enduring fame "has no present tense" because it extends now and forever. Ripped out of the womb of historical context, which is itself dead and withered, the great writers become part of a tradition, transcendent, immortal. The anthologizers Southey and also William Hazlitt constituted the discipline of English literature as transcendent traditions, and they accomplished this task by turning women writers into mere historical context, "the reprobate" in relation to the canon, never "the elect" (Southey, 1807:iv).

In a related argument, Julia Flanders points out another way that print culture embodies women writers in contrast to transcendentalizing men. Early modern women writers have not been edited in the way that men have, many only ever having been printed once, during their lifetimes. There simply are not printed editions that can be compared in an apparatus. In contrast, works by men have been published and republished. Consequently, the editing which canonical male authors typically undergo – editors listing "accidents" of local, contemporaneous publishing, and variants among various witnesses – transforms the material document into a timeless text containing the author's immortal intention, having sloughed off all contingent meanings. The historical context of each individual edition is cleared away, relegated to notes that elucidate meaning (Flanders, 1997:133–4). Again, women writers only appear in the materiality of the single print run. Because of the way that, in masculinist editing theory, "the text of the author" is conceived as "universalized and disembodied textuality," any "physical document" in which it was originally embodied is conceived as "corruption and debasement" and placed firmly "in the realm of the monstrous and the deviant"; it is seen as "an unchaste female body" that can be "chastise[d]" in order to produce a text reflecting pure, disembodied authorial intent (Flanders, 1997:129). Women's writing conveniently falls into the category of the monstrous and unchaste, the reprobate.

What Southey's anthologizing activity demonstrates is that saving male writers in disciplinary anthologies and authoritative editions is not enough by itself to establish their work as eternal: there must be concomitantly a production of collections containing works of merely historical interest and facsimile editions. Sexism is served by the media of

mass-printed anthologies and anthological textbooks as well as "authoritative" editions – not the medium of print per se, but the medium in the forms that we have constructed it in order to ground the discipline of literary history. This sexism makes women writers, whose writings are coded as mere historical ephemera and purely physical, disappear habitually, regularly, and cyclically (Ezell, 1990; Woods, 1994; Mandell, 1999). In reviewing the Brown *Women Writers Project*, Susanne Woods asks, "how can we recover early women's writing in English once and for all?" (Woods, 1994:19).

Is it in fact the case that women's writings must come, in the end, not to count after publication, only ever recovered and re-recovered, whether digitally or in print? Do we have to keep re-finding it? This question is crucial to digital literary historians because answering it will suggest, I hope, how to make feminist digital recovery projects that actually achieve what they set out to do: recover women writers for literary history, if not once and for all, then more permanently than has so far been accomplished. Can the creators of historical digital archives make women count, and, if so, how?

Digital de-contextualization

A print book's ambition to exist as an eternal monument problematizes its capacity to recover women writers "once and for all," since women must be defined as ephemera in order to provide a necessary contrast and contain the threatened return of materiality. Does the same structure arise in digital media? Though not rock-solid in the matter of monuments, the "flickering signifiers" of digital media nonetheless live in an allegedly disembodied sphere (Hayles, 1999). Encoding digital editions in eXtensible Markup Language (XML), and particularly in the set of tags offered by the Text Encoding Initiative Consortium (http://www.tei-c.org), does entail a level of abstraction away from the physical and from presentation of text on the screen: this too, as Alan Liu has successfully argued, entails the ambition to achieve transcendence (2004), the very same ambition, I would argue, that prompted coding women's writing as of merely historical interest in print.

Additionally, the notion of gathering a "grand" archive of materials – on a

digital scale – participates in a kind of "monumental logic," as Wernimont suggests (2013:5–6). Like Ellen Rooney, Wernimont condemns merely additive projects whereby the goal is to produce the highest number of women writers published online. Clearly she is right: discriminatory sexual difference informs ways of counting, given that male monuments are built by adding numbers of text to a single man's oeuvre, whereas the monumentality of feminist archives consists in increasing the number of authors, adding to women writers continuously and making it difficult for users to know how much attention to give to any individual writer. After all, too much information is as bad as too little if you cannot tell what counts as meaningful, or how to account for significance in a way that isn't about numbers. A recent critic has spoken of digital media (databases, Callahan offers) as providing "gardens of history" (Hatfield, 2006, quoted in Callahan, 2010:4), indicating that we may not have come very far from the anthological model: we can say about both databases and anthologies that we have a few great men in a database/anthology, each with many works, and many women in a database/print collection, each one with few works. Wernimont insists that digital projects of women writers must "facilitate access by helping users sort through an abundance of data and push against monumentalism in some way" (2013:6).

What way? How can we push against monumentalism? And if we push against it partly by recovering numbers of women writers, what place is left for a field of literature in which each woman writer can count? Flanders notices a paradox connected to the placing of women's writing: if we insist on its materiality and presence by putting forward a high number of women authors, thwarting transcendental ambitions by refusing to edit these writers in an authoritative, disembodied way, then we feed into the norm according to which women's writing is material and men's is not, but if we edit them according to the standards of authoritative editions, we perpetuate the set of standards according to which most women writers are denigrated as merely ephemeral, counting not as literature but as historically interesting (Flanders, 1997:137,140–1).

Re-contextualizing

The problem of valuing women writers is as follows: for women writers to be counted, one must create for them the authoritative editions of writing that denigrate the material body, disregarding the specificity of gender, or worse, abjecting it, scapegoating it as if it were to blame for mortality, for materiality as such. Susan Belasco helpfully designates the apparatus of authoritative editions an "infrastructure," demonstrating that, without such an infrastructure, women writers are not discussed by literary critics anywhere near as often as canonical male writers, despite the wealth of literary criticism that already exists for their works (Belasco, 2009:332). Changing our focus from "authoritative edition," a print hangover, to "infrastructure" more broadly allows us to think of alternatives to an apparatus that necessitates a disembodied text or "the work," as editorial theory designates it.[4] It also enables us to think digitally. Two feminist digital projects reconceive the infrastructure of women's writing: (1) *Orlando: Women's Writing in the British Isles from the Beginning to the Present* (http://orlando.cambridge.org), and (2) the *Women Writers Project*, formerly at Brown and currently at Northeastern University (http://www.northeastern.edu/nulab/women-writers-project-2).

The *Orlando* project effectively dismantles the canon and makes women count by virtue of its infrastructure, both socioeconomic and digital. Because it was generously funded, the *Orlando* project was able to hire many able researchers to deeply contextualize 1139 women writers. They are deeply contextualized via

> two distinct types of documents. The first type consists of sometimes extensive biocritical articles on individual writers (primarily British women writers but also a selection of male and international women writers), which are deeply tagged for structure (e.g., paragraphs, document divisions), content (e.g., names, organizations), and interpretive material (e.g., political affiliations, sexual identity, occupation; authorship issues, intertextuality, landmark texts). The second type consists of briefer records of related material, of the historical landmarks, and minutiae that contextualize our view of literary history.
>
> (Grundy *et al.*, 2000:269)

In terms of chronology, women authors writing at the same time as Maria Abdy, for instance, would share all the contextual events that are listed when one generates a chronology for her (Figure 35.1).

Results: 1-50 of 9662 | ALL

1539-1843 During these centuries the proportion of the British population over the age of sixty did not exceed 9.7%. more ...

1622-1854 No more than 6% of households in **Britain** included members from three generations; more than 70% had only two generations represented.

December 1780-Spring 1803 **Harriet Lee** joined her sisters in running their school in **Bath: Mesdames Lees, Ladies' Boarding School.**

1785-1814 Esther Tuke, a Quaker, ran a school for girls in **Trinity Lane, York.**

1788-1867 During this period, more than 150,000 convicts were transported from **Britain**, mostly destined for **Australia**; at the practice's peak in the early 1830s, 5,000 convicts were transported every year. more ...

1789-98 *Essays in Physiognomy* (translated by Henry Hunter from **Johann Kaspar Lavater**), with engravings by **Johann Heinrich Füssli** (known in England as Henry Fuseli), set off crazes for physiognomy and silhouettes. more ...

December 1789-August 1808 **Elizabeth Moody** wrote at least twenty-nine notices of books for the ***Monthly Review***: a pioneering activity for a woman.

Primarily between 1790 and 1855 During the **Highland** Clearances a large proportion of the tenantry were evicted from small, struggling farms by their Highland estate landlords to be replaced by more profitable sheep, cattle, and deer. more ...

During the 1790s Sarah Bache ran a school for girls in **Islington.**

mid 1792-1815 These were the active years of the informal evangelical Anglican group later called the **Clapham** Sect (then known as the **Saints**). more ...

Between 6 September 1792 and May 1802 **Eliza Fletcher** bore six children; the youngest, **Mary**, was born on a visit to London.

1794-1797 **Priscilla Wakefield** published with her name, through **Darton and Harvey**, ***Mental Improvement; or, The Beauties and Wonders of Nature and Art, conveyed in a series of Instructive Conversations.***

1794-1802 With engravings by N. Heideloff, the *Gallery of Fashion* appeared monthly, featuring hand-coloured aquatints of current fashions. more ...

1796-1815 Throughout these war years the *Bibliothèque britannique*, published in **Geneva**, kept open cultural relations between **France** and **England.** more ...

February 1796-September 1797 **Mary Hays** contributed often to **Richard Phillips**'s new ***Monthly Magazine***. During 1796 also, she began reviewing books for the ***Analytical***, edited by **Mary Wollstonecraft**, signing herself 'V.V.'

1 March 1796-June 1806 While **Anna Letitia Barbauld**'s brother **John** was editor of the ***Monthly Magazine***; she contributed to it at least fifteen poems and essays, perhaps many more.

October 1796-August 1797 **Jane Austen** drafted her third epistolary novel, **"First Impressions"** (which, from its title, was presumably an early version of what later became ***Pride and Prejudice***).

1797-8 **Henrietta Battier** (as 'Pat. Pindar') published another political verse satire in periodical form, ***The Lemon***, an answer to **John Giffard**'s highly loyalist ***The Orange*** (issued in three successive cantos over the same years).

1797-1801 **Lady Anne Barnard** lived at the **Cape of Good Hope** in **South Africa** with her **husband**, who was Colonial Secretary there.

25 February 1797 Maria Smith (later **Maria Abdy**) was born in **London**; she was an only child.

Figure 35.1 Chronology of Maria Abdy from *Orlando*.

Thus Abdy's world is given a thick description, but that description applies to many others of her era as well as to all the women writers comprising her context. The intertextuality tag is arguably the most interesting tag in *Orlando*'s semantic markup: here women's writing is connected to the writings of others, male and female, who are quoted, addressed, or to whom each writer alludes (Brown *et al.*, 2004). *Orlando* is not a collection of writings by women but rather an apparatus for women writers. The infrastructure of *Orlando*, I would suggest, is specifically designed to make a high number of women writers count.

The textbase of the *Women Writers Project* (WWP), called *Women Writers Online* (WWO), presents women's writing: currently 150 texts, and it is averaging 15 new texts per year. In the WWO the materiality of the texts is preserved – the long s, for instance, as well as original

spellings. But it does not merely offer facsimile editions. The texts are typed and so are analyzable via the visualization tools now available at WWO. They are also deeply encoded using a variant of the TEI specific to the WWO. This means that a great deal of care has been taken to present each text; in fact, the editors are paid for their work, and Oxford University Press occasionally publishes a volume to meet the demand of classes and researchers. In addition to the care with which each individual writer is treated, the WWP has been awarded several important grants. Grants typically de-privilege the work of archiving women writers because the National Endowment for the Humanities (NEH) Office of Digital Humanities supports tool building but not archive building, innovation but not sustenance (Earhart, 2012:314). As Susan Brown and colleagues point out, "serving" or "delivering" women's writing (or indeed any kind of writing) in digital media is coded a feminine task, such service bordering on the servile (Brown *et al.*, 2008:37). It is by virtue of code development and tool building that the WWP has been funded by grants (Wernimont, 2013:15,18).

We now have these two exemplary projects, *Orlando* and *Women Writers Online*. So now what? "Is the mere presence," Wernimont asks, " – the fact of being there, of having women's work exist in digital archives – enough to address the continued marginalization of women's writing?" (2013:4). It is not enough: as every good digital humanist knows, "build it and they will come" is a dangerous philosophy. But *Orlando* in particular, with its interpretive tagset, does more than simply proffer digital biographies of women: it participates in "the politics of knowledge representation" (Brown *et al.*, 2006:323); it provides what Wernimont (2013:8) calls "a feminist response to the elisions at the heart of sorting and editing". In fact, Brown, Clements, and Grundy say, "we were trying to devise a tagset that would make visible what previous literary historical methods had made invisible or excluded":

> In contrast to the sorting out of women in older literary histories which excluded them, we were trying to sort women into the version of literary history we were constructing.
>
> (Brown *et al.*, 2006:321)

The intertextuality tag mentioned above provides just one example of rewriting women's literary history such that women are not seen as forming a tradition, given each writer's intertextual connections with

men's writing as much or more so than with other women (Brown *et al.*, 2004:197). Both *Orlando* and the *Women Writers Project* have been able to pay their contributors, and doing so has made it necessary for both archives to charge subscription fees. It is up to us now, as a community of scholars who care about the future shape of literature, to insist that our libraries subscribe, to pay the fees that make possible this new kind of infrastructure, crucial to recuperating literary history. In this respect, consumption is a form of production: we are co-designing the archive constituted by the Internet as consumers who insist upon the presence of these projects.

Big data versus encoded data

I wish to conclude by discussing countlessness, a new type of monumentalism – digital, this time – which threatens once again to devalue women writers. Why? 1139 in *Orlando* + 150 in WWO = 1289. When marshaled in huge numbers, women writers are not countless enough: in the absolute biggest datasets, the number of women is dwarfed in comparison to every man who ever wrote and becomes a small if not insignificant subset of the data stream. Margaret Ezell has successfully argued that twentieth-century anthologies erased early modern women writers by focusing on print culture. But the digital has similar problems, she suggests. "The electronic 'archive' model" of digital publishing – online editions which are successful "because of their size, scope, and ability to be all inclusive" – that publishing model threatens to erase a substantial portion of women's literary history just as twentieth-century anthologies recovering women writers had done insofar as they privileged print. Early modern women writers, she has shown, published in manuscript, and sometimes wrote domestic volumes not meant for circulation at all. These manuscripts should not on that account be designated either non-literary or uninteresting:

> Because of this easy transference of older critical terms and textual conceptualizations into a new editorial media, I would argue that editors of electronic projects … need to be more aware of the significance of the materiality of texts, of the social conventions of handwritten culture as they may differ from print cultures, and the

> multiple ways in which these unique, single copy-texts are of interest and value to scholars.
>
> (Ezell, 2010:108)

For Ezell, refusing to "'edit' out the richness and complexity" of these manuscripts' "way of communicating" is a means for "positive feminist interrogation of editorial principles" – again, essential to making women writers count in literary history by paying attention to medium.

However, we confront here another double-bind – this time between the monumentality of countlessness and careful editing. Neither careful editing nor even producing large numbers of women writers will avoid replicating the print invisibility of women as we transfer the archive of women's writing and history to the Internet insofar as digital humanists focus their attention on algorithmically exploring big data. Bethany Nowviskie has noticed in comments on a blog posting by Miriam Posner (2012) about women encoders the small number of women who are involved in topic modeling, data mining, and highly mathematical, computational work in general. If feminists only create archives and do not then take the further step of doing cutting-edge research by learning how to use new tools for exploring them, we risk seeming only to *serve* in the ways that editorial work itself is feminized and denigrated as service in the field of literary studies. As we code innumerable documents in the archive of women's history, coding them in ways that make them theoretically interesting, let us also perform cutting-edge digital research on these very sites, for then, in order to talk about significant results, the world will have to talk about Felicia Hemans instead of Herman Melville. Rich encoding of a high count of women's texts is crucially important at our moment and can work to shape the literary history that is constituted by the Web. But so is trying out algorithms and innovative design on the resulting archives, no matter how relatively small.

There is a kind of misogyny accompanying the printed book that perpetuates this double-bind which insists that, to overcome sexism, feminists must count higher and lower at the same time. We continuously find ourselves caught in the paradoxical necessity to bring us many to make women significant, and yet focus on one or two lest significance is lost. The very same misogynist economy threatens us in the digital realm as well. Most recovery projects give us large numbers of women writers without caring about and enhancing the significance of each one, a

problem confronted by *Orlando* and *Women Writers Online*, through thick contextualization and careful editing, respectively. But the digital adds a new threat to render women writers invisible: its valuation of countlessness. Big data threatens to eradicate the history of women writers altogether, given that women originally published in small print runs and via manuscript circulation. The answer is not to do nothing in despair: it is both/and. Just as the paradoxical need to bring us many women and yet focus on them all was a feat that has been accomplished by *Orlando* through mechanical means for individuation, we can confront the new double-bind as well. No matter how much or how many, data can be infinitely atomized and analyzed: we need to perform cutting-edge research on archives of women writers, even if those archives do not offer the countlessness of big data. Then, a scholar looking back from the year 3000, summarizing important research results, will notice that women's history was exceedingly important to the world of the twenty-first century. "The most important theoretical and technical advances," she will say, "were discovered in exploring women's literary history."

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Notes

1 The CW3 database is freely searchable on the web: https://www2.shu.ac.uk/corvey/CW3/. Some of the works listed in

this database are available via the Nebraska Corvey Novels Project: http://english.unl.edu/corvey/html/Projects/CorveyNovels/CorveyNo

2 There are excellent sites for the letters of Lady Mary Wortley Montagu (http://andromeda.rutgers.edu/~jlynch/Texts/montagu-letters.html), Elizabeth Barrett Browning (http://digitalcollections.baylor.edu/cdm/landingpage/collection/ab-letters), and George Eliot (http://www.warwickshire.gov.uk/georgeeliot), as well as diaries for the Irish writers Dorothy Stopford Price (http://dh.tcd.ie/pricediary) and Mary Martin (http://dh.tcd.ie/martindiary).

3 "Collection of flowers" is the first definition of the term "anthology" in its list of meanings in Samuel Johnson's *Dictionary* of 1755.

4 Such a move resembles arguments against seeking authorial intent as an editing practice by Jerome McGann, D.F. MacKenzie, and others (Flanders, 1997:132).

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Beyond the Margins: Intersectionality and the Digital Humanities

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Abstract

This article examines the relationship between intersectionality and the digital humanities. Intersectionality offers a critical approach to debates between theory and method in the field, transcending simplistic hack vs. yack binaries. This article situates debates over difference in the digital humanities within the context of the culture wars within the U.S. academy during the 1980s and 1990s, locating the stakes for diversity in the digital humanities. It surveys digital humanities projects, outlining the need for alternate histories of the digital humanities told through intersectional lenses. Finally, the article proposes ways of looking forward towards the deeper intersectional analysis needed to expand intellectual diversity in the field and move difference beyond the margins of the digital humanities.

Introduction

While digital humanities has grown, so too has the number of voices making the case for attention to race, class, gender, sexuality, ability, nationality, and other categories of identity in the field. Increasing numbers of panels at the annual meetings of Digital Humanities; Modern Language Association; American Studies Association; American Historical Association; National Women's Studies Association; and Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC) examine the role of difference in digital humanities scholarship. In today's "digital humanities moment" [Gold 2013], the field often re-encounters the growing pains of the "eternal September of the digital humanities" [Nowviskie 2013]. As a result, recurring questions insist on the need for cultural critique in the field: "Where is cultural criticism in the digital humanities?" [Liu 2013], "Can we describe digital archives as feminist?" [Wernimont 2013], "Why are the digital humanities so white?" [McPherson 2013], and "Can information be unfettered?" [Earhart 2013]. The persistence of these questions demonstrates the need for more answers to the pressing matter of inclusion and exclusion within the field. 1

A recent special issue of the journal *differences*, "In the Shadow of the Digital Humanities," considers the fraught relationship between digital humanities and diversity. The call for papers for the Canadian Society for Digital Humanities and Association for Computers and the Humanities joint conference encourages proposals from "women, people of color, LGBTQ, or other under-represented groups" [Saklofske 2014]. The 2015 Digital Diversity conference in Edmonton celebrates the 20th anniversary of *The Orlando Project* and asks, "Have decades of digital studies enhanced, altered, or muted the project to recover and represent more diverse histories of writers, thinkers, and artists positioned differently by gender, race, ethnicity, sexualities, social class, and/or global location?" [Digital Diversity 2015]. Such calls suggest that scholars within digital humanities have begun recognizing the need for inclusive representation and a critical approach that foregrounds intellectual diversity within the field. 2

Resistance to the utility of cultural criticism abounds. Notably, Matthew Kirschenbaum argues many critics target a construct of "digital humanities" rather than the varied range of projects that comprise the field [Kirschenbaum 2014]. In 3

distinguishing between a discursive subject of criticism and material praxis, he echoes debates over the "hack vs. yack" binary – doing vs. theorizing – that have taken place in the field [Ramsay 2011]; [Cecire 2011]; [Schmidt 2011]; [Jones 2013]. Invoking a division between the two has been something of a stock move, used in equal measure to call digital humanists untheoretical [Bauer 2011] and to distance digital humanities from the messy realities of race, gender, sexuality, class, and other forms of difference [Smith 2007]. As Bethany Nowviskie notes, the binary has become a strawman for a false claim of a "fundamental opposition in thinking between humanities theorists and deliberately anti-theoretical DH 'builders'" [Nowviskie 2014]. The division between "hack" and "yack" has been complicated by the idea of tacit knowledge [Turkel 2010] that emerges from "journeyman learning experiences" [Nowviskie 2012] and by the intimate link between building and knowing within the field [Rockwell 2011]; [Scheinfeldt 2010a]. Yet, the binary persists, both in questionable arguments that cultural criticism targets a discursive construction of the field alone and invalid claims that an emphasis on building makes digital humanities untheoretical.

4 The relationship between theory and praxis is integral to the digital humanities. Connections between the two appear in the archives built, corpora analyzed, oral histories recorded, and geographies mapped. As Alan Liu has suggested, the practices of digital humanities make engagement with cultural critique online possible [Liu 2013]. In turn, theory contributes to the development of the field's metadiscourse and enables a critical look at material practices, including their omissions. Those of us who work with issues of difference often perceive the ways that many digital humanities projects fail to engage with race, gender, disability, class, sexuality, or a combination thereof. Some of the most developed digital humanities work – The Rossetti Archive, The Walt Whitman Archive, The William Blake Archive – preserve the writing of dead white men, specifically individuals unlikely to be forgotten in Anglophone literary history even if these projects did not exist. There are practical explanations for such subjects. For example, the body of pre-1923 public domain material digitized and ready for study privileges canonical writers and texts. As Earhart argues, fewer scholars are working with digital textual recovery and diversifying the available texts [Earhart 2013]. Yet, as Skye Bianco has argued, the consolidation of digital humanities as a recognizable field for institutions and grantors has led to exposure for "disciplinarily legible projects" that rely on canonicity for justification, yielding a field that trades on "its kinship to much older modes of humanistic study" [Bianco 2013]. Bianco describes this trend as a form of "retro-humanism" that does not account for recent developments in the humanities, like cultural studies, feminism, postcolonial studies, critical race studies, or queer studies [Bianco 2013]. Earhart proposes that digital humanities might intervene by reviving digital textual recovery work and identifying the omissions of the canon: "crucial work by women, people of color, and the GLBTQ community" [Earhart 2013]. The stakes here are high; as digital humanities becomes the public face of the humanities through organizations like 4Humanities and HASTAC, retro-humanism cannot be the order of the day. Without attention to the omissions that exist within digital humanities scholarship, the field risks replicating the exclusions of a dominant culture that already relegates difference to its margins.

5 To avoid this pitfall, we need critical approaches that transcend false binaries between "hack" and "yack." Intersectionality is one such frame that offers a way of examining the history of digital humanities to identify strategies for greater intellectual diversity in the field. Intersectionality originates in the work of Kimberlé Crenshaw, a legal scholar who sought a model for understanding the relationship between race, gender, and violence against women of color. The concept articulates Crenshaw's perception that "the experiences of women of color are frequently the product of intersecting patterns of racism and sexism" [Crenshaw 1991, 1243]. Through her research with women living in shelters, Crenshaw saw the ways the women encountered "burdens, largely the consequence of gender and class oppression...compounded by the racially discriminatory employment and housing practices women of color often face, as well as by the disproportionately high unemployment among people of color" [Crenshaw 1991, 1245–1246]. Crenshaw proposes that "multilayered and routinized forms of domination...often converge" to shape the experiences and limit the opportunities of women of color – black women in particular – whose concerns are not adequately represented by either anti-racist or feminist discourse alone [Crenshaw 1991, 1245]. From Crenshaw's grounded analysis in the 1980s to now, intersectionality has come to signify the ways that oppression manifests through multiple facets of identity that confer or withhold privilege, unearned advantages that accrue to individuals on the basis of their

identities [McIntosh 1990]. In its more expansive definition, intersectionality is generally understood to look beyond the race-class-gender triad described by Crenshaw to additional axes of difference including sexuality and ability. As a lens for scholarship in the digital humanities, intersectionality resists binary logic, encourages complex analysis, and foregrounds difference.

This article proposes that intersectionality is a viable approach to cultural criticism in the digital humanities, enabling us to write alternate histories of the field that transcend simplistic "hack" vs. "yack" binaries. I begin by situating debates over difference in the digital humanities within the larger context of the culture wars within the US academy in the 1980s and 1990s to locate the stakes of diversity within the field. Then, I suggest what an intersectional approach to digital humanities might look like and offer a survey of projects through an intersectional lens. Finally, I suggest ways the field might look forward towards deeper intersectional analysis needed to develop a transformed, inclusive digital humanities. 6

The Lessons of Theory

In 2009, William Pannapacker called digital humanities "the next big thing," a move that recalls the rise of critical theory, the *last* big thing to shape the humanities [Pannapacker 2009]. Responses to digital humanities from cultural critics in the mainstream press often echo the culture wars of the late 1980s and early 1990s, the struggle within the US academy over the fraught relationship between literature and theory. As the story goes, with the advent of theory, Shakespeare was going to be jettisoned for Saussure, Defoe for Derrida. Cultural critic Roger Kimball argued that "ideological posturing, pop culture, and hermetic word games" were supplanting humanities education [Kimball 1990, 11]. Critics of the digital humanities have made analogous charges. For example, Adam Kirsch suggests, "...the very idea of language as the basis of humane education – even of human identity – seems to give way to a post- or pre-verbal discourse of pictures and objects. Digital humanities becomes another name for the obsequies of humanism" [Kirsch 2014]. Digital humanities reduces literature to "data." Distant reading is destroying close reading. 7

History repeats itself in other ways too. The backlash against theory for its elision of difference resonates with arguments for cultural critique within digital humanities. Along with theory came criticism of its rise from black, ethnic, and women's studies. Many scholars in these fields were conscious of their hard-won gains during the 1960s and 1970s – establishing academic departments and journals and having their work recognized as scholarship – and worried their position within the academy would be jeopardized by the arrival of theory in the 1980s. They did not see theoretical models based on the work of Karl Marx, Michel Foucault, and Jacques Derrida as schools of thought that promoted their goals. Rather, they viewed the rise of theory in opposition to their work, which was located not in continental philosophy but in lived experiences of difference in the U.S. 8

In her essay "The Race for Theory," Barbara Christian writes about the growing importance of theory in the academy in the late 1980s, articulating concerns about inclusion and exclusion that are strikingly relevant to the digital humanities. She begins, "The New Philosophers, eager to understand a world that is today fast escaping their political control, have redefined literature so that the distinctions implied by the term…have been blurred. They have changed literary critical language to suit their own purposes as philosophers, and they have reinvented the meaning of theory" [Christian 1987, 51]. Just as theory's "New Philosophers" have begun transforming literary studies through theory, so too are digital humanists opening up new possibilities for scholarship. Christian's "literary critical language" is digital humanities' "methodologies." She anticipates a shift in the landscape of the academy, wondering what will happen to radical critics if theory becomes a defining part of literary scholarship and a commodity for appointment, tenure, and promotion. Christian sees the possibility of radical critique being domesticated as "black, women, [and] third world" scholars invested in intersectional approaches to literature are coerced into adopting the language of theory and "speaking a language and defining their discussion in terms alien to and opposed to our needs and orientations" [Christian 1987, 52]. Likewise, scholars in the digital humanities advocating for cultural critique recognize that engaging with difference is not only a question of representation but also one of method. 9

10 Digital humanities scholars who work with difference fear for its viability, much like Christian and her colleagues worried about their relationship to theory in the 1980s. Will black, ethnic, and women's studies be legible within digital humanities? Will other forms of difference – gender, sexuality, ability – have a place in the field as well? Scholars who take up these issues focus on the ways digital humanities intersects with how we engage difference in our work. These approaches are grounded in core questions of difference above, articulated by Alan Liu, Jacqueline Wernimont, Tara McPherson, and Amy Earhart, among others. Newer groups within digital humanities have been inspired by their concerns. For example, #transformDH is "an academic guerilla movement seeking to (re)define capital-letter Digital Humanities as a force for transformative scholarship by collecting, sharing, and highlighting projects that push at its boundaries and work for social justice, accessibility, and inclusion" [transformDH 2012]. The roots of #transformDH lie in "intersectional critical cultural studies" such as "critical race and ethnic studies; feminist, gender, queer studies; postcolonial, transnational, diaspora; disability studies; DIY (Add your own!)" [Cong-Huyen 2013]. As a result, #transformDH operates under the assertion that "gender, sexuality, race, nationality, and ability are all central to how we encounter and participate in digital humanities" and that "we must work collectively towards transformative, social justice oriented engagements" [Cong-Huyen 2013]. Similarly, Postcolonial Digital Humanities, or #dhpoco, has sought to build a community of scholars working at the intersections of postcolonial studies and the digital humanities, to promote "global explorations of race, class, gender, sexuality, and disability within cultures of technology" [Risam 2013]. Another initiative, Global Outlook::Digital Humanities (GO::DH), a special interest group of the Alliance of Digital Humanities Organizations (ADHO), fosters communication and collaboration around the world, navigating not only geographic but also economic difference and the practical challenges of embracing multilingualism within ADHO. The organization has supported the development of regional and linguistic tracks like South Asian Digital Humanities, Red Humanidades Digitales, and Associação das Humanidades Digitais; a whisper campaign to facilitate on-the-fly translations at the Digital Humanities 2014 meeting; and Alex Gil's *Around DH in 80 Days* website that showcases the international scope of projects. Groups like #transformDH, Postcolonial Digital Humanities, and GO::DH situate their missions at the intersections of multiple axes of difference, recognizing the need for attention to the complex power relations that serve as barriers to achieving inclusivity within the digital humanities.

11 The recent popularity of digital humanities obscures a longer history of which these initiatives are part. Just as Christian pushes back against the newness of theory and argues, "people of color have always theorized" [Christian 1987, 52], there are earlier, oft-unrecognized instances of digital humanities work that engages with difference. Since the 1990s, Afrofuturist scholars have been framing technoculture through intersectional lenses. Afrofuturism is an African American literary and artistic movement that foregrounds speculative approaches to displacement, belonging, and home for the African diaspora. Its literary dimensions encompass science and speculative fiction by writers like Nalo Hopkinson, Octavia Butler, and Samuel R. Delaney, while its critical angle has considered the ways that blackness, gender, class, and sexuality intersect in technoculture. Alondra Nelson created the Afrofuturism listserv in the 1990s to examine futurist themes in African diasporic cultural production, blackness in science fiction, and the possibilities of black technoculture. Her 2001 edited volume *Technicolor: Race, Technology, and Everyday Life* (with Thuy Linh Tu) was one of the first collections to consider the influence of racial politics on technoculture, and she also edited a 2002 issue of *Social Text* on Afrofuturism, with an emphasis on how new media, culture, and technology influence the African Diaspora. Kali Tal, who developed the Afrofuturism website, is perhaps best known for her article "Life Behind the Screen," which considers omissions in cyberculture scholarship in the mid-1990s [Tal 1996]. Scholars like W.E.B. Du Bois, she argues, have been theorizing identity in ways useful for but largely ignored by cyberculture studies. This body of work, which situates the African diaspora within the digital milieu, exists alongside early efforts at textual recovery for African American studies during the 1990s. As Earhart has suggested, projects like *The Charles Chesnutt Archive* and *Race and Place: An African-American Community in the Jim Crow South* embraced the affordances of emerging Internet technologies to resist canon bias among early digital projects [Earhart 2013]. To recognize this work within digital humanities is to embrace the possibilities of digital cultural recovery for the African diaspora. Earhart herself has begun archiving and recovering early work through her project *The Diverse History of Digital Humanities*.

Another area of scholarship that inspires digital humanities scholars invested in intersectionality is new media studies, which has been asking difficult questions about difference and the Internet since the 2000s. Lisa Nakamura's work interrogates the ways that online experiences shape perceptions of race, ethnicity, and identity, drawing on critical race theory as she identifies a relationship between operations of stereotypes online and offline [Nakamura 2002]; [Nakamura 2012]. She further suggests that the Internet is a space of re-embodiment along the lines of race and gender, as biotechnologies and other forces shape the online body [Nakamura 2007]. Similarly, Wendy Chun has examined how superficial views of difference have led to troubling beliefs that online spaces are disembodied and therefore insulated from the realities of social inequalities [Chun 2001]; [Chun 2005]. Anna Everett also takes up related issues, ranging from race in the digital public sphere [Everett 2002] to black public life and black women's experiences online [Everett 2009] and the influence of intersectional forms of difference in video games [Everett 2014]. Bringing a postcolonial lens to these debates, Pramod Nayar argues that technologized bodies are "raced, gendered, and classed, and situated in particular social, and economic, and cultural contexts" and emphasizes the importance of acknowledging subalternity in cyberspace [Nayar 2010, 66]. Drawing on theories of globalization as well as postcolonial studies, Radhika Gajjala examines the nature of South Asian technospaces, the effects of microfinance and peer-to-peer lending on women's craft communities, and the ways silence and voice are shaped online, insisting on the relationship between the local, global, and digital [Gajjala 2008]; [Gajjala 2012]. Attending to questions of media and migration, Isabelle Rigoni argues that intersectionality is an important tool for analyzing ethnic minority media. She suggests that while representation is increasingly happening in digital media, little attention has been paid to how race, gender, and postcolonial migration together "produce and maintain the unequal distribution of power in the mediascape" [Rigoni 2012, 834]. Her work situates the affordances of intersectionality for analysis of digital media, arguing that it "provide[s] an important analytical and conceptual tool for enabling us to understand gender, race, and class, as dimensions of social identities in transition, especially as reflected in the media" [Rigoni 2012, 835]. Ben Aslinger and Nina Huntemann also identify a relationship between new media studies and intersectionality, suggesting that new media studies may be a safe space for intersectional analysis and a challenge to the "often described conflation/caricature of the new media scholar as an apolitical white heterosexual male academic" [Aslinger 2013, 11]. Together, these developments in new media speak to the strides that feminist, queer, and critical race theory scholars have made in interrogating the relationship between digital media and multiple categories of identity, changing the ways we understand the relationship between networks, digital media, and subjectivity. 12

Recent calls for intersectional analysis in digital humanities are further indebted to Sandra Harding's ground-breaking work in feminist and postcolonial science and technology studies, which considers the relationship between feminist ways of knowing in scientific paradigms, the role of multiculturalism in science studies, and the imperialist foundations of European and American science [Harding 1998]; [Harding 2008]. This scholarship speaks to the relationship between difference and technology in a range of intersectional forms. Implications for digital humanities include the emphasis on technoscience, which enables critical analysis of the materiality of digital and computational technologies in relation to power, embodiment, and difference. Emphasizing that technologies themselves are implicated in intersectionality, Claire Potter has suggested, "New digital technologies have their own history, one that is recent to be sure, but that nevertheless resonates to historical questions of race, class, gender, nationalism, and sexuality that are at the heart of a feminist intellectual enterprise" [Potter 2010, 358]. Together, these scholarly contributions to difference in technoculture have places in the alternate histories we must write about the digital humanities. They offer models that foreshadow the role of intersectional analysis in the field by making the case that engagement with computational technologies is inextricably linked to questions of history, culture, identity, and difference. They hint at methods that advocate inclusion and critical analysis but are situated in the materiality of technologies – the very methods central to an intersectional approach to digital humanities. 13

Towards an Intersectional Digital Humanities

These concerns are vital to the analytical work of digital humanities, the computational technologies developed or used 14

to produce scholarship, and the ways projects are designed. Like any scholarly field, digital humanities veers towards the monolithic, constructing centers and peripheries. Every definition is necessarily exclusionary but the task of defining is an inevitable part of academic practice. Yet, acts of exclusion often come at the expense of those who inhabit the margins and whose identities are shaped by intersecting axes of difference. This phenomenon manifests in multiple ways, from the presumptive white maleness of digital humanities [Bailey 2011] to the canon bias within the field [Earhart 2013]; [Bianco 2013]. That is to say, this is not only a matter of the diversity of individuals within digital humanities but also of intellectual diversity. Therefore, it is incumbent on those at the center of the digital humanities to understand the position of those whose work dwells in the peripheries, to understand the historical legacies that link knowledge production with the denigration – even the destruction – of that which is other.

15 What I offer here is the beginning of a genealogy that identifies the influences of intersectionality on digital humanities, in its approach to theory and practice. I chart the ways intersectionality has been part of conversations in the digital humanities and survey projects in which we might find hints of intersectionality. These are the traces on which we might build to properly situate intersectionality as critical approach to the field. Broad in range, hallmarks of intersectionality in digital humanities include common sense advice for cultivating a diverse community, theoretical models for understanding the ways difference shapes digital practices, applied theoretical models that position intersectionality as an already existing but oft-overlooked part of computation, and practical tweaks like acknowledging inclusions and exclusions in data or developing search functions that enable intersectional engagement. Projects that are explicitly intersectional in their design and development are more rare but nonetheless essential.

16 Among early voices advocating for a theoretically intersectional approach to digital humanities is Martha Nell Smith, who proposes that the rigor of the field depends on it. She suggests, “Our pliant and accommodating standards need also to be more interdisciplinary and take into account the ‘messy’ facts of authorship, production, and reception: race, class, gender, and sexuality” [Smith 2007, 2]. Undertaking such a task of “embracing messy humanity in all its diversities” is, according to Smith, “no longer a luxury for our community, it is a necessity” [Smith 2007, 2]. More recently, Smith has issued a call to integrate feminist, critical race, sexuality, and class-based analysis into digital humanities, particularly in digital archival practice. Such an approach would address questions like “How have these items of knowledge and the organizations and working groups who made them come into being? Who has stakes in their presentation? What is visible in these new media archives and what might not be? Can what is invisible but relevant be known to users of new digital archives?” [Smith 2014, 409]. To thaw the “frozen social relations” [Smith 2014, 404] that she identifies within digital humanities scholarship, Smith suggests, “Producers should make every effort to make clear what has been occluded by remediation, by principles and practices of selection, and to unfreeze old binaries of authority and involve users in knowledge production” [Smith 2014, 409]. That is to say, digital humanities scholarship must be self-reflexive, interrogating its own positionality within the broader landscape of knowledge production, along axes of difference.

17 Another consideration is the tensions evoked by engagement with difference in the digital humanities. The field is beleaguered by its own creation myths and investment in “niceness,” “collegiality,” and “openness.” Tom Scheinfeldt attributes this niceness to the field’s investment in method, suggesting that methodological debates are easier to resolve than theoretical ones [Scheinfeldt 2010b]. Conversely, Bianco has proposed that depictions of digital humanities as the “cool kids’ table” from outside the field and the emphasis on niceness within mean digital humanities is “constructing itself through the competing narratives of privileged, middle-class, white high-school politics in tension with privileged, middle-class, white people who work ‘nicely’ together” [Bianco 2013]. These issues – niceness, method, difference, theory – came to the fore in responses to Miriam Posner’s essay about coding. While not opposed to code, Posner identifies the way that knowledge of coding plays out along gendered, classed, and racialized lines, noting that “men – middle-class white men” are more likely to have been encouraged to engage with computational technology at a young age [Posner 2012]. Identifying the intersectional structural biases influencing trends in who is most likely to know how to code, Posner suggests, “If you [digital humanists] want women and people of color in your community, if it is important to you to have a diverse discipline, you need to do something besides exhort us to code” [Posner 2012]. Responses to

Posner's post, which included dissent, revealed how misunderstood the connection between theory and method can be. She responded by linking method – coding – to theory – arguing, "Let's make inequities of power something else we decide to abandon" and proposing guidelines for intersectional engagement in the digital humanities community: "1. Let's think about ways to build communities of underrepresented people...2. Let's acknowledge that we all do racist and sexist stuff sometimes...3. Let's talk about when our niceness could be shutting down important conversations...4. Let's believe people when they tell us they feel uncomfortable" [Posner 2012]. Here, Posner identifies the influence of difference, arguably a theoretical concern, on method. These guidelines are a precondition to an intersectional response to difference in digital humanities that embraces the relationship between theory and method.

18 Approaching difference by blending Smith's recommendations for intersectional analysis and Posner's community guidelines reveals the ways the field is already informed by intersectionality. As Bianco has suggested, computational scholarship already is "a radically heterogeneous and a multimodally layered – read, not visible – set of practices, constraints and codifications that operate below the level of user interaction" [Bianco 2013]. In that layer, operations of intersectionality may be visible if we look for them. Accordingly, Bianco notes, "Our ethics, methods and theory are *not transparent* in our tools, unless you have the serious know-how to critically make them or hack them" [Bianco 2013]. While digital humanists themselves may have access to that layer by virtue of technical skill, users engaging with digital humanities scholarship may not. Similarly, Smith argues, "Tools cannot be separated from the knowledge systems in which they have been imagined and made" but proposes we might frame intersectional practices as tools themselves [Smith 2014, 408]. To do so would ensure that digital humanities scholarship unsettles essentialist categories, rather than reifying existing assumptions about race, gender, class, ability, sexuality, or other categories of difference. Therefore, it is incumbent on us to make the critical layers visible to users in the apparatus developed around our work.

19 By approaching intersectionality in the digital humanities at the juncture of disciplinary knowledge and technical specification, we blend theory and method and avoid what Moya Bailey calls "the add and stir model of diversity, a practice of sprinkling in more women, people of color, disabled folks and assuming that is enough to change current paradigms" [Bailey 2011]. Bailey frames this issue in intersectional terms, proposing, "This identity based mixing does little to address the structural parameters that are set up when a homogeneous group has been at the center and don't automatically engender understanding across forms of difference" [Bailey 2011]. Axes of difference are fluid and converge in multiple ways. For example, the considerations necessary for a project on black lesbian activism would necessarily be different from one on oral histories of Latina transwomen; these might range from technical specifications to design principles to issues of safety that a public project might raise. As a result, there is not simply one way of doing intersectional digital humanities. Rather, it is a provisional lens that suggests practitioners begin their work with an understanding of the particularities necessary to design projects that account for influences of difference on knowledge-production. To date, we have few alternatives that enable such an approach. For example, Kara Keeling's "Queer OS" or "queer operating system" suggests that a queer perspective, broadly construed, would change how we view technology. Queer OS "would take historical, sociocultural, conceptual phenomena that currently shape our realities in deep and profound ways, such as race, gender, class citizenship, and ability … to be mutually constitutive with sexuality and with media and information technologies, thereby making it impossible to think of any of them in isolation" [Keeling 2014, 153]. By viewing "queer" as an operating system, Keeling proposes to decenter social norms in favor of their alternatives. Moreover, she frames Queer OS in intersectional terms, emphasizing the relationship between sexuality and other categories like race, ability, and nationality. Offering another alternative, Fobazi M. Ettarh interrogates the relationship between Boolean search terms and intersectional identity. Describing her experiences in library school, she notes, "I am proof that these [race, gender, and sexuality] are not separate issues. I am not Black one day and Queer the next. Instead, I am Black AND Queer. In Principles of Searching we learn how important and, or, and nor are in Boolean searching. Too long the environment has been Black OR Queer" [Ettarh 2013]. As such, she identifies a conceptual fit between intersectionality and structures of information. These issues are further explored by Alexis Lothian and Amanda Phillips who ask, "Can digital humanities mean transformative critique?" [Lothian 2013]. They argue that if scholars in fields like ethnic studies, gender studies, cultural studies, disability studies, or queer studies are

engaging with technology in their scholarship, they should "lay claim to our place within digital humanities" [Lothian 2013]. Through such an intersectional bent Lothian and Phillips look forward to transformative digital humanities "where neither the digital nor the humanities will be terms taken for granted" [Lothian 2013]. These theoretical perspectives offer models of how intersectionality operates in relationship to the digital humanities, from the nature of computation itself to the way we constitute relationships between the humanistic inquiry and the digital.

20 In additional to theoretical precursors, we have projects that, in their own ways, provide models for how to approach digital humanities through an intersectional lens. An acknowledgment of the inclusions and exclusions within a data set or the source material is an important start. Allison Booth's *Collective Biographies of Women* [CBW], for example, focuses on prosopography, or collective biography, a genre of text comprised of short biographies. Using print volumes and digital resources like Project Gutenberg or Google Books, *CBW* compiles biographical narratives and develops tools for prosopography. The project's "About" page offers an important model of how projects can be positioned in intersectional terms:

> Prosopography must be selective, but it can claim a share of attention for marginal identities. Most women have gone missing in history and have no printed memorial. The Anglo-American catalogues in CBW tended to exclude all but the rare working woman, woman of color, or woman who did not belong to the Christian middle class of English descent. Religious nonconformists and various minorities nevertheless began to use this tool of recognition. The collections camouflage or accept some examples of diverse sexuality and same-sex relationships and many examples of single or old women. It is high-ranking women who pursue heterosexual affairs who get censured in these books — but not always or not with conviction. Some books celebrate opposites of the "good woman" type. The limitations of the lists – and any canons or lists – notwithstanding, a search through this bibliography and the books it registers helps to correct some distorted generalizations about the lack of records of women in the past. [CBW]

21 The project's "Pop Chart" or index of most frequently recurring subjects indicates a bias towards white European or American women, with Pocahontas and Cleopatra being notable exceptions. However, the *CBW*'s proactive foregrounding of questions of race, class, gender, and sexuality in the fashioning of the project is a fitting model of how to engage with intersectional digital humanities. Key here is making the intersecting phenomena that shape a project visible even though they may not be readily understood. *The Orlando Project* does this as well. *Orlando* examines women's literary history but its focus on women's writing may obscure its intersectional underpinnings upon first glance. However, the scholarly introduction to the project notes that while gender is "an indispensable tool for historical analysis," the project creators "see gender as one among other constituents of identity" [Orlando]. Therefore, the project includes documents that examine race, class, sexuality or other categories of difference to illuminate the "cultural formation" of writers. Identifying such a frame, the project makes clear that its engagement with gender is situated in the flexible and provisional spirit of intersectionality.

22 A project might also structure its search mechanism to optimize intersectional analysis. Brad Pasanek's *The Mind is a Metaphor* database, for example, makes clear that its scope and textual sources only cover 18th century British metaphors [Pasanek]. Yet, the metaphors themselves are tagged to enable intersectional searches. A user can sort by not only literary period, metaphor category, and genre but also gender, race, and nationality. Among the latter, "African or Afro-British" is one such category, which when selected with "female" produces a list of metaphors by Phillis Wheatley. Despite the predictable underrepresentation of black women in a database of 18th century British writing, the ability to navigate the database in such a way acknowledges the importance of intersectionality. The *Emory Women Writers Resource Project* (EWWRP) similarly foregrounds an intersectional approach through the way it structures project data. Among the collections through which the site is organized are "Native American," "Abolition, Freedom, and Rights," and "Women's Advocacy," but the collections are fluid, with texts fitting multiple categories appearing in more

than one collection [EWWRP]. *A Celebration of Women Writers*, a site that preserves public domain women's texts compiled by Mary Mark Ockerbloom, also enables ethnicity as one method of browsing the archive [Ockerbloom 2012].

23 User integration is another way digital humanities projects can make intersectional interventions possible. *NINES: Nineteenth-century Scholarship Online* material is beginning to grow more diverse. Visible tags on the project website, including "women," "Chinese," "African," and "diaspora," suggest an effort to foreground a range of objects from 125 federated websites. The Collex interface offers possibilities for creating exhibits, which allows users to interact with the material through curation; even users without specialized training could arrange the material to explore a range of topics through available objects. Moreover, Collex offers the possibility of expanding the archive of affiliated websites via RDF, allowing creators of substantial projects to seek peer review and inclusion in NINES. NINES demonstrates openness towards greater representation and offers tools to make that possible. *The Women Writers Project*, which undertakes electronic text encoding for pre-Victorian women's writing, includes a publication series called *Women Writers in Context,* which features exhibits "designed to engage readers in the exploration and discovery of topics related to early modern women's writing" [WWP]. One such exhibit on women and race allowed creator Kim Hall to explore the role of intersectional analysis and engagement with *The Women Writers Project*. Accordingly, she notes, "Rather than isolating race as a focus, the best research sees race in relation to concerns of gender, class, religion, and sexuality. To say that race is connected to these other social divisions is not to say that race is analogous to these other categories, nor is it to say that all marginalized people are oppressed or made marginal in the same ways" [Hall 1999]. Though the scope of *The Women Writers Project,* namely the periods of literary history it examines, privileges the writing of white women, the *Women Writers in Context* series signifies how scholars might find interpretive paths through the material. Through user engagement, these projects make intersectional analysis more legible in the archive.

24 Beyond projects that address intersectionality indirectly, we can look to the examples of those that foreground it in project design. An example of an intersectional digital archive, Amy Earhart's project *The 19th Century Concord Digital Archive* examines the relationship between Concord, Massachusetts and American literature and history. The archive "invites the scholar to utilize a broad set of digital documents to reconsider how the town and its writers are situated within broader scholarly conversations" [CDA]. Addressing scope, the project statement notes, "These [Concord] authors interacted with groups less frequently recorded in textual documents of the time period: free African-Americans, Irish immigrants, the poor, and criminal class" [CDA]. The archive offers insight on these engagements across lines of gender, nationality, class, and more: "By digitizing a broad range of materials that represent the diverse people associated with literary production the archive allows scholars to rethink the way we conceptualize individual work associated with Concord, to redefine our assumptions about literary and historical representation, and to reconsider the very foundation of our disciplinary studies" [CDA]. The archive reflects Earhart's observation that "scholars invested in early work on race in digital humanities insisted on building editions and digital texts as activist intervention in the closed canon" [Earhart 2013]. Indeed, Earhart's own project is an example of what intersectional activism in the canon looks like.

25 A further dimension to consider is how intersectional analysis can be engaged through text mining. In their work on the Black Drama database, Shlomo Argamon, Charles Cooney, Russell Horton, Mark Olsen, Sterling Stein, and Robert Voyer made space for intersectional structures within the database as they considered "the degree to which machine learning can isolate stylistic or content characteristics of authors and/or characters having particular attributes – gender, race, and nationality" [Argamon 2009]. The database contains 963 texts written by 128 men and 243 by fifty-three women; 831 titles are by US authors while 375 are by authors from Caribbean or African countries. There are further variations in the number of speeches by women and male characters and black and white characters, with a small number of speeches by characters of other ethnic backgrounds. Metadata for the project contains 30 fields to describe characters and authors from the black stage, including "Race, age, gender, nationality, ethnicity, occupation, sexual orientation, performers, if a real person and type" [Argamon 2009]. They use the ARTFL search system PhiloLogic, which "allows joining of object attribute searches, forming a matrix of author/title/character searching" [Argamon 2009].

Argamon et al. demonstrate the range of intersectional analysis made possible by choice of platform, noting that "one can search for words in speeches by female, black American characters depicted by male, non-American authors in comedies first published during the first half of the 20th century" [Argamon 2009]. Argamon et al.'s work suggests how data mining can provide new understandings of language use and its relationship to representation. For example, they note that analysis of racial epithets reveals variations of language use based on gender and nation and propose that such test cases "hint at larger discursive and representation issues" [Argamon 2009]. As Argamon et al.'s work with the Black Drama database begins looking at how to represent attributes like gender, race or nation as textual characteristics through computation, we might ask, "Can the database be intersectional?"

26 Conversation within the 2014 Critical Code Studies Working Group indicates the importance of intersectionality to our understanding of code as well. The CCSWG 2014 featured a week on "Feminist Programming," led by Arielle Schlesinger and featuring Jacqueline Wernimont and Ben Wiedermann as discussants. Schlesinger began by asking the group, "What is feminist code? What is feminist coding?" in relation to code snippets by Mez Breeze and micha cárdenas. Among the conversations generated were the relationship between executable code and cárdenas's work code poems, an issue raised by Mark Marino. cárdenas explained, "I am more committed to the visionary and speculative possibilities of these code snippets than their literal executable possibilities" [Lasmana 2014]. Wernimont raised the issue of absence, evoking a generative possibility in "allowing the absent-presence of feminist executable code to operate as an irritant" [Lasmana 2014]. She described this in feminist terms as "an occasion to continue to question the structures that have not permitted such a thing to exist" [Lasmana 2014]. cárdenas further complicated the notion of "feminist" by noting that "feminist without qualification can easily be equated to white, cis-gender, first world feminism," asking "What is gained and lost by the formulation of this code as feminist, as opposed to say, decolonial, in the sense of rejecting western systems of epistemology" and raising the question of the role of intersectionality in code [Lasmana 2014]. Viola Lasmana responded by invoking Trinh T. Minh-ha: "Shake syntax, smash the myths, and if you lose, unearth some new linguistic paths" (qtd. in [Lasmana 2014]. She suggests that such processes occur in the code poems written by cárdenas and Breeze. The question of executable code raises the issue of whether executability may be a limit to both intersectional praxis and digital humanities methodology. Given the reliance of digital humanities methodologies on executable code, is engaged intersectional work limited by it? By examining this question, we may consider the limits of code as not only sets of operations but also a language that may enable or foreclose intersectional conversations.

27 Finally, practicing digital humanities through social media, Jessica M. Johnson's *The Codex,* is an example of intersectional engagement in digital humanities. *The Codex* is "a social media triptych" composed of three sites: *African Diaspora, PhD*, *Diaspora Hypertext*, and *Seeing Dark Matter* [Johnson 2015]. Guiding the development of these sites is Johnson's intersectional praxis, which by her own description, is "anti-oppression, feminist and social justice oriented" [Johnson 2015]. *African Diaspora, PhD* showcases developments in African diaspora history, from an intersectional lens. A survey of recent posts shows attention to scholarship on a range of subjects like images of "faithful slaves" in Confederate discourse, including mammies and kinship, and race and gender in Atlantic New Orleans. Johnson's site is an important resource for African diaspora scholarship, which she frames in intersectional terms: "The field is also interdisciplinary, supporting and supported by research emerging from the fields of African, Africana/African-American, and Latin American studies; women, gender, and sexuality studies; and feminist, post-colonial, and race theory" [Johnson 2015]. *Diaspora Hypertext* showcases Johnson's work as a "black feminist/radical woman of color digital humanist and media maker" [Johnson 2015]. Organized into "writing," "research," and "teaching" tracks, the site provides a range of resources on African Atlantic Diaspora history. Complementing these sites is *Seeing Dark Matter*, a Tumblr-driven digital archive devoted to black diasporic visual culture and to "processing Atlantic slavery through application, code, and screen" [Johnson 2015]. In its multiple modes, Johnson's work demonstrates how engaging a range of tools enables more full exploration of intersectionality within an interdisciplinary field.

28 The theoretical approaches and projects I have described here are intentionally diverse in subject, providing a survey of

intersectional traces in the digital humanities. Some projects, like Earhart's, Argamon et al.'s and Johnson's work, consciously integrate intersectionality into their design. Others, like *Orlando*, *CBW,* and *NINES*, suggest how intersectional engagement possible, even if not a primary goal. This cursory look for hints of intersectionality is intended as an opening salvo for new histories of the digital humanities that locate intersectionality at their center and intervene at the locus of theory and method. What I have offered here is the work of survey, a pre-cursor to the deep analysis necessary for further developing an intersectional history of digital humanities. Yet, I have only examined the relatively painless ways that intersectional perspectives can be integrated into scholarship: acknowledging the inclusions or exclusions of data, defining terms in inclusive ways, or adding another tag. This is the surface-level work of representation that is unlikely to destabilize the moorings of digital humanities. The pursuit of a more inclusive field only will begin by looking at these practices as ways of being thoughtful, intentional, and intersectional about digital humanities. Yet, painful work must be done too. This includes looking more closely at digital humanities projects, opening the black boxes to examine the imprints of intersectionality on archive, code, metadata, database, and more. In the writing and rewriting of these histories, digital humanities practitioners must situate them in the histories of Afrofuturism, digital textual recovery, new media studies, and science and technology studies, being careful not to erase or write over the contributions that scholars of race, class, gender, sexuality, disability, or other forms of difference are making to the digital humanities – or risk reaffirming the power of Western academic hegemony. Moreover, we must develop intersectional practices for the digital humanities that account for difference from the ground up, integrating theory and method. At the juncture of the two, we must attend to discourses and histories of race and racialization, complexities of gender, complications of class, the operations of sexuality, and their intersections. In doing so, we can create projects that engage, rather than rebuff, difference.

Conclusion

The affordances of the digital humanities are often thought to reside in its ethos of building and hacking, in the pursuit of knowledge that emerge from the act of making. As this survey of theoretical and project-based traces of intersectionality within digital humanities proposes, cultural critique is perhaps misunderstood by its detractors in the field as an attempt to force a theoretical rubric onto digital humanities or to rehearse a "hack" vs. "yack" binary. Rather, theoretical moves are implicit within digital humanities projects and excavating them is necessary to ensuring intellectual diversity. We have the opportunity to build a more inclusive field, new methodologies, and new forms of analysis. 29

Why an intersectional approach? As Kathy Davis suggests, intersectionality is not a "normative straitjacket" or predetermined method of feminist analysis [Davis 2008, 79]. Drawing on Patricia Hill Collins's observation that intersectionality is often taken as pre-defined and ignores convergence and contradiction within intersectional scholarship, Anna Carastathis argues that intersectionality must be viewed as a provisional concept that "anticipates, rather than arrives at, the normative or theoretical goals often imputed to it" [Carastathis 2014, 60]. The axes of difference within intersectionality are dynamic and do not operate in predictable ways; rather, they are fluid and constructed, the power valances in each in flux. Intersectionality is not a prescriptive method because there isn't one particular way of "doing" intersectionality. Rather, intersectional digital humanities asks us to begin with the specificities of a data set, identify the layers of difference that intersect within it, and use that knowledge as a basis for project design. 30

The fluidity of intersectionality is a natural fit for the flexibility that digital humanities connotes. In its recent popularity, Patrik Svensson suggests, digital humanities has seen "a higher degree of heterogeneity and inclusion of other epistemic traditions" [Svensson 2009]. He positions such growth in broad ways, suggesting we might view information technology as "a tool, an object of study, an exploratory laboratory, an expressive medium, and an activist venue" [Svensson 2010]. Svensson proposes that a "big-tent digital humanities" would encompass this proliferation of modes [Svensson 2013]. As an alternative to the tent, however, Svensson proposes a model of digital humanities that is a "meeting place, innovation hub, and trading zone" to emphasize "commitment to interdisciplinary work and deep 31

collaboration" [Svensson 2013]. The affordance of such a model is a "fractioned (not homogeneous) collaborative (not coerced) trading zone and a meeting space that supports deeply collaborative work, individual expression, unexpected connections, and synergetic power" [Svensson 2013]. To appreciate such benefits, Svensson argues, the digital humanities "needs to support and allow multiple modes of engagement between the humanities and the digital...[to] maximize points of interaction, tackle large research and methodology challenges, and facilitate deep integration between thinking and making" [Svensson 2013]. These are the spaces where complex negotiations between theory and method are made possible. They require "difficult thinking," which Mark Sample defines as "imagining the world from multiple perspectives and wrestling with conflicting evidence about the world" [Sample 2014]. As Sample proposes, difficult thinking does not seek easy reconcilement for conflicting ideas but "faces these ambiguities head-on and even preserves them" [Sample 2014]. Intersectionality, in its emphasis on anti-essentialism and possibilities of accounting for competing axes of difference in multiple permutations, makes difficult thinking possible and perhaps even brings Svensson's vision of digital humanities to fruition.

32 Working at the intersections of digital humanities and intersectionality, we can intervene in the false dichotomy between digital humanities and cultural critique. For, as Bianco reminds, "We are not required to choose between the philosophical, critical, cultural, and computational; we *are* required to integrate and to experiment" [Bianco 2013]. Existing digital humanities projects provide examples of how, in small and large ways, theory and method can be combined to address recurring questions of the role of race, class, gender, ability, sexuality, nationality, and other categories of difference within the field. These phenomena subtend the development and production of digital humanities projects but they may not be evident. Therefore, it is incumbent on us, as digital humanities practitioners, to make them legible, to move them beyond the margins. To suggest we embrace intersectionality as a critical approach for the digital humanities is not to impose a static, single model of analysis. Rather, it opens space to engage with the variety of ways difference informs our work. There is no single way of being "intersectional" – instead, intersectionality privileges exploration and innovation in feminist praxis. And aren't exploration and innovation at the very heart of digital humanities?

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33
Sorting Out the Digital Humanities

Patrik Svensson

It is appropriate to start a chapter on sorting the digital humanities out with questioning whether we really need to sort it out at all. This is a warranted question, given all the time and effort that has gone into defining, consolidating, expanding, questioning, and institutionalizing the field (Gold, 2012; Terras *et al.*, 2013). In a workshop held at Umeå University in December 2013 about the future of the field, one of the participant groups suggested that the questions we will ask in five to seven years will be the same, but we will have different tools with which to answer them. There is a suggestion of circularity here, and looking at the history of humanities computing and the digital humanities, it is quite clear that many of the arguments resurface over time. It is almost comforting to read Martin Wynne's *Humanist* list comment (2013) on the reorganization of digital humanities at Oxford, and relate it to Lou Burnard's text (2002) on the reorganization of the same unit about 10 years earlier. They both relate to institutional placement and the perils and advantages of having a servile function within the university system. There are a number of issues like this one that can be traced over time, including reward systems, alternative careers, the value of the scholarship produced, and disciplinary boundary making. It may well be that some of these often inward-looking issues will never be sorted out, and that there are other issues that do not surface in the discussion about the field. In this chapter, I suggest that we need to revitalize the discussion.

Geoffrey Bowker and Susan Leigh Star (1999) demonstrate how classificatory systems have meaning in a very material sense and how categories can be invisible and be made visible. The digital humanities clearly does not consist of numerous discrete blocks that can be sorted

out, and there is no way of solving the puzzle of digital humanities in any definite fashion. However, the notion of sorting out helps to frame the question of the future of the field in a way that indicates that a solution is possible. The main argument of this chapter is that this solution does exist, not a one-size-fits-all or a complete solution, but a way of thinking about the digital humanities that brings together the humanistic and the digital through embracing a non-territorial and liminal zone. Furthermore, the idea of sorting out the field draws our attention to its structures and classifications and forces us to think about the building blocks, categories, and issues that comprise the field.

This sorting out is intimately related to different epistemic traditions, disciplinary perspectives, and epistemologically situated technologies associated with the digital humanities as an intersectional field. There is a great deal of negotiating going on in such zones, and I argue that there has to be a willingness to understand other traditions without necessarily giving up disciplinary integrity (cf. Ratto, 2012). Furthermore, epistemic technologies can play a central role in challenging knowledge traditions and developing new knowledge, which requires us to be reflective of our own practices and assumptions and be willing to engage with other epistemic positions.

This chapter starts with a discussion of the status of the digital humanities and the common assumption that it is a field in disarray. I maintain that making the digital humanities into an institutionalized discipline can be counterproductive, in giving away some of the distinct advantages of a liminal position. This discussion is followed by a provisional analysis of the current situation that indicates that there is an opportunity for moving ahead productively, but that there are a number of issues and stances that need to be addressed. I argue that the territorial ambitions of some of the digital humanities organizations can be problematic at a time when the field is being negotiated and expanded. The second part of the chapter responds to a call for action by Melissa Terras from the perspective of the work going on in the Alliance of Digital Humanities Organizations (ADHO) and suggests possible actions and strategies required to move forward. These are embedded in a model of digital humanities that I will present. I posit that the institutional instability that has often been identified as a problem in the history of the digital humanities can be a key factor for developing the field. The chapter ends with a proposal for a code of conduct for the field and a list

of actionable suggestions for the digital humanities.

The ever-emerging field of digital humanities

It is often assumed that the digital humanities is in flux and not particularly stable as an institutional construct. While this might be true to some degree, there are obviously constants to the field. For instance, there is almost always a relationship to traditional humanities disciplines such as English and history, some sort of technological infrastructure, and a degree of perceived incompatibility with the system of higher education (whether it be reward systems, the view of the humanities, or allowances for alternative careers).

Furthermore, this instability has probably been influenced by there being an open, visible, and lively discussion about the field. While this is not a situation unique to the digital humanities, it seems more likely with interdisciplinary fields and fields undergoing change, such as art history in the 1980s and 1990s (Klein, 2005:113) and American studies in the late 1990s (Klein, 2005:168). However, the extent to which the debate has taken place online is likely to be unique to the digital humanities. Many of the best-known people in the field debate on Twitter together with others, including graduate students and officers at funding agencies such as the National Endowment for the Humanities. Online forums are often active, and when the Postcolonial Digital Humanities initiative hosted an open thread on "The digital humanities as a historical 'refuge' from race/class/gender/sexuality/disability?" (Koh and Risam, 2013), there were 165 comments, most of them quite substantial, over five days. As the history of the field shows, there has been a longstanding solid online engagement, with the *Humanist* list being one of the first academic email lists when it was started in 1987 by list curator Willard McCarty. This relative openness and outspokenness has undoubtedly contributed to the sense of the field as fractured and unstable, as polemic discussions have taken place live in public. Furthermore, the public and repeated preoccupation with the organization, history, and future of the field across media can come across as inward-looking and self-referential. The argument here is not necessarily that this is not true, but that we have to be sensitive to the ways in which the field is constructed, projected, and

enacted across media and communication channels.

The stability of a given knowledge domain is among other things linked to how it is categorized in the academic system, its disciplinary heterogeneity, and the discourse about the area. The descriptor "discipline" is normally taken to denote a more static and less interdisciplinary area than "field" or "studies." What gives disciplines a certain degree of stability is that they are associated with an epistemic tradition, objects of inquiry, assumptions, theories, methods, ways of sharing research, and career paths (Repko, 2008:4–5). There is a certain sense of unity associated with disciplines, although that does not mean that disciplines are static and unchanging (Klein, 2005:50). Disciplines and fields change over time, and while it might not be productive to suggest a developmental or evolutionary trajectory, there are patterns to disciplinary changes (Becher and Trowler, 2001:43). A common movement has been towards specialization, although this does not always lead to the formation of new disciplines (Weingart, 2010:11). There are also multiple possible trajectories of different kinds of interdisciplinary formations (Klein, 2010:22). Undergoing a formational stage or remaining in an interdisciplinary state is not unique to the digital humanities, but the field has certainly been trapped for a long time in an uncertain state without becoming a discipline or getting reasonably established as an interdiscipline or an academic area (such as American studies). I suggest that there are at least three reasons for this elongated status.

Firstly, there has been an incompatibility between the digital humanities and the institutional expectations of academia. When looking at the history of the field (as humanities computing), it is clear that in many cases the digital humanities could not secure an institutional position that easily accommodated a line of work that was different to most other areas in the humanities. Such work included operating between traditional university structures such as departments and disciplines, engaging with technological infrastructure, and needing to engage a variety of professional competencies for carrying out the work. That humanities computing partly was institutionalized as service centers (with varying degrees of autonomy) and institutes (maybe more akin to humanities centers than anything else) has probably added to the incompatibility. It should also be pointed out, however, that we are concerned with different types of incompatibilities, and that over the

years a discourse of dissatisfaction has developed within the digital humanities about the humanities as a whole and the academy.

Secondly, having an institutional position outside the traditional structures of academia can be central for carrying out certain kinds of work. Traditionally, many digital humanities centers and platforms have operated fairly broadly across the humanities. It is easier to engage with other humanities disciplines without being seen as a competing discipline or as affiliated with a specific discipline such as English. There are thus benefits to this liminal position. Furthermore, the digital humanities has more recently become a platform for engaging with the future of the humanities more broadly. This is an activity that speaks to all of the humanities, not least junior scholars, and which can be easier to organize from a position outside of traditional departments or disciplines. If there is interest in renewing the humanities at large, it simply makes more sense working with the traditional disciplines from an in-between position, rather than from a distinct disciplinary position.

Thirdly, the digital humanities currently brings together a range of epistemic traditions, disciplines, and perspectives. The lively dialog in and about the field is partly a consequence of this multivocal situation, and the variety of positions makes institutionalizing efforts difficult. Bringing together different traditions requires a great deal of negotiation, and the formation of a new discipline normally leads to a decentering of particular disciplinary identities and eventually to the establishment of a distinct epistemic regime. There can actually be a considerable strength in an unresolved situation, as it is easier for different knowledge communities to gather around boundary objects such as the digital without having to become institutionalized as a discipline. Arguably, this will also produce stronger scholarship than if the digital humanities attempts to operate from a more closed-off position.

It is not surprising that there would be an interest in turning the digital humanities into a discipline, given the history of the field and the institutional template of academia. This is one way of sorting out the field, but not the only one, and while there is no single solution, I argue that the very reasons why the digital humanities may be seen as unstable are actually good reasons for not moving in the direction of becoming an institutionalized discipline.

A provisional analysis of the current state of affairs

A major development over the last couple of years has been a substantial expansion of the field, larger institutional support, many more actors, and a range of new expectations. This has led to a substantial pressure on the field as traditionally conceived, which is unsurprising given the history of the field as a fairly narrow (but important) enterprise and given the current visibility and attraction. This pressure comes from humanistic traditions with a digital engagement that have not been seen as a major part of digital humanities (such as new media studies and rhetoric and composition), from incoming scholars in fields such as gender studies and media studies, and from humanistic and institutional leadership. There are also alternative digital humanities platforms with different notions of what the field can be, such as the Postcolonial Digital Humanities movement and the Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC).

The part of the digital humanities community that identifies with a 40- or 50-year-long tradition sometimes makes the point that their past struggles, often related to being institutionally marginalized, are not acknowledged and that there is a risk of giving away what the field has achieved at a point when there is finally leverage and support for the digital humanities. In a provocative *Humanist* post, Craig Bellamy (2013) opines that:

> Sure I am being a gadfly, but if anyone can use the term "digital humanities" for what ever purpose (and others will believe them), then the past 40 odd years of work in this field will be wasted.

While this is almost certainly not a representative standpoint of the community, it is important to acknowledge that a tension does exist here, and that this tension is not only about institutional prestige or resources, but also about epistemology and different epistemic traditions.

It would be wrong to assume, however, that this expanded variety of digital humanities is mainly a result of interested parties coming to the field at a time when it has considerable traction. Rather, the digital

humanities organizations, mainly coming out of humanities computing, were part of taking on this new role for the digital humanities. In particular, a group of key members of the humanities computing community worked towards forming the Alliance of Digital Humanities Organizations in the early 2000s, publishing the Blackwell *Companion to Digital Humanities* (Schreibman *et al.*, 2004), renaming the annual conference series (from the joint annual conference of the Association for Computers and the Humanities and the Association for Literary and Linguistic Computing to Digital Humanities Conference) and were also influential when the National Endowment for the Humanities created its Initiative for Digital Humanities in 2006. There was apparently a realization that humanities computing would not be the flavor of the 2000s and that another scope and packaging were needed. An intriguing question is to what extent humanities computing leadership realized that they were also staking out a pathway that would eventually decenter their own community. There was resistance inside and outside the leadership group and, at times, fairly heated discussions (Svensson, 2016). In any case, at least parts of the larger community did not embrace this reorientation, or more likely it was simply not clear that a shift in names would be more than exactly that. It would also seem that much of the institutional groundwork did not actually change, and that the grounding in the epistemic tradition of humanities computing prevailed.

The pressure described at the beginning of this section has stimulated, and even forced, some more considerable change. This is partly a result of the digital humanities now being a more diverse set of communities, but also because of discursive changes and actual reorientations. The uptake of the idea of big-tent digital humanities is an example of this shift, but arguably with minor impact. As I have argued elsewhere, the tent is still largely made of the same kind of epistemic fabric and is seen as exclusionary and territorial (Svensson, 2012). Indeed, some of the moves by the digital humanities organizations can be seen as aggressive at a time when it is more important to focus on discussing the core values and directions of the field. While the big tent is not overly aggressive as a discursive construction, the global territorialization of the field is more noteworthy in this regard. Again, this concerns a series of name changes and also new territories being added to the map. Examples include the renaming of the Association for Literary and Linguistic Computing to the European Association for Digital Humanities in 2011, and the recent

addition of Australasian and Japanese associations.

I am not arguing that there is anything wrong with this territorial reconfiguration and expansion, but given the tension and pressure already indicated, these moves can be seen as challenging. An illumining example is centerNet, which describes itself as "an international network of digital humanities centers." It assumes that the center is a key building block for the digital humanities. Furthermore, it is clearly embedded within the traditional digital humanities organizations, and thus cannot be said to represent the digital humanities outside these traditions, although it can be seen as attempting to spread this model throughout the world (essentially exporting a specific model of digital humanities). Additionally, centerNet strives to represent the digital humanities in a number of strategic contexts such as the Consortium of Humanities Centers and Institutes and several European-level initiatives. While each of these points is part of the seemingly successful and defendable institutional strategy of centerNet, a central question is whether this strategy is the best given the ongoing negotiation and reorientation of the field. However, it may be that centerNet is currently moving towards a less territorial stance. The composition of the newly appointed editorial board for *DHCommons*, a centerNet publication, is diverse and fairly inclusive.

The digital humanities is obviously much more than the tradition of humanities computing and the associations that descend from this tradition, but this particular tradition is institutionally significant. It is understandable that it did not automatically embrace large-scale changes that might not be compatible with what was seen as the core orientation of the field. One point of tension deals with the discourse associated with some of the other actors, including organizations such as HASTAC, which partly focus on the reformation of the university and the digital humanities as a transformative agent. Such discourses sometimes do not touch ground and can be a way of using the field as a tool in an institutional fight to leverage the humanities. These are important goals and sentiments, but there can be a real gap between on-the-ground computational work and far-away institutional visions. Similarly, initiatives such as Postcolonial Digital Humanities take for granted a critical (and important) vocabulary of power, postcolonialism, genealogy, discourse, gender, and globalization. This vocabulary may not feel familiar to a community not normally engaged with this kind of

discourse. This is not just a matter of the actual issues at stake, but the penetrability or impenetrability of discourse and practices surrounding different epistemic traditions. Interestingly, the working definition of digital humanities employed by the Postcolonial Digital Humanities website is “a set of methodologies engaged by humanists to use, produce, teach, and analyze culture and technology” (Risam and Koh, undated). This definition could be said to be imposing a methodology reading on the digital humanities as a field that is more akin to the humanities computing of the past than present-day digital humanities, and hence locking digital humanities in a form that is arguably by definition less susceptible to their reformational agenda.

I argue that all the perspectives discussed up to this point are important to the digital humanities, and that the coming together of these and other epistemic traditions is critical to the further development of the field. This does not mean that the integrity of such traditions should necessarily be challenged, but rather that everyone will have to adapt to some degree and there have to be sites and affordances for this exchange to actually take place. Such processes will be looked at in more detail in a later section, but for now it is worth pointing out that such adaptive work requires a common purpose, willingness to engage, and some degree of humbleness.

Accepting the challenge

Critiquing, historicizing, and contextualizing the digital humanities is important, and there is a growing literature contributing to this understanding. There is a risk, however, that this work does not actually impact the field in that it does not necessarily go from critique to any suggestions on how to move forward in any comprehensive and sophisticated way. There is also a risk of getting caught up in binaries and specific epistemic positions, not least when debates are quick and heated.

This is not to suggest that the community (to the extent that there is a single community) is incapable of handling the situation, or that there is an easy solution (to the extent that there is anything to solve), but that the digital humanities composes a complex and intriguing construct with considerable potential and leverage. Needless to say, the digital

humanities is not the only complex institutional formation. Another example is the development of American studies from the 1920s onwards, which has been characterized by a series of debates and institutional strategies (Klein, 2005: Chapter 7). Lucy Maddox argues that because of the uncertain status of American studies over time, there has been a critical examination not least from within about "its methods of inquiry, its aims, its intellectual coherence, its relationship to other disciplines and fields of study" (1999:viii). This description resonates with the situation of digital humanities. There are certain factors, however, that contribute to the potential for the field not to get as fully mobilized as other fields, including institutional incompatibility, a large epistemic range, epistemic technologies, the epistemologically aggressive stance of some individuals and some institutional actors, and substantial internal and external pressure.

Melissa Terras poses an interesting challenge in a text on critiques of the digital humanities and how to be constructive about solutions (from the point of view of her work in ADHO):

> Most people "within" Digital Humanities … are people who want Digital Humanities to be as open and as great as possible. This whole field has been built on the hard work of many academics who have given up their free time to try and entrench the use of computing in humanistic study into an academic field of enquiry, and it wouldn't exist without them, even if the form it exists in is currently imperfect. I would say, from where I sit on various committees, that people want to keep DH growing, and growing healthily. So if there are things wrong with DH, then do give concrete examples, or propose concrete solutions, so they can be taken forward. They're listening – we're listening.
>
> (Terras, 2013)

While this is a laudable attitude, the argument is also embedded in the institutional frame of digital humanities and its history. It is not as simple as everyone wanting the field to be "as open and as great as possible," since "open" and "great" are keyed to one's epistemological position. This is why the big tent of digital humanities is not as open as it may seem at first glance. Regardless, Terras's challenge is a worthy one, and the rest of this chapter will be an attempt to respond to this challenge. One point of departure is that the best and most effective way to develop and renew

the field is to work with the ADHO. While it would have been possible to propose a wholly new organization or framework, the ADHO seems like the best possible platform (at least at this point). Also, it would make little sense and show little respect to respond to Terras's challenge through choosing not to engage with the ADHO.

The response will be on different levels of concretion. An initial discussion of epistemology will lead to a contoured model of the digital humanities. This model will then be used to discuss specific issues, and whenever possible, solutions will be suggested. Again, as I have argued, there has to be an awareness that there is not one solution, and that some of the problems may not actually be problematic. The solutions suggested, or any attempt at comprehensively renewing the digital humanities, will need be embedded in a set of strategies to actually make such renewal possible. A number of such strategies are proposed in the code of conduct and list of action points that end the chapter.

On the epistemology of the digital humanities

In a study of archaeological research with a strong technological component, Matt Ratto (2012) investigated situations where multiple epistemic traditions come together, and when technology plays a significant role. The research carried out by the archaeologist in the study was refuted by three communities for three different reasons, and Ratto uses the term "epistemic double-binds" to describe this situation. The concept of epistemic double-binds describes the inability to fulfill the simultaneous requirements of several knowledge communities (2012:579). Ratto's case study concerned the technology-rich reconstruction of pre-Roman temples with a particular focus on the terra cotta roofs, where a key concern was to challenge the standard explanation of images on the façades of such temples. They had been seen as propaganda for cultural elites, but this view was challenged through a virtual-reality construction, which seemed to demonstrate that the elite could not actually see the images. The traditional classical and terra cotta archaeologists were hesitant to see the reconstruction as a legitimate statement about the past, while more technologically oriented archaeologists argued that the reconstructions were not realistic enough.

A third community, computer programmers and scientists, did not find the reconstruction innovative on a technological level. However, it could be argued that the refutations are also in fact an indication of success in the sense that the investigated project apparently challenged three traditions at the same time. While this is not necessarily a guarantee of the quality of the work, the response demonstrates engagement across epistemic traditions (including the "home" discipline).

Ratto usefully points to the difficulty of bridging between technically inflected and humanities-inflected epistemological conditions. Modeling, visualization, and simulation technologies can be said to be epistemic technologies. Through their epistemological embeddedness, such technologies can point to fractures between and within humanities disciplines, and they can also reinforce and develop positions within scholarly domains (2012:568). Since the digital humanities is a technologically embedded field, epistemic technologies are bound to play a significant role. For instance, markup and encoding technologies impose certain ways of seeing and interpreting the world, resulting in clashes between the computational expertise associated with making such structures and some disciplinary scholars who find incompatibility between their work and standardized encoding schemas. And digital humanists coming from gender or postcolonial studies may oppose the computational paradigm and the encoding structures because they see little recognition of the structures of power and oppression built into encoding schemas. Similarly, computationally driven enterprises such as cultural analytics and maker labs are deeply embedded in terms of their epistemology. A traditional art historian encountering a video wall visualization of a subset of artwork may not accept the argument that the visualization will allow open-ended critical explorations of art. Activities such as maker labs, hackathons, and that-camps embed ideas about technologies and the world that do not often seem to be steeped in the real world. As Mattern (2013) points out:

> not only does the hackathon reify the dataset, but the whole form of such events – which emphasize efficiency and presume that the end result, regardless of the challenge at hand, will be an app or another software product – upholds the algorithmic ethos.

A fair degree of work produced in the digital humanities does not get to the point of double-binds, as there is too little in-depth critique across

knowledge communities. There may therefore not be a constructive way of preventing or resolving such binds if they were to occur. There is often critical and epistemic engagement coming from only one position, and often this is not the "home" discipline or area (outside the digital humanities). By and large, the humanities as a whole has had little interest in engaging deeply on a critical level with the work produced within the digital humanities. Overall, the critique tends to be shallow as a result of being caught up in binary oppositions, structural issues, and institutional parameters. Also, it would seem that there are other factors restricting in-depth critique. The communal sensibility and sometimes defensive stance of digital humanities (in particular as humanities computing) can restrict a more nuanced critique from that group, and a lack of engagement with the materiality of the digital in traditional disciplines may preclude a knowledgeable engagement with such work (or elicit a blanket negative response), even if it is based in the discipline. If a project or argument based in a humanities discipline gets a blanket rejection from both the discipline and the digital humanities (as humanities computing), we are concerned with an epistemic double-bind, but one that probably does not show the depth of the critique presented in Ratto's case study. It is also possible that the digital humanities more broadly (not humanities computing) would reject the project or argument as too disciplinary or too technological, and then there would be a three-part refutation. An interesting question is whether resolving the double-bind is always the most productive strategy. Not ending up with epistemic double-binds may be an advantageous goal, but if the critique is too bland and unitary, there might be a lack of interpretative and conceptual depth. Ultimately, however, going through a process of establishing epistemic double-binds and then resolving them would seem most transformative.

Where does this lead us? For one thing, the field always seems to fail to deliver on at least some level, whether it be intellectual robustness and citations in top journals; degree of openness; technological, theoretical, or material engagement; disciplinary recognition; institutional status; public engagement; or possibly quality of the work produced. While there will never be – nor should there be – a full solution, the response could be to dig deeper epistemologically and cherish the differences, rather than to institutionalize the field as a more unitary discipline. In many ways, the digital humanities is already a place for this kind of work, but

the lockups described earlier seem to block some of the potential of this position. Becoming a discipline might result in an avoidance of double-binds and epistemic challenges, but such a development appears unrealistic and is not the best way to develop the field. It seems that the different traditions are just too dissimilar and institutionally unlikely to come together in a tight disciplinary formation. I argue that the coming together of different disciplines, traditions, and modes of engagement in a looser configuration can be quite productive. Furthermore, a liminal position is also useful for being able to challenge different actors and to be engaged in a renewal of the humanities.

I advocate an epistemologically open field that has an institutional core with integrity and an ideational foundation, and works with the whole of the humanities and outside actors. It accommodates several overlapping modes of engagement between the humanities and the digital (study object, tool, medium of expression). Many members of the community are affiliated with both the digital humanities and a field, whereas others are based mainly in the digital humanities. Importantly, this institutional core incorporates members coming from the tradition of humanities computing as well as humanities disciplines and other traditions and specialties. While much work is placed between different traditions, there is acceptance for both specialized humanities computing work and monograph writing as well as many other practices, and these ideally engage with each other through a shared platform and identity.

The field is thus simultaneously a place for disciplinary engagement and for intersectional epistemic work. As noted previously, many of the tensions and institutional challenges associated with the digital humanities can be related to this intermediate position. I have argued that instead of abandoning such a position, we need to embrace and develop it. The epistemic tension demonstrated by Ratto's work can indeed be useful or even necessary to carry out some work between the humanities and the digital.

There are some frameworks that can be useful when exploring this intermediate position. Work on trading zones can illuminate how epistemological boundary work is carried out (Galison, 1999). According to Galison's work on physicists from different paradigms, knowledge communities can be coordinated around objects of study, even if they disagree as to their understanding of the objects under study and the

exchange process. One important point here is that agreement is not always possible or necessary. However, the transactional metaphor at play here can seem to underplay the dynamic, critical, and emergent qualities of such operations. The concept of temporary autonomous zones is very different in this sense (Bey, 1991), as it stresses zones of free culture at the fault lines of controlled systems (often political). Emergent creativity and work on the boundary lines are key parameters, and the work on temporary autonomous zones can inform the digital humanities about the importance of agility and not being institutionally too stable. However, the digital humanities will always be more institutionalized than such zones. Indeed, it would seem advantageous for the digital humanities to embody both systematic epistemic work around shared objects and some of the dynamic and creative qualities associated with temporary autonomous zones. The work done by language and power structures in intersectional work is further explicated by research carried out on contact zones (Pratt, 1991). There is a sensitivity required to facilitate such zones and, in particular, the framework stresses the importance of being sensitive to cultural, social, and linguistic identity and context. There is also a realization in Pratt's work that there is a need for social and intellectual spaces for sub-communities. She says that such spaces can be used to "construct shared understandings, knowledges, claims on the world that they can then bring into the contact zone" (1991:40). This finds echoes in Ratto's argument that we need to overcome differences without removing them fully (2012:582).

Towards a code of conduct for the digital humanities

Overcoming differences without removing them takes work and sensitivity. All of the frameworks for intersectional work described in the previous section draw on the notion of a community with shared values and sentiments. This does not imply that all issues are resolved, but that there are guidelines for how to work together. One way of formalizing such guidelines is through having a code of conduct for the digital humanities. Such codes can be powerful in that they ideally capture and define modes of engagement, common sentiment, and rules that are

accepted by a community and are necessary for being a member of that community. It is not a matter of single statements so much as a number of statements that together constitute the code of conduct. At times, individual statements can seem to be simple, taken for granted, or just naïve, but the job of a code of conduct is exactly to make transparent what is expected. Sometimes the things about ourselves that we take for granted may not actually carry over into action or personal and institutional awareness, and a code of conduct can remind us of shared values even when we overstep. I suggest that the following list can be the beginning of a code of conduct for ADHO and for the digital humanities more generally:

1. Attempt to enact an open, inviting, and largely non-territorial field, while also demonstrating integrity, sharpness, and a willingness to push on epistemological boundaries.
2. Acknowledge the different levels at which scholarly, technological, and institutional work has to be carried out, and encourage the digital humanities to operate between these levels.
3. Engage with technology practically, creatively, and critically.
4. Do not assume that there is only one model of the digital humanities, or that the digital humanities is only one tradition.
5. Do not attack arguments or positions without having attempted to understand the position or argument under attack.
6. Be reflective about the discursive and intellectual framing provided by your own epistemic tradition (or traditions).
7. Recognize the embeddedness of epistemic traditions, and that they relate to practice, expressive modalities, and materiality, as well as ideas, theories, and methods.
8. Humbleness and constructiveness are useful qualities in negotiating different epistemic traditions and positions.
9. Be aware that there are certain issues that are epistemologically loaded, and try to acquire a good sense of their context and history before bringing them up in interdisciplinary exchange.
10. Be prepared to be pushed out of your comfort zone, but also to work within your comfort zone in a diverse and constructive setting.

1. Harassment, intimidation, or discrimination based on race, religion, ethnicity, language, gender identity or expression, sexual orientation, physical or cognitive ability, age, appearance, or any group status is unacceptable.

Actionable suggestions for the digital humanities

While the code of conduct provides an important foundation, it does not address Terras's challenge sufficiently. In the following, I aim to provide conceptually grounded and actionable suggestions as a response. While these are a response to the challenge, they are also a more general attempt at outlining a path forward for the digital humanities in an intermediate time perspective.

1. Embrace a notion of the digital humanities as a contact zone with integrity that can host a variety of epistemic traditions, modes of engagement with the digital, infrastructures, and institutional models. This is essentially a non-territorial model by which the digital humanities has integrity as well as a close, multilevel collaboration with humanities disciplines and other actors. This requires curatorial qualities, deep intellectual–technological interchange, an openness to other traditions, and a willingness to go beyond the big-tent idea of the digital humanities. Curatorship is needed to maximize the benefits of the coming together of many traditions and epistemic positions. Intellectual work involves the profound interweaving of the critical and the technological. There has to be an openness to other perspectives and no expectations that specific traditions should abandon their epistemic core, but there will be adaptation. The big tent has to be replaced by something that is not steeped predominantly in one tradition.
2. Tone down the aggressive and territorial rhetoric and action (in all camps). This does not mean that there should not be sharp and engaging dialog, but hopefully the interaction can be characterized by first trying to understand the other position before engaging in critique, and by seeing the digital humanities as a place for different

epistemic positions. This also implies understanding your own position and the particular situatedness of concepts and ideas (such as "collaboration," "nice," "making," "genealogy," and "criticality"). Critically, this is not about always being "nice," although niceness is important, but about facilitating meaningful and constructive dialog. Concretely, a code of conduct can support such a development (see the previous section). The goal is not epistemological merging, but coming together from different traditions and engaging richly across these. In any case, it probably makes sense not to start with the most unresolvable issues.

3. Instead of building a new platform for the digital humanities, it would be advantageous to draw on the rich infrastructure, history, and political competence of the largest digital humanities organization. ADHO has a strong institutional position and is responsible for some of the main infrastructures of the field (the annual conference series, journals, etc.). As part of the renewal, half the positions on the board could come from outside the core constituencies and traditions. This would be a major change, of course, and it will have to be carried out sensibly and with respect. The field would have to retain integrity, which means that the new organization would have to draw on people and partners that are sympathetic to the idea of a renewed digital humanities.
4. Use the annual Digital Humanities Conference as a platform and testing ground for renewal, and consider making an upcoming conference into a primary testing ground. The experimental stance of digital humanities can be enacted through the format of the conference too, exemplifying the ways in which the digital humanities can manifest ideas, infrastructures, and expressions. Ideally, the conference following this one would be a good time to announce the implementation of a new charter for ADHO.
5. Work with other organizations and fields in order to manifest and sustain digital humanities as a key platform for engaging with the humanities and the digital: memory institutions, all humanities disciplines, other platforms for the humanities (such as humanities centers and the 4humanities initiative), some interpretative social science institutions, technology and science fields, intersectional fields such as gender studies, and organizations such as HASTAC. Double or

triple affiliation can be a very useful institutional strategy. People are not restricted to one identity in any context. For instance, HASTAC scholars (graduate students supported by HASTAC and their local institution) so inclined could have an extra affiliation with ADHO. A professor at a humanities department can have a secondary affiliation with a digital humanities institution. Actual institutional configurations and possibilities vary considerably, but the basic idea of multiple affiliations and being a contact zone can be implemented in very different ways. Also, there can be a rich collaboration with individuals who are based elsewhere, but do not have a formal affiliation with a digital humanities initiative.

6. See the digital humanities as a platform for the humanities. This does not mean that every digital humanist or digital humanities institution has to engage with the long-term future of the humanities, but rather that they should acknowledge and embrace the fact that the digital humanities can have this function. It is an opportunity and responsibility that comes out of seeing the digital humanities as a liminal zone. This function cannot be forced on any institution, but through empowering others and being open to dialog, the digital humanities can secure this place. Obviously, there can also be other institutions that function as platforms for the humanities.

7. Engage with infrastructure critically and creatively. There is a need for a humanistic framing of academic infrastructure, and despite several attempts, there is a great deal of work to be done for the infrastructural vision to match the notion of an open, inclusive, and intellectually driven digital humanities. Infrastructure is also an example of where the digital humanities can help the humanities as a whole, and where there can be significant mutual benefits. Humanists need better ways of understanding and packaging infrastructure, but also need to mobilize the critical potential of their own work to situate and problematize their own infrastructure. In this way, academic infrastructure can become an example of where critical perspectives and concrete building come together. This would seem a worthy challenge for the digital humanities.

8. Engage with space. We are spatially situated beings, and while academic space is often a precious commodity, it can help channel and situate the digital humanities. Well-designed spaces with humanistic

infrastructure and digital presence can help bring epistemic traditions together and provide a means of engaging critically and technologically. Such spaces do not need to be large or look a certain way. What is important is that they map onto the ideational foundation of the digital humanities initiative in question. Furthermore, while we may not want to talk about digital space, some operations would simply not lend themselves to be physically spatialized. Networked communities, publication platforms, and distributed research environments can also play a significant role.

9. Be sensitive to the importance of institutional specificity. Different institutions are configured, enabled, and constrained differently, and there are significant national differences. For instance, tenure-track systems are not universal and not all institutions of higher education are traditional comprehensive universities, and there is a marked difference between creating a digital humanities platform at a technical university college and creating one at a liberal arts college or a comprehensive university. And the very sense that there should be a center or a platform is built on certain kinds of institutions and available resources. In any case, the field will probably have to think more in terms of national and international infrastructure in the long run, and resources will have to be centralized to some extent, as well as distributed, and there will have to be ways of sharing costs and resources. At the same time, there must be room for institutional and intellectual dissimilarity. Paying attention to the specificity of the local condition is likely to give better return on investment than adopting a generic model of the digital humanities by default. It is therefore important that there is a range of models and examples, and that ADHO does not impose an imprint model on aspiring institutions, whether in the Anglo-American world or outside.

10. Acknowledge the multiple genealogies of the digital humanities. There are many trajectories that have led to present-day digital humanities, and some of these are not part of the official foundational narrative. With the current situation, there are also other fields and disciplines that have a vested interest in the field. Even with an essentially non-territorial model, there will always be some institutional tension, but through not excluding anyone or any tradition, this tension can be productive. The scalability of such a model depends on many actors and interests, and academia is not a zero-sum game. Furthermore,

with a development towards increasing specialization in the field, an open model can better allow and empower subgroups within the context of the digital humanities as a whole.

Most of these points relate to the necessity of having a real awareness of differences in perspectives and epistemic traditions. We tend to take certain aspects of our own traditions for granted, and taking a step back is not necessarily easy. Language and discourse play a vital role here in assigning frames to our epistemic traditions. Let me illustrate this with two examples.

The digital humanities is often described as inherently collaborative, not just the field, but also its technologies, projects, and people. Collaboration is an active and visible parameter in the narrative and framing of digital humanities. Not working collaboratively is often construed as an exception. Lisa Spiro states that the digital humanities community sees collaboration as an ethos necessary for its mission and work, and adds parenthetically, "even as it recognizes that some work is better done in solitude" (2012:25). Similarly, Bethany Nowviskie classifies situations "in which digital humanities practitioners work without explicit assistance or collaborative action" as "edge cases" (2011:170). Also, the kind of collaboration seen as central to the digital humanities is epistemologically flavored. It is not any collaboration, but one compatible with the project-based and technology-rich work processes associated with the tradition of digital humanities. It is unlikely that a standard seminar situation would be seen as highly collaborative in the same fashion. Furthermore, the focus on collaboration in the digital humanities also means that much individual work within the field is made invisible. This is reinforced by an often oppositional scheme between the digital humanities and the traditional humanities, by which the digital humanities is seen as collaborative, while the humanities is seen as being anchored in a highly individualistic model.

Another example is the inclusion or non-inclusion of gender, power, postcolonial, and environmental perspectives in digital humanities work. Adeline Koh and Roopika Risam (2013) argue that such categories tend to be blanketed out in computationally driven work in the digital humanities. According to their analysis, these categories have been largely invisible. This claim can be problematized, but it is certainly true that the field has not been heavily inflected along these axes. This

situation is changing, however, which is partly a result of intersectional work and a broader scope for the digital humanities. An interesting example is the connection between environmental humanities and digital humanities, where there are many potential synergies. For instance, the digital humanities interest in “making” and intellectual middleware aligns well with the exploration of offering alternative narratives of “nature” in the environmental humanities (cf. Galison, 2014). And through the influx of scholars from areas such as gender studies, and the consequential epistemic negotiation, it is likely that there will be a stronger engagement for such perspectives within the community of digital humanities. At the same time, such traditions – when in contact with the digital humanities – will likely have to negotiate their relation to matters such as technological infrastructure, language, materiality, and making.

Conclusion

It seems likely that the next five years will be critical for the shaping of the digital humanities. There are multiple possible pathways ahead, and while there is no definite way of sorting the digital humanities out, I have suggested in this chapter that we need to embrace and develop the liminal position of the field rather than move away from being in between. The big tent will never be big enough, and we need to give up some of the old binaries and move forward as an epistemologically open, intellectually curious, and technologically engaged enterprise. We need to be aware of our own epistemic commitments and be generous enough to try to understand others’ before critiquing them on epistemological grounds. This does not mean giving up one’s own disciplinary anchorage or sense of sharpness, but rather being willing to learn and negotiate. Having a code of conduct can help us identify and foster shared community values.

We need to take time to constitute the field before we attempt to use one particular model of digital humanities as a template to develop the digital humanities internationally. However, it may well be that what we find out

is that it will never be appropriate to simply advocate one model. Furthermore, as a humanities-wide enterprise, the digital humanities can represent the humanities in certain contexts and be an experimental platform for enacting and imagining the future of the humanities. The digital humanities can never be strong enough without working with the rest of the humanities. This does not mean, though, that the field should not have integrity or that digital humanities always has to reach out to the rest of the humanities.

A point about humility too. As a young graduate student in English linguistics, I had learned that the archaeologist Sir Colin Renfrew was coming to my university to receive a scholarly prize. One of my primary interests at the time was the history of languages, and I was quite interested in Professor Renfrew's work and him approaching linguistics from the point of view of archaeology. I contacted him and asked him whether he would be willing to give me an interview during his visit. I was happy he accepted, and I had a wonderful conversation with him. He must have been about 60 years old at the time and was generous with his time. He told me how his interest in historical linguistics and archaeology had made him realize that he needed to have a better grasp of molecular biology. He started to go to molecular biology conferences, and for a long time he would sit at the very back, listening and learning. He said that he had to devote time to getting a sense of the field and current research. After a year or two, he told me, he was actually invited to sit up front and be an active part of the dialog. This taught me about the importance of intellectual humility. Renfew showed respect through taking the time to learn the "language" and more about the field, although he could probably have imposed himself in a much more direct way. There is a lot to be said for such generosity and humility in the context of the digital humanities. And even if we cannot sort the digital humanities out, let's at least try!

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The Promise of the Digital Humanities and the Contested Nature of Digital Scholarship

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Whether engaged in history, literary criticism, philosophy, or philology, scholars in the digital humanities have been concerned with reshaping their scholarly activity and their institutional structures for a natively digital world. They have been open to multiple forms of analysis, to sharing sources and materials (data), and to adopting large-scale, distributed models of scholarship. They have proceeded from an important recognition: that we are now in an era of capaciousness, of ubiquitous storage, of networked information, and of unprecedented access. Rather than orienting scholarship around a model of scarce materials, limited access, and expert gate-keeping, the digital humanities at its most vibrant has been about widening the scope of the humanities, opening access to sources, and broadening definitions of scholarly activity.

As an example, in 2011, the University of Nebraska-Lincoln started an experimental project called The History Harvest. Its main objective was to digitize, collect, curate, and interpret family and community history. Every year students, working with expert faculty, select a community to engage with and undertake a "harvest" of family letters, photographs, stories, and objects. In 2012, The History Harvest focused on North Omaha, birthplace of Malcolm X, a jazz hub in the twenties, and a terminal point for much of the Great Migration. The students invited anyone to bring their family records for discussion and digitization. Dozens of North Omaha residents brought their history: church records, military records, jazz records, photographs, and homestead titles. These records were shared, discussed, documented, and digitized.

One individual, Warren Taylor, brought his great-great-grandmother's pewter folding cup that she carried as a slave in the fields. He also brought her penny, an 1840 "Liberty" penny that she carried with her, a symbol of eventual freedom. Both had been passed down for generations in the family.

The animating premise of The History Harvest, like many digital humanities research projects, is that our digital heritage is fundamentally skewed toward government and elite sources. The base research being conducted in The History Harvest is, therefore, aimed at archival first-order work of digital capture, encoding, and sharing. Building a publicly accessible collection, the project can provide a foundation for the generation of future scholarship on a range of subjects, places, and periods. But, like the digital humanities writ large, The History Harvest will reach fruition when the larger community takes advantage of the specifically digital nature of the collection in order to create new forms of historical discovery and argument. Like many other digital projects, the first-order effort at digitization, collection, and assembly of materials serves multiple worthy purposes. If successful, the project might open up digital humanities methods to smaller partnering institutions, sustain a robust hub of scholars, and expose fresh archives for inquiry at multiple scales of analysis. Although promising and opportunistic, such projects should lead ultimately *toward* digitally native interpretive scholarship.

Yet paradoxically, the twenty-year surge in the digital humanities--from 1993 to 2013--has produced relatively little interpretive or argumentative scholarship. In this first phase of the digital humanities, scholars produced innovative and sophisticated hybrid works of scholarship, blending archives, tools, commentaries, data collections, and visualizations. For the most part in

the disciplines, however, few of these works have been reviewed or critiqued. Because the disciplines expect interpretation, argument, and criticism, it could be argued that digital humanists have not produced enough digital interpretive scholarship and what we have produced has not been absorbed into the scholarly disciplines.

At the core of this matter of concern lies a two-fold contest over the nature of scholarship. Between the core disciplines and the digital humanities there is a difference in kind over whether digital works constitute scholarship. Within the digital humanities, there is a difference in degree over what constitutes *digital* scholarship. In the next phase of the digital humanities, the contested nature of this two-fold problem deserves our attention. Scholars might build bridges to the core disciplines in ways that define their works and give shape to digital scholarship. We might ask what forms of scholarly expression and communication are suited to the digital environment and what qualities and properties do digital works possess. What components characterize digital scholarship? What types of data do digital works feature and how are they arranged? What is the nature of their interpretive salience? How do they function?

Rather than explain the self-evident ways that digital scholarship differs from or extends traditional print scholarship, a question I wish to bracket, we might explore the nature of digital scholarship and the variation it takes. In the digital humanities we have experienced two decades of unfettered experimentation in the form of scholarship. Although such experimentation should continue, genres that can be circulated, reviewed, and critiqued would afford colleagues in the disciplines ways to recognize and validate this scholarship. Properly focused but broadly defined, such genres might alter the disciplinary conversation and appear in venues that provide a foundation for future scholarship in the disciplines. In the next phase of the digital humanities, then, scholars have the opportunity to debate, and perhaps clarify, the qualities and characteristics of digital scholarship.

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The uncertain and contested nature of digital scholarship can be seen in two recent reports on the state of the humanities in American higher education: Harvard University's "Mapping the Future" report and the American Academy of Arts and Sciences' "The Heart of the Matter" report. Each of these reports made extensive recommendations, but neither the Harvard report nor *The Heart of the Matter* report explored in detail the impact of the digital humanities on the disciplinary modes of scholarly research and communication. Harvard's report was telling--it included just a single reference to digital humanities in one footnote in its 53-page document. *The Heart of the Matter* report directly acknowledged "the digital age" but mostly focused on two developments: the rise of open online learning environments and the opportunities that digital projects create for lifelong learning and the preservation of cultural texts and documents.

Citing a handful of digital initiatives, such as The Perseus Digital Library, *The Heart of the Matter* report offered just one, highly instrumental and deterministic, statement on the possibilities of the digital age:

> Online resources offer unprecedented opportunities for scholars to frame topics of public interest, to participate in a wider community of public intellectuals, and to reach general audiences. The digital world offers vast new possibilities, not only for delivering instruction, but also for facilitating research and for making the past and future possibilities come alive to students of all ages: historic buildings are reconstructed; family trees can be traced; classic texts and manuscripts are made accessible. (Commission on the Humanities & Social Sciences 2013: 52)

From the beginning of the 1990s, however, as the networked possibilities of The World Wide Web became more and more robust, Edward Ayers, Jerome McGann, and others repeatedly argued that we have the entire human record (cultural, written, spoken, performed) to digitize, organize, prepare, interconnect, analyze, and *interpret,* and we have the digital capacities (memory, networks, and protocols) to do so in ways we were only beginning to realize. (McGann 1997, 2001; Ayers 1999) The work of digital scholars, therefore, would not be a simple operation of migration of data from analog to digital, as envisioned in *The Heart of the Matter* report. This effort would be a humanistic scholarly endeavor, a process of assembling, encoding, editing, and interpreting. It would demand us to consider anew how we represent knowledge, and it would require newly trained scholars and practitioners who had fluency in the hardware and software technologies of the digital medium. These digital scholars would attempt unexpected, non-traditional forms of scholarship, and their work would not fit within the well-established confines of the monograph or the academic journal. Instead of merely facilitating research, digital technologies would shift the definition of scholarship and digital scholars would invent new modes of interpretive argument and criticism. "A major goal of mature hypertextual history," Ayers wrote in 1999, "will be to embody complexity as well as to describe it." (Ayers 1999)

Many scholars in the digital humanities began to see themselves as, and to act as, an open community of practice, including anyone whose energy, expertise, and enthusiasm aligned with theirs. Rather than to conceive of their project as necessitating a separate discipline or field, digital humanists worked within the disciplines from a loosely defined set of common methods, all concerned with a broad recognition: that humanistic understanding and inquiry was being reconstituted in digital form through digital technologies.

The first twenty years of the digital humanities, then, saw widespread experimentation around three orders of scholarly activity, each building on and in relation to the other, each sometimes pursued within the other:

1. *Reassembling the human record in digital form;*
2. *Shaping the affordances of humanistic materials in digital form; and*
3. *Creating discipline-based interpretive scholarship in digital form.*[1]

These scholarly activities could be understood as sequential and yet each could be independently pursued. Scholars built digital archives, layered them with affordances that were premised on interpretive decisions, then wove interpretive scholarship into a digital project. So interwoven were these activities that non-digital scholars could see little that resembled their

expectations for peer-reviewed scholarship. Meanwhile, digital humanists found few reasons, given the contours of the medium, to approach their work differently. (Waters 2013)

Nearly twenty years later, we might ask how far we have come on each of these three endeavors. By some measures, we have not come very far, especially toward the third. A recent overview of digital innovation in scholarly publication in the humanities found that there were few hypertextual works that embodied complexity or altered the mode of scholarly communication in ways uniquely suited to the online space. Ayers' vision, however appealing, was unfulfilled. Innovation in humanities scholarship, Alan Gross and Joseph Harmon concluded, "has been confined, for the most part to sidestream venues; mainstream publication has yet to be seriously affected." The authors found it "disturbing" that after two decades they had found "so little" Internet-based scholarship in the humanities. And even "more disturbing," the innovative scholarship they did find was mostly marginal to the careers of the scholars who produced it, funded nearly entirely through outside agencies, and produced as special projects, "not routine activities." (Gross and Harmon).

One reason for the lack of progress toward discipline-based interpretive digital scholarship has been the continuous vitality of the monographic culture in the humanities. At least in the discipline of history, the monographic form has continued to serve as the principle means by which the profession communicates. Built on the rigorous review of evidence, argument, and narrative quality, this system has produced stunning examples of creative and exciting scholarship. (Ayers 2013a) In addition, journals often serve as the gatekeeper and record of scholarship in the humanities and social sciences, reviewing and critiquing monographs in addition to publishing scholarly articles that shape the discipline's conceptual, methodological, and theoretical frameworks. Yet most journals do not index, review, refer to, incorporate, imprint, or publish anything created solely for the digital medium. Because digital work is rarely featured or recognized in the leading journals, among other reasons, younger scholars have proven reluctant to develop born-digital scholarship, and departments have had difficulty evaluating this scholarship for promotion and tenure. (Ensign 2010; Howard 2012; Townsend 2010) [2]

These barriers to digital scholarship, however, are only the most visible, and they hide the larger epistemological and heuristic questions. More precisely, the problem we face, according to historian Chiel Van Den Akker, is that "the historical monograph no longer seems an appropriate model for historical understanding in a digital environment." In fact, the digital environment supports, indeed demands, new narrative forms that are more participatory, dialogic, procedural, reciprocal, and spatial. Van Den Akker suggests that the "dialogic process" is "what matters most" and what defines online scholarship. He argues that the process of engagement with the reader distinguishes "online narrativity" from the linear narrative forms found in monographic scholarship. (Van Den Akker 2013: 107, 113)

Similarly, Ann Rigney has pointed out the monograph "can no longer be taken as a given." She notes that "in the new media ecologies . . . digitization and the internet offer new technologies for producing and disseminating historical knowledge and, in the process, present both opportunities and challenges." Digital humanists, she argues, have charted a "new theoretical model for viewing historical narrative in terms of its social production by multiple agents across different platforms." (Rigney 2010: 100)

If the new media ecologies Rigney refers to are indeed naturally "multimodal," then they demand new practices in scholarly production. For Rigney, the result is clear: scholarship will be characterized by "distributed authorship" and undertaken through networks or hubs of scholarly activity. Continuous flows of information and analytical procedures will unfold as scholarship. There will be no fixed final product. (Rigney 2010: 117)

Recently, computer scientist Jaron Lanier has suggested a variety of ways that books, authorship, and readership might change in the digital environment. Worrying that we might lose "the pattern of what a book is in the stream of human life and thought," Lanier predicts that books of the future will be crowdsourced, will be written with the aid of Artificial Intelligence software, and will change between readings or between readers. "Books will be merged with apps, video games, virtual worlds, or whatever other digital format becomes prominent," he argues. (Lanier 2012: 354-357)

As a second-order move, digital scholars have emphasized the need for establishing "affordances" embedded in the digital objects being assembled and digitized for humanistic inquiry and research. Affordances might include encoded metadata, enriched markup, specialized interfaces, geo-spatial and locational encoding, programs for sifting through data, and APIs.

The idea of affordances in the digital humanities has been borrowed from several disciplinary theories. The first is ecological psychology, building on the work of James Gibson, a leading theorist in perception, and the term is worth examining. According to Gibson, an affordance is the particular quality of an object or an environment that allows particular types of action. Affordances are also properties of an object or environment that affect the capabilities of an actor, and in this sense, they are relative to the type of actor. In Gibson's well-known example, the properties of a surface, such as the ground beneath our feet, could be either "stand-on-able," affording support for heavy animals to walk or run upon, or "sink-into-able," affording no such support except for water bugs. The affordances, therefore, are relative to the actor, not just abstract physical properties. Gibson explained, "different layouts afford different behaviors for different animals, and different mechanical encounters." But Gibson also developed the theory of affordances to support his ideas of perception, arguing that affordances cut "across the dichotomy of subjective-objective" and point "both ways, to the environment and to the observer." (Gibson 1979: 127-128)

Second, Human Computer Interface (HCI) theorists, adopted the term after Donald Norman used it in *The Psychology of Everyday Things.* Norman considered affordances to be user interfaces with properties that were perceptually salient, and in this way his use of the term went beyond Gibson's original theory. He considered affordances to be perceived by the actor and already known and familiar. They were culturally dependent and shaped by the prior experiences of the user. Norman also suggested that an affordance included the way in which the possibilities of the object are made known to, conveyed, or made "visible" to the user. (Norman 1988)

Scholars in digital humanities have loosely applied the term in both the original Gibson formulation and in the HCI derived sense popularized by Norman. Ignoring the substantial

difference between the two has led to some confusion. Affordances might best be considered properties of digital objects that are relative to the reader rather than uniform. They are not linear or fixed. Indeed, much of the energy and work in the digital humanities community has been framed around building digital objects with particular properties, tools that are inflected in ways specific for humanistic inquiry, interpretive acts, and formulating hypotheses. These efforts have been substantial, and include large-scale digital editing projects, interface design for digital reading, query design, and data encoding. The shaping of affordances has been preparatory to, and vital for, further interpretive scholarship. (Deegan and McCarty: 166)

Janet Murray in *Inventing the Medium: Principles of Interaction Design as a Cultural Practice* explains how the digital medium exploits certain affordances. Rather than settle for remediation of old media into digital forms, Murray encourages scholars and designers to "think more radically." She describes four essential affordances of the digital medium: procedural, spatial, encyclopedic, and participatory. According to Murray, "these four properties constitute our design space, the context for all of our design choices." Every work of digital scholarship can be assessed on the degree to which it maximizes these four affordances. Some works may be more spatial than participatory or more encyclopedic than procedural. Murray's formulation of an "affordance grid" offers a particularly helpful way to categorize digital works. By placing a digital project on the scale of its relative engagement in each affordance category, Murray suggests we can "map an existing or proposed artifact against the larger design space in order to identify opportunities for growth and to predict the direction of media innovation." Affordance mapping entails asking: "What does it do? What can I (the interactor) do? Where am I in relation to the whole? What are the boundaries of this domain?" (Murray: 45, 51, 91)

But even within digital humanities, we are often vague about what we mean by *digital scholarship*. Unsurprisingly, given the strong emphasis on digital humanities as solely a methodological approach, some scholars consider the first- and second-order activities listed above to be *de facto* digital scholarship. Others suggest that any monographs or scholarly journal articles derived from digital modes of inquiry and research also naturally qualify as digital scholarship, even if the final publication of these results takes place in traditional formats and scholarly venues. The former position holds that the digital humanities might undertake tools and methods divorced from the concerns, questions, and understandings in a specific discipline. The latter position appreciates the need for disciplinary grounding but does not recognize the fundamental renegotiation in the form of scholarly communication that the digital medium demands. We might therefore distinguish between second-order and third-order work in the digital humanities and between *digitally informed* scholarship and *digital* scholarship.

Edward Ayers recently provided a useful start: *digital* scholarship is "discipline-based scholarship produced with digital tools and presented in digital form." He has suggested that we need, in fact, to innovate more aggressively and to invest in its creation. "Digital scholarship is the missing part of the cycle of productivity that we have long believed our investments in information technology would bring to institutions of higher education." (Ayers 2013)

Scholarship built on and from digitized sources and presented in digital form would prove appropriate to the digital environment in ways that the monograph no longer satisfies. A robust digital infrastructure for the disciplines used in the service of specific arguments, moreover, would allow the humanities scholar possibly to:

- amplify an argument within nested modules of evidence and historiography;
- simulate the worlds we are trying to reveal in multiple dimensions;
- embody the full range and complexity of the historical problem;
- reveal simultaneity of time, place, and scales; and
- situate multiple perspectives of historical participants, past scholars, and current readers and collaborators.

Although Ayers' definition of digital scholarship is explicitly "discipline-based," most historians, to take one subset of the digital humanities, have remained bystanders in the broader effort to create digital scholarship at any of the three levels. In a survey of historical scholarship for the period 2003 to 2013, compiling an index of over 1,000 digital history scholarly products (blogs, projects, hypertexts, archives, conference papers, journal articles, and web sites), digital activity skewed heavily toward particular institutions and formats. During this period, the American Historical Association annual meeting hosted 281 conference papers or presentations focused on digital scholarship. The number and variety of these papers were impressive, but over 75 were given at just one conference: the 2012 conference when the president of the association made a concerted effort to showcase digital scholarship. With over 200 scholar-led digital history projects and over 50 student-led digital history projects, the scope of digital history scholarship has expanded measurably in the last decade. Yet, nearly all of these projects were housed in a few centers and institutes where digital history has been nurtured and sustained with institutional and social support (George Mason University, University of Virginia, University of Nebraska, Stanford University). (Thomas and Nash 2013)[3]

In sum, the digital humanities across several disciplines has deferred substantive engagement with the third-order problem of interpretation, narrativity, and argument in digital form. Charitably, digital scholars have been concerned with creating frameworks suitable for interpretive arguments; less charitably, digital scholars have been willfully unconcerned with interpretation, argument, and criticism. While some digital humanists have regarded the first- and second-order assembly of digital resources in itself to be an act of interpretation, scholars in the disciplines by and large have resisted this view. In response, digital scholars might not only endeavor to explain the interpretive affordances they undertake but also formulate agreed upon genres for digital scholarship.

The scholarship of the digital humanities largely resides outside the disciplines, but this precarious situation threatens to render either the disciplines irrelevant to the digital future of cultural communication or the digital humanities irrelevant to the future of the core disciplines in the humanities. If we renew our efforts to imagine genre conventions for something we would call digital scholarship, then we could create forms of scholarly communication so robust and well established that a digital work could become an essential work in the field of history or literary criticism.

In this way the digital humanities holds more promise than yet realized--to broaden its methods into the disciplines, to alter the interpretive models in the disciplines, and to shape more fully the means of disciplinary intervention. Digital humanities scholars have been especially effective at creating hubs of network-enabled scholarly activity and engaging students as

collaborators. Greg Crane has recently drawn attention to the need for "a new culture of learning" not only for the field of classics, but also more broadly for the humanities. According to Crane, "we need a laboratory culture where student researchers make tangible contributions and conduct significant research." Crane argues, "the crush of data challenges us to realize higher ideals and to create a global, decentralized intellectual community where experts serve the common understanding of humanity." (Crane 2012a; Crane 2012b) Ayers also recently called for students to participate in a cycle of "generative scholarship." He suggested that students build their work alongside ongoing research projects so that their contributions are assessed, validated, and preserved. (Ayers 2013b)

In the training of graduate students, digital humanities might consider a serious effort to classify digital scholarship to provide a rough typology for those both in the field and outside of it, as a set of definitions for genres suitable to our disciplines. Although digital scholarship is often collaborative and blurs the line between archive, tool, and publication, we might search for common forms of scholarly intervention, train students for these genres, and establish categories of digital scholarship for review in the disciplines. For twenty years, digital scholars have called for experimentation in the forms of scholarship, and the results have been exciting. Concentrating on a few forms, at this important juncture, would support systems of review and evaluation, provide clarity for disciplinary structures of scholarly communication, sustain a common framework for graduate training, and encourage scholars to participate in the creation of digital scholarship.

A few forms of digital scholarship have become relatively well defined and commonly pursued across the digital humanities. They are offered here not as a definitive list but as suitable categories for organizing and presenting digital scholarship.

Interactive Scholarly Works (ISWs):

These works are hybrids of archival materials and tool components, and are situated around a historiographically significant or critical concern. These works often assert a methodological argument as well, demonstrating that the combination of tools and materials serves as a method worthy of applying to the problem. Interactive Scholarly Works have a limited set of relatively homogenous data, and they might include a textual component on the scale of a brief academic journal article. They feature an API for users to access the data and programming directly. Relatively tightly defined in subject, ISWs provide users with a high degree of interactivity in a limited framework. Elijah Meeks and Karl Grossner have recently proposed a definition for these works: "a digital archive . . . a tool for exploring . . . , and an argument about [a subject]. Furthermore, it makes a methodological argument that its representations — its computational model and visualizations — are a useful means for reasoning about [the subject]." (Meeks and Grossner 2012)

Digital Projects or Thematic Research Collections (TRCs):

Digital projects, sometimes referred to as Thematic Research Collections, are perhaps the most well defined genre in digital humanities scholarship. Carole L. Palmer's 2004 review of these works emphasized several qualities, such as their heterogeneous datatypes, structured but open ended, designed to support research, multi-authored, primary sources. Combining tools and archival materials framed around a historiographically significant or critical problem, these projects are sprawling investigations into a major problem. Typically gathering thousands of objects and records from widely varying institutions and in widely varying formats, digital history projects contain "digital aggregations" of primary sources that support research on a particular theme or historical question. Scholars embed interpretive affordances in the collection and use these affordances to open up new modes of inquiry and/or discovery. They are open-ended projects and often support ongoing research by multiple scholars or teams. Often traditional peer reviewed scholarship is derived from the thematic research collection. The next phase of thematic research collections might feature interpretive scholarship embedded within and in relationship to the collection. (Palmer, 2004)

Digital Narratives:

These scholarly works are born-digital, and they primarily feature a work of scholarly interpretation or argument embedded within layers of evidence and citation. They do not and presumably cannot exist in analog fashion. They may be multimodal, multi-authored, and user-directed. They may change between and among readings, either through updates or algorithmic reconstitutions. Unlike the first generation of "eBooks" which transferred analog books into digital formats, these nonlinear, multimodal narratives offer explicit hypertext structures. These works primarily provide multiple points of entry for readers and situate evidence and interpretation in ways that allow readers to unpack the scholarly work. They are highly configured, deeply structured, and strongly interpretive pieces of scholarship. They could be stand alone self-generating web sites, cloud applications, or they could be presented in a media-rich scholarly publishing framework such as Scalar.

Simulations constitute a new form for scholarly research and publication as well. Interpretive decisions are embedded at every level in any simulated, textured environment, and feature a range of media products, including video, audio, and 3D models and game engines. Historical simulations and humanities-oriented games possess varying degrees of interpretive strength. Some are purely representational and feature minimal interpretive or argument-driven analysis. Others offer simulated decision-trees in a game-engine environment with heavily interpretive choices. (Coltrain 2013, McGann and Drucker, 2000) Hybrid media objects that combine text, graphics, live action, and animation sequences also constitute what Lev Manovich calls "a new species" in the digital medium and can be evaluated using Murray's affordance grid as well as the matrix table provided here. (Manovich, 2013) While simulations will likely become in and of themselves a category of digital scholarship with particular characteristics that set them apart from the above types of scholarly work, at this writing they are most commonly used in a supplementary fashion.

In a landmark 1997 study on the future of narrative, Janet Murray emphasized specific qualities inherent in cyberspace, and we may consider in a similar fashion what qualities characterize the above categories of digital scholarship. (Murray, 1997) Assessing the types of data, components, organization, scope, interpretive nature, and character of digital works allows us to separate one category from another. An ISW, for example, differs from a Thematic Research Collection not only because its scope is more tightly defined, but also because its interpretive nature lies in the query structures it provides the reader rather than in the encoded affordances that a Thematic Research Collection builds into its archival materials. The ISW operates around a series of procedural inquiries, whereas the Thematic Research Collection offers open-ended investigatory structures. These characteristics of the categories are not meant to be exhaustive, but illustrative, and as a basis for categorization and review.

Table 1: Matrix of Digital Scholarship (see attached pdf)

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The contested nature of digital scholarship stems in part from an unresolved tension between the digital humanities and the disciplines. Many digital humanists take the position that digital environments demand multimodal, reciprocal, non-linear modes of scholarship. Scholars in the disciplines perceive an inherent contradiction between that form of scholarship and criticism, review, and evaluation. Because criticism has been based on fixity, the fluidity and reciprocity at the heart of the digital environment's affordances suggest that traditional mechanisms of review no longer apply. In other words, if the defining characteristic of digital scholarship is that users make their meanings alongside and in relation to the interpretive framework of the creators, then how do we encourage digital scholars to develop arguments and work critically? More fundamentally, is it possible to conduct scholarly argumentation and conversation in this environment?

In 2004 in *The Companion to Digital Humanities,* Claire Warwick's essay urged scholars to take "into account the culture of long-established print scholarship" and to consider "a new way to see, and thus to perceive the complexities in the process of interpreting humanities materials." (Warwick 2004) The genres for such scholarship were limited in 2004, but in 2014 they are beginning to take shape. The majority of all humanities activity is already and will continue to take place in the digital environment.[4] It seems clear that if digital scholars do not shape the future of humanities scholarship online in the open web, then others will. In short, the grand challenge from nearly twenty years ago is still before the digital humanities. Only now, we have the tools and networks to make progress in ways we did not then. Will humanities scholars continue to produce conventional scholarship only to deposit it online? Or will we fulfill the promise of the digital humanities and take advantage of the networks, spaces, and audiences online to create and refine new forms of our scholarship?

Bridging the gap between the digital humanities and the disciplines will require changes to institutional priorities and practices at all levels by all parties, including the digital humanities community. In the next phase of the digital humanities, scholars may be called upon to play a

more purposeful role in making interpretive arguments, to establish genres of digital scholarship, to engage in meaningful critical review of digital scholarship, and to deal more forcefully and deliberately with the digital divides in our disciplines.[5]

For Further Reading:

Cohen, D.J., Frisch, M., Gallagher, P., et al. (2009) "Interchange: The Promise of Digital History." *Journal of American History*, 95 (2), pp. 442–51. A conversation on the fluidity of history in digital form and non-linearity of digital scholarship.

Darnton, R. (1999) "The New Age of the Book." *New York Review of Books*, March 18, 1999 is a pioneering essay on the possibilities of digital scholarship.

Jockers, M. (2013) *Macroanalysis: Digital Methods and Literary History.* Champaign, IL: University of Illinois Press. A work of predictive digital humanities in the era of "big data."

McGrenere, J., Ho, W. (2000) "Affordances: Clarifying an Evolving Concept." *Proceedings of Graphics Interface*, 2000 offers a useful clarification of the use of affordance terminology in Human Computer Interface (HCI).

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Pressner, T., Schnapp, J., Lunenfeld, P. (2009) "The Digital Humanities Manifesto 2.0," http://www.humanitiesblast.com/manifesto/Manifesto_V2.pdf (last accessed January 2014). A defining statement arguing "Digital Humanities = Big Humanities = Generative Humanities."

Svensson, P. (2010) "The Landscape of Digital Humanities." *Digital Humanities Quarterly,* 4 (1). A detailed exploration of the typologies of the digital humanities and the types of activities at the center of the digital humanities.

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works on "Shaping the West," http://www.stanford.edu/group/spatialhistory/cgi-bin/site/project.php?id=997.

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Abstract:

Numerous recent reports have addressed the state of the humanities, but none have explored the ways in which the digital humanities have expanded and opened up possibilities in the modes of scholarly production. This essay examines the contested nature of scholarship between the disciplines and the digital humanities and within the digital humanities. It argues that between 1993 and 2013 the digital humanities led a widespread effort to re-purpose the humanities for the digital age, where scholarship would take place not in the traditional formats but in the open digital environment. Despite the accomplishments of this twenty-year surge in the digital humanities, this essay proposes ways to organize, review, and critique digital scholarship.

Keywords:

digital scholarship, digital narrative, interactive scholarly work, thematic research collection, argument, interpretation, simulation

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[1] The recent controversies at the Modern Language Association over "who's in and who's out" of digital humanities and the arguments over whether coding is a necessary characteristic of digital humanists have led to numerous efforts to define digital humanities as a field. As defined here, "building" broadly includes both editing and encoding, as well as in some cases, programming. The emphasis here is less on programming as a requirement and more on building digital infrastructures that allow interpretive modes of scholarship.

[2] Indeed, Robert Townsend's 2010 survey of AHA members regarding research and teaching found that nearly half of those polled had considered publishing online, and valued digital publication as a means to reach a wider audience of historians and get their work out more quickly. He also found that those who have not yet published in an online journal, but would consider it, overwhelmingly cited the perception that online scholarship lacks the scholarly recognition and prestige of print publication as the main reason for their reluctance. (Townsend 2010)

[3] The Zotero library, available under the group "DigitalHistory" (http://www.zotero.org/groups/digitalhistory), includes digital history-related projects, tools, essays, and

blogs which we located by systematically surveying the websites of various digital history and humanities centers, university history departments, classroom syllabi, and conducting Google searches for "digital history", "student projects," and variations thereof. We also consulted the CHNM Compendium of Digital Humanities for items relating to digital history. In addition, we have documented 281 papers, panels, and sessions related to digital history presented at the AHA from 2003-2013. This list was compiled by reading through the online programs for the aforementioned years and making note of the topic and affiliation of the speaker, sessions, or panels. Many scholarly associations, including the Organization of American Historians, do not keep past conference bulletins online, or do so only with titles. We used the AHA not only because it is the largest conference, but also because the AHA's web site includes full title and abstract information for each paper, thus producing the most accurate data.

[4] An indicator of the extent of humanities research activity online is *Wikipedia*, a collective effort that began in 2003. Page views in *Wikipedia* climbed to over 200 billion in 2012 worldwide. Over 100,000 new articles are created each day. Wikipedians made over 2 billion edits to the site in 2012. The Library of Congress' *Chronicling America* (chroniclingamerica.loc.gov) alone had over 30 million page views in 2012. Between 2000 and 2006 (the only years for which data are available), the Library of Congress' *American Memory* (memory.loc.gov) page views rose from 228 million to 996 million. See The Annual Reports of the Librarian of Congress, http://www.loc.gov/about/reports/annualreports/ (last accessed January 2014).

[5] The Council of Library and Information Resources (CLIR) has provided essential leadership in calling attention to the need for broader investment in digital scholarship. The Digital Public Library of America (DPLA) has begun to focus national attention on the problem of digital preservation and access.

5
Becoming Interdisciplinary

Willard McCarty

> What makes bad poets worse is that they read only poets (just as bad philosophers read only philosophers), whereas they would benefit much more from a book of botany or geology. We are enriched by frequenting disciplines foreign to our own.
>
> (Emile M. Cioran, 1973)[1]

Being Curious

Temptation to explore the knowable and the ease with which exploring may begin have increased many-fold in recent years due to the Web. As a result, being curious may seem remarkable only in its absence, and only its censure abnormal. Conviction of its utter normality is bolstered by Aristotle's testimony that the desire to find things out is basic to humans,[2] and by Edmund Burke's that it is "The first and simplest emotion which we discover in the human mind" (1757:1). Primatologists and ethologists since Darwin have observed curiosity among "the higher animals ... similar passions, affections, and emotions, even the more complex ones."[3] At least behaviorally, if not cognitively, blurring into the hunger of life for life, it would seem reasonable to suppose that curiosity in some sense does not stop with Darwin's "higher animals" but is synonymous with being or even becoming alive. Konrad Lorenz has written in *The Foundations of Ethology*, on "exploratory behavior or curiosity," that

> A free play of innumerable factors, a play neither directed at any goal nor predetermined by any cosmic teleology, a play in which nothing is

> determined except the rules of the game has, on the molecular level, led to the origin of life. It has caused evolution and moved phylogenetic development in the direction from lower to higher organisms. … It would seem that this free play is the prerequisite for all truly creative processes, for those of human culture just as for those of evolution. (1981/1978:334)

But what individuals and societies actually do with this inherent, biologically rooted if not cosmic tendency to free play is another matter. G.E.R. Lloyd has, for example, detailed the struggle in ancient Greece and China between the freedom to look anywhere, ask anything, and the beholdenness which ensures continuity across time. At the end of *The Ambitions of Curiosity* he concludes that against the constraints they faced these "were often just that, just ambitions. But what ambitions: for in one context after another, they held out the hope of understanding what had never been understood before" (2002:147).

I begin with conflict of the fundamental urge to *know* (in the full sense Heinlein rescued in *grok*)[4] against an equally fundamental resistance so that both remain firmly in sight as I take up curiosity's interdisciplinary manifestations. Given our time and place, this urge to know may only appear in the ghostly form of a mundane duty or means of advancement, and resistance to it be mistaken as an irrelevant historical artifact. The strong inducements from funding agencies and universities to lay claim to interdisciplinary research may wrongly suggest that professionalized curiosity is merely part of an academic job description, that it is only a matter of acquiring "domain knowledge." Hence we may also conclude that the old moral injunctions, weighted with the authority of Augustine and Aquinas among others,[5] against a "blameable … disposition to inquire too minutely into anything" and "inquisitiveness in reference to trifles or matters which do not concern one" – senses the *Oxford English Dictionary* marks obsolete – have no modern form. But Lloyd's careful exploration of the ancient struggle and Lorraine Daston's well-informed reminder that "Curiosity has never been allowed free rein" (2005:36) recommend that while keeping in mind the "free play … neither directed at any goal nor predetermined by any … teleology" we ask not whether but how resistance manifests itself to us and how to equip ourselves for the struggle of the freedom to inquire against beholdenness to disciplines.

In this chapter I will first briefly consider the historical push to

interdisciplinary research and the growth of interest in curiosity in order to justify explicit attention to exploration of disciplines other than one's own. I will then bring the difficulties into focus, and discuss the aims of interdisciplinary research and some practical strategies.

A warning: my approach fits somewhat uncomfortably into the burgeoning literature on the subject, which in the last decade or so has orbited the abstraction called "interdisciplinarity" and devoted considerable energy to its inter-, multi-, trans-, and other relations.[6] I take the view that in dicing and re-dicing the *what*, this literature has not paid enough attention to the *how* (whatever good may have been done for the sociology of knowledge). In consequence it has been less than helpful to the adventurous but inexperienced scholar and to the discussion of changing research practices as a whole. Much of this literature begins with the abstraction and as a result gets stuck in taxonomic debate that from my perspective is a *Glasperlenspiel*.

Recent History of Interest

The term "interdisciplinary" (or "interdiscipline" used adjectivally) goes back to the young social sciences in the early twentieth century. Despite the enormous impetus to and development of interdisciplinary research in the sciences during World War 2, the word was still new enough in 1976 that the founding editor of *Interdisciplinary Science Reviews* felt the need to note that it "is a relatively new term, although its concept reaches back to the beginnings of modern science" (Michaelis, 1976; 2001:310). In 1979 the Association for Integrative Studies was founded.[7] In the following year Clifford Geertz observed for the social sciences that "the lines grouping scholars together into intellectual communities, or (what is the same thing) sorting them out into different ones, are these days running at some highly eccentric angles" (1980:169). Writing in 1988, in a valuable history of the word, Roberta Frank noted that it had "started out with a reasonably bounded set of senses [but] subjected to indecent abuse in the 50s and 60s … acquired a precocious middle-aged spread" (1988:139). That spread has expanded just as interdisciplinary

has become a thing to be taxonomized. In 1990 William H. Newell's edited collection *Interdisciplinarity*: *Essays from the Literature* demonstrated a thoughtful and widespread interest. Now "interdisciplinarity" has the attention of a 580-page *Oxford Handbook* (Frodeman *et al*., 2010) and many other signs of a vigorous industry.[8]

Mainstream attention to curiosity has likewise grown dramatically in recent years. When at the beginning of the 1980s Michel Foucault spoke of his "dream of a new age of curiosity" (1996/1980:305), and Lorraine Daston and Katharine Park published their first study of marvels, prodigies, and curiosities, academic interest in the topic was rare, they noted.[9] By 1998, when their book *Wonders and the Order of Nature 1150–1750* was published, "Wonder and wonders [had] risen to prominence on a wave of suspicion and self-doubt concerning the standards and sensibilities that had long excluded them (and much else) from respectable intellectual endeavors" (1998:10).[10] Since then several other signs of interest have appeared, for example Brian Dillon's *Cabinet* (2000–), a magazine intended "to encourage a new culture of curiosity" (http://cabinetmagazine.org); Barbara M. Benedict's *Curiosity*: *A Cultural History of Early Modern Inquiry* (2001); Neil Kenny's *The Uses of Curiosity in Early Modern France and Germany* (2004) – "timely now that once again curiosity is being nudged into the cultural limelight," Daston commented in her review (2005); and Dillon's 2013–14 traveling exhibition *Curiosity*: *Art and the Pleasures of Knowing*, accompanied by a catalog with essays by him and Marina Warner.[11] "The world at large, in all its glory or stupidity, is wide open for investigation," senior curator Robert Malbert declared enthusiastically in his Foreword to the catalog (Dillon and Warner, 2013:9).

The moment, it seems, is upon us.

Curiosity's Machine and the Individual

Unsurprisingly, curiosity's digital machine has been intimately involved. In a sense this chapter is an educated guess as to the outcome for the humanities.

But we do not have to guess entirely in the dark. Without yielding authority to the physical and biological sciences, we can get some insight from observing changes in them, where there can be little doubt that, as John von Neumann foresaw, computing is bringing about "nothing less than the second half of the scientific revolution" (Glimm 1990:185).

According to many voices at the Blankensee Colloquium of 2007,[12] for example, the pressure to conceive scientific "theories and models … as computable from the outset" has become increasingly difficult to resist. Consensus seems to be that in many areas of research, models and theories "will become decreasingly successful" if not "conceived from their conception as computable."[13] What these sciences do and what they do not do in consequence, or even what becomes inconceivable within them as a result, and so what it means to be a science, would seem in question.

In the humanities, attempts at corresponding algorithmic power for analysis have had limited success at best. The effects of curiosity's machine have come principally through slowly growing digital collections of primary sources and secondary literature. In consequence the great majority of scholars have had less than 20 years to experiment with these effects.[14] During this time they have been lumbered by the weak and operationally misleading analogy implicit in the notion of a "digital library," which has tended to obscure the great differences of action. At one time not so long ago the name of the game for digital collections was "information retrieval," a phrase splicing epistemic data to old library structures and habits. Experts defined the ideal to be the impossible combination of perfect precision (the relevance of retrieved items) and recall (the percentage of relevant items found). But classical information retrieval in fact works quite poorly, especially for the humanities – the disconnect between the meaning we seek and its encoding in character-strings is simply too great. More sophisticated mechanisms do much better by following what our and others' actions show we want rather than what we say we want in Boolean language. They do not so much filter out the irrelevant as more effectively locate possibilities likely to tempt us. The irony is that the failure of these mechanisms (especially the Boolean ones) to aid specialist inquiry offers a far greater though traumatic benefit to scholarship, bringing together, say, articles belonging to English literature with others in theoretical biology,

medieval history, anthropology, and cognitive science. Who could not be curious? I wish I could say, no one.

This I call the default condition of research in the twenty-first century. It is what happens when you, I, our colleagues, and students use JSTOR, for example, though again we may choose to deny the temptations. Some recoil from what they see as infoglut. But from the perspective of research, which by nature cannot arrive at a final *result*, for which the brick-in-the-wall metaphor of knowledge is all wrong,[15] what we get isn't necessarily debilitating chaos but potentially a fructifying though traumatic cornucopia. And so my immediate question is how we are to deal with plenty in the form it now takes.

In other words, the problem that concerns me here is the imminent consequence of so much genuinely meaningful diversity. We are all aware of the threat to focused research posed by centrifugal proliferation of intriguing possibilities. We all know well the frustrations of being lured into time-wasting bouts of online prowling that yield cascades of material as impractical to explore as they are compelling – and unusable unless explored. This, I know, is not strictly new. It is also the peril that has always lurked in any research library. But for obvious reasons it is so much easier to be waylaid, so much easier to succumb. One is so much more likely to encounter material that formerly would have been found on another floor or kept in another, perhaps distant building. So what do you do?

The initial problem is an old one. A well-known historical example of an attempt to deal with it is Vannevar Bush's rearguard response at the end of World War 2 to the "growing mountain of research" which, he said, the investigator "cannot find time to grasp, much less to remember" (Bush, 1945:101; see also Nyce and Kahn, 1991). In celebrating Bush's imagined Memex, however, we tend to overlook the fact that he designed it to aid specialization "increasingly necessary for progress," not to unbind the book, break down disciplinary fences, and all those other things his Memex is said to have inspired. We overlook his view in "As we may think" that "the effort to bridge between disciplines [is] correspondingly *superficial*" (1945:101; my emphasis). Bush's geometrical metaphor (*superficies*, having length or breadth without thickness), though undoubtedly intended as merely a common adjective, makes the point elaborated in another context by Richard Rorty (2004/2002): that the

implicit model of knowledge at work here privileges singular truth at depth, reached by the increasingly narrower focus of disciplinary specialization, and correspondingly trivializes plenitude on the surface, and so the bridging of disciplines. Hence the epistemic question that the Web makes so difficult to avoid: is this plenitude *only*, *necessarily* trivial or trivializing? Must its interdisciplinary pursuit be conceived as mentally enervating? Is depth of knowledge necessarily and always good – or, as we say revealingly, *profound*?

The obvious answer, no, leaves us with a problem of practical epistemology: how then do we do research? Rorty argues from Gadamer that we are faced with an entirely different way of conceiving the pursuit for truth, not going deep to find the one answer but going wide to collect many witnesses, many views, then filtering, sorting, and reclassifying according to the question at hand (2004/2002).

The Aim and the Difficulties

As curious inquirers empowered by curiosity's machine and encouraged to do interdisciplinary work, what is our goal?

I have entitled this chapter "Becoming interdisciplinary" with care, not only to focus attention on individual practice but also to answer the charge leveled against all such work by Stanley Fish in his formidable interdiction, "Being interdisciplinary is so very hard to do" (1989). The title is deliberately ironic: he argues that it is *impossible* to be interdisciplinary, warning his reader off in a relentless, closely reasoned argument.

His target is more serious than the many specious claims to interdisciplinary work and the handwaving that attends them. Fish's concern is with the goal of *achieving* a neutral, *perfectly* interdisciplinary standpoint, and so with the claim to a kind of absolute truth transcending all disciplines – a panoptic god's-eye view from which they might all be observed doing their limited things (The claim to the panoptic view lurks, for example, in the casual rhetoric about "breaking down" the boundaries that disciplines construct and police, to make from a partitioned landscape a great open field of knowledge. Indeed the very idea of the

panopticon is illuminating: see Foucault, 1991/1975; Bentham, 1995; Lyon, 2006.) I think we must agree with Fish thus far, that such a goal is delusional – this side of godhead no such perfect neutrality is possible, and that belief in it is dangerous in its programmatic absolutism. I refer you to his article for the details. But what I would like you to note here in particular is his further, and I think quite wrongheaded, assertion that *attempting* a broader view is therefore not only doomed but also morally wrong.[16] Such a fundamentalist position would by analogy have us argue that one should abandon *any* attempt to be good because achieving perfect goodness is, as we all know, impossible. Just as we, knowing that being perfectly good is unachievable, do not run amok but try our best, should we not strive to extend ourselves beyond what we have been conditioned to know in the ways we have been conditioned to know it? Isn't that what education is for?

Those other than Fish who have considered the problem seriously – I name only Gillian Beer (1996:115–45; 2006), Greg Dening (1996:39–41), Thomas Kuhn (1977:5–6), Marilyn Strathern (2004), Peter Galison (2010), and Myra Strober (2010) – attest that making the attempt is severely challenging. We learn from them all, and from many others who have written on the topic,[17] but my focus here is narrower. Strober's sociological concern is with colleagues in university departments and how they might most productively combine their research interests. Her interdisciplinarity is the collaborative kind. Strathern's anthropological and Galison's historical concerns are with interchanges of knowledge and knowledge-objects between established groups across what Galison has called "the trading zone." Mine here, like Beer's, Dening's, and Kuhn's, is with the individual rather than with groups, with cognitive rather than professional strategies. On the basis of my own experience in making the attempt (but necessarily always falling short), I want to sketch out what is involved. Whether alone in the study or together with others in a research team, the individual faces the same challenge in attempting to take on a foreign disciplinary culture. So, I would argue, the broad relevance of the individual's dilemma to scholarship, whether alone or in teams.

In *Open Fields*: *Science in Cultural Encounter* (1996) Beer reflects a lifetime of experience. "Interdisciplinary work crosses over between fields," she writes: "it transgresses. It thus brings into question the methods and materials of differing intellectual practices and may uncover

problems disguised by the scope of established disciplines" (1996:115). Elsewhere she enumerates the hazards:

> how to distinguish what's central from what's peripheral in this other zone; how to tap into the hinterland of controversy that lies behind the works on the shelf; how to avoid becoming merely disciples because not in control of a sufficient range of knowledge. ... The converse of this is true as well: the problems preoccupying those working in another discipline may sometimes (initially, arrogantly) seem quite simple – because we are not familiar with the build up of arguments across time that has reached this moment of dilemma.
>
> And then, crucially, there is the matter of competence. ... Others have spent years acquiring the skills that the interdisciplinarian needs. Is this a raiding party? Is there time to question and to learn? How much must be taken on trust? Are we accessing others' materials but still applying the mode of analysis learnt in our native discipline, or are we seeking new methods of analysis too? Either of these approaches may in fact yield fruit. And it is essential that we do not abandon the long learnt skills that go with our own disciplinary formation: they will be fundamental in any contribution we can make to new knowledge
>
> (Beer, 2006)

And then there is the profound intellectual trauma that attends the understanding of what is involved. Kuhn (philosopher, historian, and physicist) wrote from his belief in disciplinary incomensurability of "a personal wrench, the abandonment of one discipline for another with which it is not quite compatible" (1977:5). Here Karin Knorr Cetina's term "epistemic culture" is suggestive (1991). It connotes the integrity of disciplines as social institutions, their internal coherence, the respect for them we find in those who have explored most successfully beyond the limits of their own – and the culture shock that movement among them entails.

For my purposes here I take disciplines, then, as autonomous epistemic cultures from which explorations begin and to which they usually return, bringing change with them. Each of them, including the one you start from, is characterized by a "normal discourse," as Rorty has called it. However permeable or open, each thus orbits "an agreed-upon set of

conventions about what counts as a relevant contribution, what counts as answering a question, what counts as having a good argument for that answer or a good criticism of it" (1979:320). These conventions are seldom if ever written down; agreement is mostly or entirely tacit, embodied in works of scholarship taken by consensus to be exemplary – for a time. Rorty notes that his idea of "normal discourse" is a generalization of Kuhn's "normal science," and that, as in Kuhnian science, disciplinary normality is from time to time upset and refigured by revolutionary changes in a field. For the interdisciplinarian these are events to learn from.

Disciplinary normality is policed – sometimes not too strong a term for the passionate attacks on new ideas.[18] More serious is the silent way in which, as Dening notes, disciplines function as "ways of making a blinkered view of the world seem mythically true" (1996:40), hence other views wrong, insignificant, or even undetectable. For this reason, in proportion to differences in its conventions, research in a discipline to which one is alien is difficult to see as good research, or even to see as research at all (Imagine from an old-fashioned philologist's likely perspective what publications in computer science or in cultural studies would look like, and vice versa.) The outsider presenting to insiders is apt to be greeted by incomprehension, misapprehension, indifference, hostility – or, what is worst of all, he or she may not be heard as saying much of anything, as if a tiny insect had flown into the room and was making a barely audible, slightly annoying buzz.

In its etymology, "barbarian" encodes the sociointellectual problem that becoming interdisciplinary aims to overcome.

The Meta-Discipline of Interdisciplinary Explorations

I have argued that the interdisciplinarian cannot get away from his or her discipline of origin, at least not completely, and I have implied that the more disciplines he or she investigates the more diversely enculturated he or she will become. And I have hinted in my reference to epistemic cultures that interdisciplinary exploration itself cannot be innocent of

disciplinary guidance, that there must be a meta-discipline at play, i.e., social anthropology.[19] Let me now bring that meta-discipline into the open.[20]

If disciplines are epistemic cultures in the anthropological sense, then we have not just silos or islands of knowledge but islands populated by communities of knowers, their languages, habits, histories, and artifacts. I referred earlier to Galison's trading zone, which applies chiefly to contact between disciplines motivated, as traders are, by their own agendas. Thus, in the transfer of objects from one to the other, Galison describes "a partial peeling away, an (incomplete) *dis*encumbrance of meaning" (1997:436). The interdisciplinarian may only be wanting a like depth of contact, but here I am assuming the objective to be more than that – to be acquisition of what Clifford Geertz calls, with care, "the native's point of view" (1983). In one place he describes the "characteristic intellectual movement ... [as] a continuous dialectical tacking between the most local of local detail and the most global of global structure in such a way as to bring them into simultaneous view" (1983:69); in another as "a Jamesian hum of buzz and implication ... [a] double image, clarity from a distance, jumble up close" that "critiqued, developed, filled out, moralized upon, and brought to bear on more exact experiences ... turned into my most general conception of what it was that was driving things" (1995:13). For the ethnographic historian Greg Dening, whose Oceanic natives and European strangers vanished long ago, all such explorations are performances "on the beaches of the mind" (2002). *The Death of William Gooch*: *A History's Anthropology* (Dening, 1995) is a magnificent, inspiring example.

By singling out two of the scholars to whom I am most indebted I may seem to be in imminent danger of falling into one of the traps Beer warns us against: becoming a mere disciple "because not in control of a sufficient range of knowledge" – which is, I must admit, a fair warning. But I offer Geertz and Dening not as icons for your mantelpiece but to illustrate the beginnings of a way of finding structure and methodological guidance. The fluid combination of distance and intimacy in interdisciplinary exploration is otherwise very difficult to navigate. One could do *much* worse than those two, though many others have thought extensively about ethnographic practice and may provide better help in different circumstances. But whether there is a more effective meta-

discipline I very much doubt.

The range of possibilities in interdisciplinary research is from theft to assimilation. At the former extreme is Beer's "raiding party," which we can see frequently occurring in the poaching of equations, methods, and other expressions of process from one discipline for use in another.[21] Such is also characteristic of creative artists, who take and adapt with equally little regard for the source. It can be seen in the long-term behavior of disciplines or whole groups of them, for example, the "refiguration of social thought" brought about by a shift of influence from the natural sciences to the humanities (Geertz, 1980). The effects can be disastrous (cf. Franck, 2002). Now, with consensus on the importance of material culture and its "thing knowledge" (Baird, 2004; Daston, 2004; see also Galison, 1997; Gorman, 2010), we cannot doubt that poaching has its not always foreseeable consequences.

At the other extreme is the one-way migration, to establish a new discipline (e.g., molecular biology, digital humanities) or to resettle in an old one as an ex-pat.

Between these two is what seems to me the ideal – a combination, not compromise, of centrifugal freedom and centripetal beholdenness. This is expressed, for example, by Northrop Frye in *On Education*: "every field of knowledge," he writes, "is the centre of all knowledge … [I]t doesn't matter so much what you learn when you learn it in a structure that can expand into other structures" (1988:10). Such would seem what Ian Hacking describes in his role as "complacent disciplinarian" (2004): "not interdisciplinary in the sense of trying to break down disciplinary boundaries, but rather a philosopher who tries to be disciplined enough to pick up what is going on in other disciplines" (Hacking, undated). Sociologist Jerry A. Jacobs' critical study, *In Defense of Disciplines*: *Interdisciplinarity and Specialization in the Research University* (2014), argues that quite contrary to the talk of "silo mentality" knowledge passes quite readily from one discipline to another.[22]

The How

Interdisciplinary research is like the ordinary curiosity-motivated kind in

that it is exploratory and unpredictable within the domain to be explored. But (to paraphrase Beer) because the interdisciplinarian brings into question the methods and materials of a differing intellectual practice, possibly uncovering problems disguised by the scope of the discipline under investigation, the security of that discipline's embrace is unavailable. Again the interplay of freedom and beholdenness: while the constraints of the foreign discipline must be recognized and respected, the interdisciplinarian struggles to be as much free of them as of those belonging to his or her discipline of origin. In a sense Alan Rauch is right, that the help we need is to "find our way in a world that is always already interdisciplinary" (Austin *et al.*, 1996:274) – so long as we understand this to mean both that no one gets it quite right and that no completely right take on it is to be had.

Basic skills that are required begin with the old one of following trails in books and articles through their footnotes and bibliographies, watching for repetition of references to the same source that signals its regard within its discipline's normal discourse. Reviews are an obvious way to measure the reactions of a discipline to new work. Edited collections (despite the ill-deserved contempt in which they are held by "research excellence" exercises) can be invaluable, especially if they set out, as they often do, to give a synopsis of research in the discipline. So also special issues and dedicated sections of journals devoted to themes important to particular disciplines. Deliberately crafted presentations to outsiders can likewise be valuable, for example contributions to the Oxford University Press' *Very Short Introductions* series; overviews commissioned by professional societies for their websites; and explicit gestures from individuals, such as Peter Berger's well-known *Invitation to Sociology*: *A Humanistic Perspective* (1963) and his later reversal in "Sociology: a disinvitation?" (1992). Public lecture series frequently give senior scholars the opportunity to take just such an overview as the interdisciplinarian would wish for: for example, the BBC Reith Lectures and the American Council of Learned Societies Howard Homer Haskins Prize Lectures.[23] Colleagues and friends can sometimes be helpful, but often a native informant will be influenced too much by a particular school of thought within a discipline to be useful.

Native informants are also likely to be so caught up with the current state of the discipline that they not only lack the overview you need but also

miss what I like to call the trajectory of the discipline, its long-term direction or sense of purpose, which they may lack the perspective to see. Looking back to origins may help. In *The Muse Unchained*: *An Intimate Account of the Revolution in English Studies at Cambridge* (1958), E.M.W. Tillyard argues that, "When a new freedom comes into being, the kind of thing it leads to depends largely on the characters of the people who first enjoy it. … Thus it follows that any fitting account … must deal largely with persons and their characters. … It must have as its main topic certain people: by what accidents they became involved … what ideas they had, and how they translated them into action" (11–12). As I've argued elsewhere for digital humanities (McCarty, 2013:46), we know from various sources that social phenomena are marked, often indelibly, by the historically specific contexts of their origins. They are, as we say, *imprinted* (Stinchcombe, 1965; Lounsbury and Ventresca, 2002). So there is strong argument in favor of the writings of founders. A good example of a recent case is cultural studies, for which the works of Raymond Williams and Richard Hoggart are particularly important: for example, for Williams, his luminous essay "Culture is ordinary" (2001/1958). Such originating works may lead to others commenting precisely on what made them foundational, thus Terry Eagleton on Williams in "Resources for a journey of hope" (1989) and Lindsey Hanley on Hoggart in her introductory essay to the recent edition of *The Uses of Literacy*: *Aspects of Working Class Life* (2009).

Just as colleagues and friends may be helpful, so also popular cultural materials, such as, again, for cultural studies, the BBC television drama *The Chatterley Affair*, on the obscenity trial at the Royal Courts of Justice in 1960 against D.H. Lawrence's *Lady Chatterley's Lover*. In that trial Hoggart (played accurately by David Tennant) gave crucial testimony that led, as you may know, to the funding which made possible the inaugural center for cultural studies at Birmingham, by the grateful publisher of the novel, Penguin Books. In following such leads, one strays far from the confines of rigorous scholarship, but so do scholars in their ordinary lives. To paraphrase sociologist Maurice Halbwachs (1992:22) and anthropologist Mary Douglas (1986/1987:45), while interdisciplinary understanding of a problem can draw strength from a base in a socially organized body of people, it is individuals who understand and so must be understood. The group is not mind writ large; rather the mind of the individual is the group writ small and made intellectually coherent.

Digital Humanities

I have so far avoided discussing two things: the particular situation of digital humanities among the disciplines, and cookbook procedures for interdisciplinary research.

The latter I will not do. A comparison of any introductory handbook on ethnographic method to the writings of such as Geertz and Dening will demonstrate how much is lost and how much distorted by reducing a powerful role to a set of rules or textbook account. As Geertz's famous description of the Balinese cockfight makes clear, his and his wife's "sudden and unusually complete acceptance into a society extremely difficult for outsiders to penetrate" did not come from a "generalizable recipe for achieving that mysterious necessity of anthropological field work, rapport" but from their own equally sudden and complete acceptance of village life in a telling moment (1972:4). It's unlikely that interdisciplinary fieldwork will ever be quite as memorable as that cockfight, but the principle is the same and stands persuasively against any attempt to describe how to perform the role this chapter has sketched its way around.

The former, to consider interdisciplinary research from our starting point in digital humanities, is unavoidable in the context of the *New Companion* and important also because this discipline's nature is unique. I can see three ways in which it is, with corresponding points to be made about becoming interdisciplinary.

First, digital humanities is new. Although it has been practiced for over six decades, self-awareness only came to the discipline in the last decade, with the publication of the first *Companion* in 2004 and my own *Humanities Computing* in 2005. Because it is new, the discipline needs help from its peers. Just as physics at its beginning took from the arts and crafts, mechanics and mathematics, and made something different from them, so also digital humanities must take as need be and transform what it takes. All outward explorations from any discipline into others render it vulnerable to being diverted by tacit thing knowledge, as I said earlier, but digital humanities is particularly at risk because it lacks a strong sense of itself. I also noted that its necessary openness to relationships is

another source of vulnerability. To become interdisciplinary means to become radically reciprocal.

Second, digital humanities has (to paraphrase the medieval *centrum ubique*, *circumferentia nusquam*) a centre all over the disciplinary map and a circumference that is at best uncertain. Here is not the place to argue how far the Big Tent extends, nor what activities, if any, or in what sense, belong under it and nowhere else (Pannapacker, 2011). But it is clear that interdisciplinary research is simply how it operates. That fact makes becoming interdisciplinary neither easy nor simple, however. It is not easy, for reasons I have taken pains in this chapter to explore. Digital humanities does not get a pass. It is not simple, because the techno-scientific instrument on which the practice is based means that the digital interdisciplinarian brings the whole inheritance of the Two Cultures to the table. But like it or not, the techno-sciences are part of the conversation.

Third, in consequence of that inheritance, digital humanities offers a middle ground or conjectural space within which, data being simply data, the objects of study dear to the humanities may be treated temporarily *as if* they were objects of nature, like rocks or stars, then the results of that treatment juxtaposed to how we see them and questions asked. I have argued the case at length elsewhere (McCarty, 2007). But the core of it is this: that via the conjectural space digital humanities inherits without surrender of authority to the sciences far more than the debate C.P. Snow started in 1959. It inherits many centuries of now relevant work that has been foreign to the humanities since Galileo.

Coda

My aim here has been to suggest that not just the need to tackle great problems but also curiosity's latest historical moment are with us, that becoming interdisciplinary both rides the urge to know and struggles to hang on against the possibility of being thrown by it. I have put great emphasis on faithfulness to a discipline's self-understanding as countermeasure to solipsism, but at the same time the well-attested history of fruitful poaching cannot be denied.

Is becom*ing* interdisciplinary – always that participle, Dening insisted – a good thing? Anyone struggling to finish a major piece of writing against the commanding temptations on all sides is allowed to wonder. But the cornucopia opened to us by curiosity's digital machine is not a force of nature like the tide. It is a direct consequence of human action, bringing back a dark, riddling answer to an implicit question: what if curiosity were operationalized? We have no clear answer yet but feel the force of the question.

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Notes

1 "Ce qui rend les mauvais poètes plus mauvais encore, c'est qu'ils ne lisent que des poètes (comme les mauvais philosophes ne lisent que

des philosophes), alors qu'ils tireraient un plus grand profit d'un livre de botanique ou de géologie. On ne s'enrichit qu'en fréquentant des disciplines étrangères à la sienne."

2 Metaphysics 980a21.

3 *The Descent of Man* (1871:47), where he dismisses the opinions of "many authors who have insisted that man is separated through his mental faculties by an impassable barrier from all the lower animals". Other keen observers of the natural world attest to what Konrad Lorenz calls the autonomous exploratory behavior of "the most highly organized animals ... [which] can, in subjective phenomenology, be described as curiosity" (1981/1978:292; see also 333–5), e.g., fellow Nobel laureate Nikolaas Tinbergen's *Curious Naturalists* (1969/1958).

4 "to understand so thoroughly that the observer becomes a part of the observed – to merge, blend, intermarry, lose identity in group experience" (Heinlein 1961:287). See all of *OED* s.v. *know*.

5 See *Conf*. 10.35; but note also 1.14; *Summa* Q167; cf. Foucault 1996/1980:305.

6 Not everyone who uses the abstract noun engages in the ontological exercise; my point is that the abstraction raises the question, what is *it*?

7 Now the Association for Interdisciplinary Studies; see http://www.units.muohio.edu/aisorg/ (accessed January 27, 2014).

8 Locating and sorting those signs I leave as an exercise in interdisciplinary research for the reader. But note esp. Fuller (2013).

9 Daston and Park, 1998:9–10. Social history demonstrates that extra-academic curiosity about matters formerly kept hidden or dismissed erupted in popular culture from the mid 1960s; the Swedish films *I am Curious* (*Yellow*) and *I am Curious* (*Blue*), released in 1967 and 1968 respectively, are representative.

10 Academic attention to curiosity blurs into the anthropology and social history of magic, shamanism, witchcraft, demonology, satanism, the paranormal and so on, which show a much less well defined trajectory.

11 For the exhibition see http://www.south-bankcentre.co.uk/find/hayward-gallery-and-visual-arts/hayward-touring/future/curiosity-art-and-the-pleasures-of-knowing (accessed January 8, 2014).

12 For the Blankensee-Colloquia (another good example of recent interest in interdisciplinary research) see http://www.wiko-berlin.de/en/institute/projects-cooperations/blankensee-colloquia/; for the 2007 event, http://userpage.fu-berlin.de/~gab/info/blankensee-colloquium2007.html.

13 Gramelsberger 2011:12 (proceedings of the 2007 Colloquium), paraphrasing Thomas Lippert; see also Humphreys, 2004.

14 See, for example, the first two papers discussing "information retrieval" in the ACM Digital Library, Perry *et al.*, 1954, and Ridenour, 1955.

15 The case does not have to be made for the humanities; for the sciences see Rheinberger, 2010.

16 Liu (2008) is the only other argument along these lines that I know.

17 Apart from Frodeman *et al.*, 2010, see esp. Fuller, 2013, and the many publications of Julie Thompson Klein, csid.unt.edu/about/people/klein (accessed February 11, 2014), e.g., Klein, 1990.

18 For one of the more spectacular examples see the reaction of historians to the importation of computing (in the form of "quantification") from economic history, e.g., Davis *et al.*, 1960:540; Bridenbaugh, 1962; Fischer, 1970:104; Plumb, 1973:64ff; Barzun, 1974:14,158; Stone, 1987.

19 According to David Apter, Clifford Geertz "once entertained the notion of doing an anthropological study of the disciplines as savage tribes" (2007:112). Alas, he did not act on it.

20 Ethnography is standard practice in computer science (see e.g., Crabtree *et al.*, 2012; Nardi, 2010).

21 For the sciences in general see Hacking (2002) on styles of scientific

reasoning. Examples of pattern-finding tests in statistics are numerous and telling; see Hacking (1990). See also McCarty (2005:68–9) on the remarkably migratory Michaelis–Menten equation. Digital humanities is based on the migratory power of methods across disciplines.

22 I discovered Jacobs (2014) too late to take proper account of it. A quick scan of it suggests that its sociological argument, while not central to my purpose, strengthens my case on behalf of disciplines as starting points for intellectual growth. His critical attack on the rhetoric of disciplines as isolating silos of knowledge and barriers to its movement looks telling.

23 For the Reith Lectures see http://www.bbc.co.uk/radio4/features/the-reith-lectures/about; for the Haskins Lectures, http://www.acls.org/pubs/haskins.

32
Beyond the Digital Humanities Center: The Administrative Landscapes of the Digital Humanities

Andrew Prescott

I recently took part in an "awayday" meeting to develop a strategic plan for the Department of Digital Humanities at King's College London. Among the suggestions for improvement of the department made on a sticky note was "NO MORE SPREADSHEETS." It was a fair comment. No one becomes involved with digital humanities in order to ensure that digital humanities projects are more accurately costed or their management made more streamlined. Digital humanities is about creativity and experimentation; they should be a disorganized play space, not a model of managerial propriety. I became interested in digital humanities because I am fascinated by archives and manuscripts, and want to see how digital technologies provide new perspectives on them. Anything that distracts me from that is a waste of time and energy. I do not want to write strategy documents or prepare Gantt charts. I find bureaucratic processes such as research assessment or teaching reviews soul-destroying. I am very bad with money and not a good person to be in charge of budgets, and I am too distracted by research and writing to be a good manager. I do digital humanities because I want to do cool things. But if I want to get the money and resources to do cool things, I need to write carefully costed grant applications, to prepare project plans, and to persuade the university's managers that digital humanities work is worthwhile. To achieve that, I need to fill out spreadsheets, and get others to complete them as well. The spreadsheets are an inescapable part of our condition.

In 1993, Kevin Kiernan and I undertook some digital imaging of a burnt Cotton manuscript at the British Library. Kevin wrote that the experiment seemed "to portend the start of something really big, expensive, and earth-shattering" (Kiernan, 1994). Digital humanities is potentially (but not necessarily) expensive. We have equipment requirements which can go beyond those of conventional humanities departments, as recent use of synchrotron light sources to examine ancient manuscripts illustrates (Morton *et al.*, 2004; Fleming and Highfield, 2007). We generate data which requires a storage infrastructure and specialist staff to manage the data. Ensuring that digital scholarship is preserved and made sustainable over a long period of time requires resources to undertake the curatorial activities of selection, maintenance, and updating. However, the main expense in digital humanities work is not the capital cost of equipment and buildings. If all we needed was specialist digital equipment, we could probably persuade university administrators and funding bodies to buy it for us, as capital expenditure is a nice containable one-off. What makes digital humanities expensive is the people.

Conventional humanities research is still frequently undertaken by the "lone scholar," digging into books, manuscripts, and other cultural artifacts in libraries, archives, and museums. Such research can be fitted into regular research days and university vacations. Many assumptions of university management about scholarly publication patterns and career paths in the humanities are still predicated on a "lone scholar" model, even in newer disciplines such as media and cultural studies. One characteristic of digital humanities is that much of its scholarship is team-based and does not easily fit into such historic administrative structures. Of course, this does not mean that digital humanities research cannot be undertaken by lone scholars. Some of the most important reflexive discussion of how engagement with technology is transforming understanding of history, culture, and society continues to be undertaken in these traditional ways. As the volume of digital materials grows, such critical commentary will become more, not less, important. But digital humanities also involves the creation of digital resources ranging from online editions to 3D reconstructions, and at the heart of the digital humanities is the idea that humanities scholarship can be carried out and expressed in a digital environment, that the humanities need no longer be bound by the technological restrictions of the printed codex. The

conventional academic structures of humanities scholarship are geared to the production of books and articles. As humanities scholarship moves away from the production of scholarship in book or article form, so different administrative structures will be required.

In order to engage in such digital scholarship, teamwork is essential. The principal investigators who inspired and directed the creation of *The Proceedings of the Old Bailey, 1674–1913* (www.oldbaileyonline.org) were legal historians but they needed to enlist many other people to bring their vision to fruition. They required advice from project analysts with experience in the creation of digital resources as to how to approach the material. They used a digitization team to scan the original printed proceedings. These images were turned into machine-readable text by teams of keyboarders. The structure of the XML tags which control the display and search of the digitized text was defined by specialist XML designers. Automated software was used for some of the tagging, but other tagging had to be undertaken by experienced editors with an understanding of the way the XML was structured. A high degree of computer expertise was required for the design of the search engine, the indexing of the data, the creation of the interface, and the mounting of the resource on servers. Again, these various activities were often best undertaken by a team. This complex network of activity had to be tied together with strong project management. Four separate funding agencies provided funding for the development of *The Proceedings of the Old Bailey,* as well as the three universities in which the project was based. The project web pages list 22 people who were involved in its development. The administrative infrastructure required for the creation of groundbreaking digital scholarship has more in common with filmmaking than old-style academic publishing.

It is a commonplace that success in the digital economy depends as much on successful business models as on technological innovation. T. Michel Nevens (2000:81) has observed that "Although Silicon Valley is justly famous for technological innovation, innovations in management approaches, policies and investment strategies – in short, business models – are equally responsible for the Valley's extraordinary economic performance." As is well known, the success of Google depends on its highly targeted advertising, while the resurgence of Apple reflects the success of the business models associated with iTunes. Amazon's initial focus on book selling reflected the fact that books are suitable

commodities for online ordering and dispatch, while the Amazon fulfillment service, in which third parties undertake warehousing and dispatch while Amazon provides the ordering platform, is a good example of an innovative business model in online retailing. Just as with Google, Amazon, or Microsoft, the ability of digital humanities to establish itself as a significant force driving forward the academic world's development of digital scholarship depends on its ability to create innovative business models within the academy. According to Nevens, successful Silicon Valley business models are:

> flexible. They are highly focused … They are talent driven. Technical, marketing and managerial talent are in short supply, and Silicon Valley firms have devised ways to leverage other people's talent as well as develop their own. Finally, Silicon Valley business models are open and fluid.
>
> (Nevens, 2000:81–2)

Notwithstanding the importance of Stanford University in fostering the development of Silicon Valley, universities are generally conservative bureaucratic environments which are far removed from the open and flexible environment of Silicon Valley. If flexibility and openness are preconditions for success in the digital world, can this be achieved by digital humanities units in a university environment?

In recent years, utopian claims as to the way in which digital humanities might reshape the academy (usually the American academy) have become commonplace. The *Digital Humanities Manifesto 2.0* (2009) envisages the emergence of a new institutional topography: "not just disciplinary, but one involving alternative configurations to producing knowledge – open-ended, global in scope, designed to attract new audiences, and to establish novel institutional models." The manifesto imagines the disappearance of the traditional academic department and its transformation into a temporary pop-up phenomenon of "finite knowledge problematics" which "comes into existence for a limited period, only to mutate or cease as the research questions upon which it is founded become stable and their explanatory power wanes." Among the kind of transient departments imagined by the manifesto are a Department of Print Culture Studies, an Institute of Vocal Studies, and a Department of Erasure Studies. This is an attractive vision, but the reality would probably prove less appealing: arbitrarily defined subject areas

reflecting whatever the university's marketing department thinks is the best choice, taught by adjunct staff on short-term contracts. Utopian visions of the sort found in the *Digital Humanities Manifesto* are helpful insofar as they encourage debate about the nature and character of humanities scholarship, but are less useful as a blueprint for the exploitation of the potential of digital technologies to stimulate the production of innovative forms of scholarship.

Commentators have acknowledged the importance of developing appropriate institutional structures to support the digital humanities, but there is little detailed discussion of what these structures might look like. Thus, while Willard McCarty in 2008 surveyed the different types of practice within digital humanities and urged that "the institutional structures we build for the digital humanities should reflect the nature of the practice as it has emerged in the last few decades" (McCarty, 2008:259), he did not develop further what this meant, beyond a recognition that digital humanities was more than a "support" activity. Similarly, Christine Borgman (2009) argued passionately that the digital humanities were at a critical moment of transition from a niche area to a fully fledged community, and stressed the importance of arguing for the development of infrastructure to support this, but was again vague as to exactly what this structure might consist of. The potential contribution of particular areas of the academy to the development of digital humanities has occasionally been stressed. Kirschenbaum (2010) has stressed the particular affinity between English departments and the digital humanities, while Sula (2013) points out that digital humanities also embraces materials and methods of interest to many other disciplines apart from English, and argues that libraries are particularly well placed to develop networks of expertise in the digital humanities.

The administrative landscape of the digital humanities is filled with what McGann (2014:131) has vividly described as "a haphazard, inefficient, and often jerry-built arrangement of intramural instruments – freestanding centers, labs, enterprises, and institutes, or special digital groups set up outside the traditional departmental structure of the university." The directory of digital humanities centers maintained by the international umbrella organization centerNet (http://digitalhumanities.org/centernet) listed in August 2014 nearly 200 separate digital humanities centers across every continent. Similarly, the Humanities, Arts, Science, and Technology Alliance and

Collaboratory (HASTAC: www.hastac.org) has over 400 affiliated organizations. The digital humanities center has provided the main engine for the growth of digital humanities over the past 25 years, and there can be no doubt that digital humanities centers will continue to play a leading role in shaping digital scholarship. This is apparent from two recent reports, a survey of digital humanities in the United States produced in November 2008 for the Council on Library and Information Resources by Diane M. Zorich (2008), and *Sustaining Digital Humanities: Host Institution Support Beyond the Start-Up Phase* by Nancy L. Maron and Sarah Pickle (2014). These works provide the most detailed accounts of the administrative framework of the digital humanities, but most of the examples discussed in them are from the United States of America. To provide a more international perspective, it is also essential to refer to the remarkable series of articles by Patrik Svensson (2009, 2010, 2011, 2012) reviewing the emerging landscape of the digital humanities. Svensson addresses many aspects of the intellectual formation of the digital humanities, but his emphasis on the way in which various digital humanities units function as spaces allowing new forms of intellectual contact and collaboration is vital in understanding the success of the center as a means of promoting digital humanities. John Bradley (2012) has also provided important insights into the philosophy underpinning the development of digital humanities centers in his description of the way in which the Department of Digital Humanities at King's College London was conceived as a unit for the pursuit of collaborative research in which the computing specialist works hand-in-hand with the humanities researcher as an intellectual peer, with none of the distinction between academic and professional staff which so frequently bedevils collaborative work.

The digital humanities center is helpfully defined by Diane Zorich as "an entity where new media and technologies are used for humanities-based research, teaching, and intellectual engagement and experimentation. The goals of the center are to further humanities scholarship, create new forms of knowledge, and explore technology's impact on humanities-based disciplines" (Zorich, 2008:4). Among the characteristic activities of a digital humanities center are the creation of digital resources, the production of digital tools for humanities work, the organization of lectures and seminars, the provision of digital humanities training in a variety of forms ranging from workshops to academic degree programs,

and collaborative work in developing digital skills, expertise, and projects in other departments. While the digital humanities center is not a necessary precondition of digital humanities activity, nevertheless many of the hopes and dreams of digital humanities have in recent years been bound up with the work of such centers. The funding and advocacy of the digital humanities offered by bodies such as the National Endowment for the Humanities (NEH) and the Mellon Foundation has encouraged universities to invest in the creation of digital humanities centers, many of which have quickly built up imposing portfolios of projects. One of the oldest and most celebrated of such centers is the Institute for Advanced Technology in the Humanities at the University of Virginia (www.iath.virginia.edu), which since 1992 has built up a portfolio of over 50 collaborative research projects by faculty from both humanities and computer science departments in subjects ranging from Tibetan literature in the Nyingma tradition to the circus in America. One of the attractions of such centers for university management is that they are often very successful in attracting large quantities of research income. The Department of Digital Humanities at King's College London secured over £8 million in research grants for about 30 projects between 2008 and 2013.

While there is a strong family resemblance between digital humanities centers, almost every center differs in its formal character, with a plethora of ingenious administrative and institutional solutions used by different universities and colleges to create, develop, and maintain their centers. Some are freestanding institutes, administered at faculty or university level; others form parts of existing academic departments, in disciplines ranging from literature to library studies; some are academic departments in their own right; others are treated as support services and are part of the library or computing services; some just consist of loose alliances of local enthusiasts. The disciplinary relationships of digital humanities centers are equally complex: some are avowedly interdisciplinary and float above faculty or school level; others are placed under disciplinary umbrellas. Most longstanding digital humanities centers have undertaken a bewildering institutional journey of change, development and uncertainty in their funding and governance. The Humanities Research Institute (HRI) at the University of Sheffield, for example, arose from the shared location of a number of early humanities computing projects in office space provided by the University Library.

The Arts and Humanities Graduate School provided the HRI with a more formal governance structure through a management committee, leading the HRI to acquire an additional role in promoting interdisciplinary activity. The HRI eventually became one of a number of overarching "supercenters" and was funded directly by the Faculty. However, growing emphasis on its digital services saw it subsequently formally defined as a support service within the Faculty. Many older digital humanities centers can tell similar tales of administrative improvization and adjustment, reflecting a consensus among university administrators that, while it was important that there was digital expertise in the humanities, no one was sure exactly where it fitted in.

The digital humanities center offers many advantages. It provides a clear focus of expertise within the university, a place where academic researchers can easily find authoritative and trustworthy advice on digital humanities. The way in which digital humanities centers develop portfolios of projects covering a wide range of disciplines, countries and periods illustrates to academic colleagues the potential scope of digital humanities and promotes the cross-fertilization of digital humanities approaches across different disciplines. The digital humanities center helps assure the long-term sustainability of digital scholarship by ensuring that standards and technical approaches used by projects are open and sustainable. For Mark Sample (2010), a digital humanities center can be "the chance to work with programmers who speak the language of humanities as well as PERL, Python, or PHP," to share notes with "colleagues who routinely navigate grant applications and budget deadlines, who are paid to know about the latest digital tools and trends - but who'd know about them and share their knowledge even if they weren't paid a dime." In Sample's view, a center is valuable as "an institutional advocate on campus who can speak within a single voice to administrators, to students, to donors, to publishers, to communities about the value of the digital humanities." Digital humanities centers often act as "interdisciplinary 'third places' – a term sociologist Ray Oldenburg has used to identify a social space, district from home and workplace" (Zorich, 2008:vi). Within this "third place," projects and ideas can cross-pollinate, so that the musicologist can see how the approach of (say) classicists to the digital markup and presentation of material is relevant to her. One of the most valuable roles of a digital humanities center is in providing a neutral space for shared discussion,

programming, making and sharing of ideas. Patrik Svensson has described how this interest in creating new spaces of scholarship (an interest shared with librarians) has influenced the development of the Swedish HumLab. There is perhaps a tendency to want to assign fixed functions to a digital humanities center, and a feeling that it should perform a readily defined and well understood role, just like a library or archive. However, as Sula (2013) has illustrated in his thoughtful discussion of a conceptual model to define the relationship between digital humanities and libraries, the boundaries between the digital humanities center and other institutional components of the academy are usually fluid, reflecting not only local institutional structures and strengths but also the evolution of technology and scholarly methods.

The digital humanities center has been the major institutional vehicle of the digital humanities, and this will probably continue to be the case. However, it would be mistaken to assume that the self-funded digital humanities center is the indispensable *sine qua non* of digital humanities. The potential value of funding and infrastructural development by national government or regional agencies is illustrated by the European experience. In the UK, the Joint Information Systems Committee (JISC) of the Higher Education Funding Councils has been very active since the 1970s in promoting many digital initiatives in a variety of disciplines and has been the main architect of the cyberinfrastructure of UK higher education, while the Arts and Humanities Research Council has funded a series of initiatives including the Arts and Humanities Data Service and an ICT Methods Network (although funding for these was withdrawn in 2008). In France, the national service for funding and carrying out academic research, the *Centre National de la Recherche Scientifique*, has supported the development of *Le centre pour l'édition électronique ouverte* (Cléo) which has developed a highly integrated platform for open access academic publishing in the arts and humanities. There have been some major European Union initiatives, such as for example NeDiMAH (the Network for Digital Methods in the Arts and Humanities: www.nedimah.eu), which is mapping the use of digital research across Europe and promoting its coordination by creating an integrated ontology and online forum, and the ambitious DARIAH (Digital Research Infrastructure for the Arts and Humanities: www.dariah.eu), which seeks to build an integrated cooperative network of people, information, and tools to facilitate long-term access and use of research data across

Europe. DARIAH has recently established a formal legal consortium to allow members from fifteen European countries to collaborate together in developing a shared European research infrastructure. The international federation, centerNet, a constituent organization of the Alliance of Digital Humanities Organizations, is also seeking to build links between digital humanities centers internationally. The way in which these various international networks and initiatives develop will be fundamental to the future development of cyberinfrastructures for digital scholarship in the arts and humanities.

It is easy to create a digital humanities center; on the centerNet web pages, Lynne Siemens provides a guide as to how to set up a digital humanities center which suggests that the main requirements are enthusiasm and support (ideally in the form of some seed corn funding) from the university's management (Siemens, 2012). The difficult trick with a digital humanities center is to keep it going ten or twenty years down the road. Most digital humanities centers are established following some successful research grants, and "soft" research funding is generally the lifeblood of the center. Consequently, digital humanities is a land populated by projects. Anne Burdick and colleagues, in their book *Digital Humanities* (2012), see the project as the basic unit of digital humanities: "Projects are both nouns and verbs. A project is a kind of scholarship that requires design, management, negotiation, and collaboration" (Burdick *et al.*, 2012:124). In the view of these authors, the project is the main means by which digital humanities is shaping post-print scholarship and exploding the conventions associated with a book- and article-bound academy. This is perhaps an exaggerated view: projects are equally important in many other types of academic activity, as the large number of non-digital projects including activities ranging from performances to research networks funded by research councils illustrate. The growth of the project in the arts and humanities is perhaps due more to changes in the funding opportunities available to scholars than to the rise of digital media. This raises an important point: the extent to which digital humanities centers pursue research because of its inherent intellectual interest or simply in order to raise the research income necessary to keep the center in business. As a center grows, securing sufficient new research projects and income to retain all the staff can become increasingly difficult and demanding, and may discourage risk taking. All those who have been involved in developing a digital humanities center will be

familiar with the difficult decision as to whether to pursue a project which is not technically or intellectually rewarding but might offer some funding to keep a member of staff in post. For many digital humanities centers, the pressing issues of sustainability are not technical ones but the rather more prosaic ones of securing reliable long-term funding to keep the center's staff in place.

The dependence of centers on soft funding from research grants is both a blessing and a curse. Digital humanities centers are often among the most successful humanities units in grant capture, but their desperation to keep the money flowing can mean that the center and its staff end up on a treadmill, putting in grant applications in which they are not terribly interested just to raise money, thereby losing control of the intellectual agenda of the center. Bethany Nowviskie (2012) in a perceptive lecture reviewing the evolution of provision in the digital humanities at the University of Virginia, perhaps historically the leading institution in the field, has described how the Scholars' Lab stemmed from previous facilities in the library and IT service. As a result, the Scholars' Lab has stable funding provided by the library and IT service, and Nowviskie considers this a major factor in explaining its success. Likewise, the Maryland Institute for Technology in the Humanities, another of the most successful US centers, is jointly supported by Maryland University's College of Arts and Humanities and the University of Maryland Libraries. It is possible that, in our anxiety to affirm the intellectual credentials of digital humanities and demonstrate its parity with longstanding humanities disciplines, we too quickly distance ourselves from libraries and IT services. In funding terms, if nothing else, there is a great deal to say for digital humanities centers having a closer relationship with libraries and IT services.

Another means of creating a mixed economy and reducing financial risk is to develop teaching income. Teaching has been an important component of digital humanities centers since their inception. For example, the early workshops organized by Harold Short and Willard McCarty at King's College London were fundamental to developing institutional support for the development of digital humanities there. More recently, the organization of summer workshops and institutes has been a major means of spreading the gospel of digital humanities. The Digital Humanities Summer Institute, a week-long program held at the University of Victoria in Canada, attracts annually over 600 participants.

Many centers offer full Masters' programs and a number are now offering undergraduate programs. But while teaching can provide a means of ensuring the financial sustainability of the center, it creates its own difficulties and dilemmas. In designing a digital humanities teaching program, it can be difficult to ensure the right balance of practical skills and reflective analysis. A program that simply engages in a highly theorized form of "digital studies" will not give sufficient weight to the aspiration of digital humanities to transform scholarly practice and communication. On the other hand, teaching that focuses on, say, programming and technical skills runs the risk of overlooking the potential of the humanities to provide new critical insights into our digital praxis. Above all, there is the problem of who undertakes this teaching. For most university courses, a doctoral qualification is an essential qualification for teaching. However, the staff in digital humanities centers with the deepest technical understanding and awareness of digital humanities practice often may not have doctorates. How far and in what way do they get involved in the teaching program? Is a doctorate an essential qualification to being a fully paid-up member of the digital humanities community?

These tensions around staffing and career structures are at the heart of the dynamics shaping the institutional infrastructure of the digital humanities. For Jerome McGann (2014:130–1), the very existence of the various digital humanities centers, labs, and institutes represents (paradoxically) a rejection by humanities academics of digital scholarship, a wish to keep at arm's length the different types of people and skills required for digital work. He points out how:

> The emergence of digital technology has brought a new and crucial populace into the university. So far as the university's political and social structure is concerned, they are employees hired to serve the faculties. I leave aside the fact that these people are often scholars of distinction in their own right.
>
> (McGann, 2014:130)

Although the skills of these staff are essential for digital humanities scholarship, the structure of the institution separates them from regular faculty. McGann points out that, to make matters even more difficult, these staff "are an expensive population to support, commanding high salaries, often higher than the faculty persons they might be working

with" (2014:130). These tensions are also explored by John Bradley (2012) in his description of the development of the Department of Digital Humanities at King's College London. Bradley rejects the idea that the vision and shape of a project should be determined by the leadership of academics from conventional humanities departments. Instead, he envisages digital humanities research as being taken forward by shared discussions involving a range of academic and technical specialists, with the modeling work undertaken in the development of digital humanities projects representing a major research activity. Bradley sees the digital humanities researcher as equivalent in status (if not in background) to the conventional humanities academic, and takes issue with Jennifer Edmond (2005), who has argued for the creation of a profession of "digital humanities intermediaries" acting as brokers between humanities researchers and technical staff. For Bradley, the process of expressing humanities scholarship in digital form is in itself an act of research just as important and equal in intellectual weight to more conventional humanities scholarship. Bradley expresses concern that in many institutions technical work is regarded as "a kind of support work – perhaps, in extreme cases, as similar to what is done to the academic's car by his garage mechanics" (Bradley, 2012:11), and deprecates the use of the term "techie" by humanities scholars "who don't know and understand the work we do." Abhorring such distinctions, Bradley declares that "innovation in the digital humanities often arises out of the pooled talents of a range of experts, and in the best environment where this happens there is recognition and support for the interlinked actions of many players" (Bradley, 2012:11).

Bradley describes a kind of institutional paradise for digital humanities; the question is the extent to which it has ever been achieved and the scale on which it is likely to be achieved. It is striking, for example, that notwithstanding the philosophy described by Bradley, very few of the more technically oriented staff from the Department of Digital Humanities were submitted by King's College London to the British research assessment exercise in 2014, suggesting institutional pressures in another direction. In general, the ability of digital humanities centers to provide adequate career development opportunities for their staff has been patchy. Digital humanities centers are frequently created by groups of enthusiastic and charismatic academics who have realized the potential of digital technologies to transform their subject area. They use

research income to recruit some students with a talent for coding, perhaps persuade some people with a professional computing background to join them or offer someone from the library or IT services a more interesting job. Everything goes well. More research income is secured, and the team grows and jells. The students had meant to go on and do a PhD, but the work in the center is more interesting and they are after all working in a university. But the more successful the research team is, the more difficult it is to secure the money to keep the team together. Some grant applications fail, and some longstanding members of the Center lose their jobs. Then the indispensable geographic information systems (GIS) specialist, conscious that his skills are in demand in industry, asks for a promotion. The university administration say that there isn't a promotion mechanism for someone on his type of contract. One of the most talented of the staff who came in as student notices a lectureship in digital humanities elsewhere. With 10 years' experience on a dozen digital humanities projects, this staff member is superbly qualified for an academic position in digital humanities, but the lectureship requires a PhD, which she never completed because she was so devoted to the work of the center. It gradually dawns on most of the staff of the center that they have become trapped there, doomed constantly to try and secure income from a dwindling stream of research income. Their commitment to the work means that they will probably stay, but their hopes that they were contributing to a new form of academic enterprise and that they might have an exciting new type of career have been betrayed.

This is the situation in far too many digital humanities centers: very talented, scholarly and knowledgeable staff with vast experience of the creation of digital humanities projects who have devoted themselves to securing the projects to keep the center afloat and have never had the opportunity to build the academic career in digital humanities they would like. To some extent, this is an unavoidable result of the way in which academic career structures have developed in recent years. One of the most unattractive features of American university life is the apartheid between "faculty" (with those holding tenure regarded as the highest point of human evolution) and other "staff." While the intellectual protections provided by tenure are undoubtedly necessary, this does not justify the effective denigration of other intellectual workers such as librarians, archivists, and IT specialists. As Bradley (2012:12)

emphasizes, this leads to the unstated assumption in digital humanities that "faculty" provide the vision, while the technical staff implement it. One of the most unfortunate developments in UK higher education in recent years has been the importation of this distinction between "academic staff" and "professional services," with librarians and other cognate groups losing their longstanding "academic-related" status. In other European countries, similar academic hierarchies frequently mean that digital humanities skills are seen as secondary, and academic leadership and vision is regarded as the most important requirement. It is perhaps in challenging these antiquated power structures that the digital humanities has one of its best opportunities to transform the academy, but one must be careful not to run away with utopian enthusiasm. The adjunct crisis in the United States shows how attacks on the privileged position of academic staff can easily prove counterproductive. Yet somehow we need to find a means of moving towards a reshaping of academic structures so that it can accommodate both the writer/researcher and the programmer as intellectual equals and achieve that vision of a shared enterprise described by John Bradley.

For Jerome McGann (2014:1), the digital humanities center represents in many ways a failure of the academy adequately to engage with the way in which the whole of our cultural inheritance is being recurated and re-edited in digital forms and institutional structures. McGann points out how, in large projects like *Eighteenth Century Collections Online* and *Google Books*, the lead has been taken by large commercial publishers and libraries and there has been little involvement hitherto by scholars of the period, notwithstanding the efforts of projects such as 18thConnect to retrospectively fix the resulting problems. McGann suggests that part of the reason for this lack of scholarly involvement is the liminal position of the digital humanities center and its staff within universities. Similarly, in another powerfully argued piece, Peter Robinson (2014) notes that the growth of the digital humanities since 1995 has been largely due to the support from research funders and the resulting growth of digital humanities centers, which have produced "scores of [projects], worldwide, offering (again and again) access to outstanding scholarship and to resources otherwise inaccessible" (Robinson, 2014:245). This project work has also fed into the growth of shared tools such as TEI. However, Robinson sees this phase as having now reached the limits of its expansion and suggests that a backlash against this model is now

evident. Robinson notes that even the 200 institutions belonging to centerNet represent a tiny proportion of 200,000 universities worldwide, and it is unlikely that we will ever see a situation where there is sufficient funding to allow most of these universities to have a digital humanities center. The digital humanities center was an appropriate response to a situation where there were few people with the skills, equipment, and resources to undertake digital scholarship. We are now in a different situation:

> Now we have millions of digital objects to address, as the whole body of world knowledge and culture is translated into digital form. Now we have in the Internet a medium that unites communication, collaboration, and publication into an instantaneous and fluid whole. In a moment, we can see what someone else has created, we can add to it, publish it – and in turn, another person can see, add, publish. And "anyone" is anyone with a computer, anyone with a mobile phone – more than a billion people. We are no longer pioneers for a few. The whole world is turning digital, and we are part of it.
>
> (Robinson, 2014:247)

For Robinson, the digital humanities center has fulfilled its role, and we now need to think about the type of connectivity necessary to create large-scale cyberinfrastructures. These criticisms reflect the criticisms of Diane Zorich, who notes that digital humanities centers are prone to becoming standalone silos engaging in "boutique digitization" which limit scale and connectivity:

> First, the silo-like operation of current centers favors individual projects that are not linked to larger digital resources that would make them more widely known within the research community. When one examines the projects of the 32 surveyed centers en masse, one finds hundreds of projects of potential interest to larger communities that are little known outside the environs of the center and its partners. Moreover, in the absence of preservation plans, many of these projects risk being orphaned over time, as staff, funding, and programming priorities change. In the absence of repositories that enable greater exposure and long-term access, the current landscape of many silo-like centers results in unfettered and untethered digital production that will be detrimental to humanities scholarship.

> The silo-like nature of centers also results in overlapping agendas and activities, particularly in areas of training, digitization of collections and metadata development. With centers competing for the same limited funding pool, they can ill afford to continue with redundant efforts.
>
> (Zorich, 2008:49)

Maron and Pickle (2014), building on some of these concerns, paint a picture of digital humanities work often having an uncertain place in the overall management of data and computational activity within universities. They suggest that, in order to enhance the impact and longevity of digital humanities work, it is necessary to have more integrated institutional support and methodologies.

The common thread in all these recent criticisms of the digital humanities center is the need to scale up the work of the centers and to create greater connectivity. Exactly how this can be achieved is often left unclear. The most concrete suggestions are made by Peter Robinson (2014), who argues for the development of new forms of online collaboration by scholars working with the millions of digital objects now available so that "What Google Maps and TripAdviser do for hotels and restaurants, what Orbitz and SkyScanner and Expedia do for airline schedules, we could do for books, manuscripts, texts, knowledge" (Robinson, 2014:253). Robinson sees collaboration around tools, rights, and access as essential to achieving this, and argues for a shift from content creation towards collaborative work on existing data. This is a beguiling vision. While humanities is frequently depicted as the domain of the "lone scholar," it has nevertheless always been a highly collaborative endeavor. We may gather our data separately, but we then often share and discuss it. What we need to do is to transfer this behavior into an online environment, so that we collaborate and link together our explorations of libraries and archives. However, such collaborative environments will still require some kind of technical support and focus, and the digital humanities center will continue to have a role here. If digital humanities is to have an impact on our future digital state in a world of "big digitization" by large commercial interests, increased cooperation and links will be essential. The work of centerNet will be vital in fostering such collaboration. As Robinson notes, the role of the European DARIAH project, with its explicit focus on the sharing of data and the creation of infrastructures to

facilitate this, also points a way forward. The creation of large-scale research infrastructures of the type envisaged by DARIAH can be seen as representing a digital parallel to the emergence of library consortia in the twentieth century, and may prove to be equally influential in the way in which future scholars access information and disseminate their scholarship.

This still leaves uncertain the question as to how digital humanities relates to the mainstream academy. McGann sees the digital humanities labs and centers as a means of distancing academic engagement in the development of digital infrastructures. Does this mean that we should as a community be pressing harder for the development of digital humanities centers into full-blown academic departments? There is of course a risk that by corralling digital humanities into a separate department, we provide an even more effective silo which discourages the adoption of digital methods in other disciplines. However, it is more likely that digital techniques will become so commonplace in other disciplines that the function of digital humanities as a separate activity will be questioned. Peter Webster of the British Library, for example, has remarked that "The end game for a Faculty of DH should be that the use of the tools becomes so integrated within Classics, French, and Theology that it can be disbanded, having done its job" (Webster, 2013). This is perhaps an oversimplistic view of both the nature of digital methods and the structure of humanities research. As Robinson (2014:255) observes, there will always be a need for trailblazing new developments on the intersection of humanities and information technology, and it is undoubtedly in this kind of pioneering scientific work that an important part of the future mission of digital humanities lies. But what is the most appropriate nature of the space in which such work can be taken forward? As we have seen, the center, for all its strengths, has significant drawbacks, and may have outlived its usefulness. The academic department seems too constrained by past traditions easily to cope with the mixture of skills and perspectives which the digital humanities will require. We may perhaps need to think about the development of specialist labs and units, with a more focused scientific agenda than the present digital humanities centers, perhaps analogous to the units in which systems biology is studied or the "dry labs" of bioscientists.

Digital humanities centers have played an important part in transforming the landscape of humanities scholarship, but as we seek to build and

extend our digital infrastructure to cope with the new digital world, the mission will be a twofold one: first, to build greater connectivity and collaboration between and across existing centers, resources, and practitioners; and, second, to ensure that we do not lose our pioneering spirit and continue to seek out and explore technologies that will shed fresh light on our cultural heritage and inheritance. In pursuing that mission, building and creating networks is the most important activity of all. We must build alliances with coders, librarians, curators, photographers, archivists, artists, project managers, and all the range of new professions and skills. This must inherently involve restating where the academic sits into that network – wherever it is, it is not automatically at the top of the tree. Those engaged in digital humanities work in universities also need to forge alliances with those bodies outside the academy that shape our digital and cultural landscape: libraries, archives, galleries, opera houses, theatres, orchestras, dance companies, broadcasters, as well as digital artists, and startups of all kinds. The digital humanist should be an explorer in this new cultural landscape, and in doing so should be constantly seeking to create new cross-connections and new links.

As Mark Sample has eloquently stated:

> don't sit around waiting for a digital humanities center to pop up on your campus or make you a primary investigator on a grant. Act as if there's no such thing as a digital humanities center. Instead, create your own network of possible collaborators. Don't hope for or rely upon institutional support or recognition. To survive and thrive, digital humanists must be agile, mobile, insurgent. Decentralized and nonhierarchical. Stop forming committees and begin creating coalitions. Seek affinities over affiliations, networks over institutes.
>
> (Sample, 2010)

The existing infrastructure has provided a very effective means of building digital humanities in its first phase, but we must be wary of putting all our energy into preserving that infrastructure. The institutional landscape of the digital humanities must evolve and change as the digital world changes, and the watchwords will always be flexibility and nimbleness. The digital humanities has always been pragmatic and effective at building alliances and connections, and it needs to draw on these strengths in developing its next phase.

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