



CHAPTER 1

Introduction: Research Methods for the Digital Humanities

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This book introduces a range of digital research methods, locates each method within critical humanities approaches, presents examples from established and emerging practitioners, and provides guides for researchers. In each chapter, authors describe their pioneering work with an emphasis on the types of questions, methods, and projects open to digital humanists. Some methods, such as the translation of literary sources into digital games, are “native” to Digital Humanities and digital technologies. Others, such as digital ethnographies, are adopted and adapted from extensive traditions of humanities and social science research. All of the featured methods suggest future avenues for Digital Humanities research. They entail shifting ethical concerns related to

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online collaboration and participation, the storage and uses of data, and political and aesthetic interventions. They push against the boundaries of both technology and the academy. We hope the selection of projects in this volume will inspire new questions, and that their practical guidance will empower researchers to embark on their own projects.

Amidst the rapid growth of Digital Humanities, we identified the need for a guide to introduce interdisciplinary scholars and students to the methods employed by digital humanists. Rather than delimiting Digital Humanities, we want to keep the field open to a variety of scholars and students. The book was conceived after a panel on digital research methods at a Cultural Studies Association conference, rather than a Digital Humanities meeting. The brief emerged out of contributions from the audience for our panel, conversation between the panel presenters, and the broader conference that featured numerous presentations addressing digital methods through a range of interdisciplinary lenses and commitments. The guide is designed to build researchers' capacities for studying, interpreting, and presenting a range of cultural material and practices. It suggests practical and reflexive ways to understand software and digital devices. It explores ways to collaborate and contribute to scholarly communities and public discourse. The book is intended to further expand this field, rather than establish definitive boundaries.

We also hope to strengthen an international network of Digital Humanities institutions, publications, and funding sources. Some of the hubs in this network include the Alliance for Digital Humanities Organizations and the annual Digital Humanities conference, the journal *Digital Humanities Quarterly*, funding from sources like the National Endowment for Humanities' Office of Digital Humanities, and, of course, many university departments and research institutes. The editors are each affiliated with George Mason University (GMU), which houses the Roy Rosenzweig Center for History and New Media. GMU also neighbors other prominent institutes, such as the Maryland Institute for Technology in the Humanities, Advanced Technologies in the Humanities at University of Virginia, University of Richmond's Digital Scholarship Lab, and Carolina Digital Humanities Initiative. Because Digital Humanities is hardly an exclusively North American project, the contributions to this volume of authors and projects from Australia, Denmark, the Netherlands, and the United Kingdom illustrate the international reach of the field.

There are a number of other books that address the identity of Digital Humanities, its place in the university, or specific aspects of its practice. Willard McCarty's *Humanities Computing* is a canonical text, laying the philosophical groundwork and suggesting a trajectory for what, at the time of printing, was yet to be called Digital Humanities.¹ McCarty interrogates the “difference between cultural artifacts and the data derived from them.” He argues that this meeting of the humanities and computation prompts new questions about reality and representation. Anne Burdick et al. position the field as a “generative enterprise,” in which students and faculty make things, not just texts.² Like McCarty, they suggest that Digital Humanities is a practice involving prototyping, testing, and the generation of new problems. Further, *Debates in the Digital Humanities*, edited by Mathew Gold, aggregates essays and posts from a formidable cast and does a commendable job of assessing “the state of the field by articulating, shaping, and preserving some of the vigorous debates surrounding the rise of the Digital Humanities.”³ These debates concern disciplinarity, whether the field is about “making things” or asking questions, and what types of products can be counted as scholarly outputs. Other books cover specific areas of practice. For instance, the Topics in the Digital Humanities series published by University of Illinois Press includes manuscripts devoted to machine reading, archives, macroanalysis, and creating critical editions.⁴ Digital Humanities is not only, or even primarily, defined by books on the subject; it is defined and redefined in online conversations, blog posts, in “about us” pages for institutions and departments, calls for papers, syllabi, conferences, and in the process of conducting and publishing research.

¹Willard McCarty, *Humanities Computing* (New York, NY: Palgrave Macmillan, 2005), 5.

²Anne Burdick, Johanna Drucker, Peter Lunenfeld, Todd Presner, and Jeffrey Schnapp, *Digital Humanities* (Cambridge, MA: The MIT Press, 2012), 5.

³Matthew K. Gold, *Debates in the Digital Humanities* (Minneapolis, MN: University of Minnesota Press, 2012), xi.

⁴Daniel Apollon, Claire Bélisle, and Philippe Régnier, *Digital Critical Editions* (Urbana-Champaign, IL: University of Illinois Press, 2014); Matthew Jockers, *Macroanalysis: Digital Methods and Literary History* (Urbana-Champaign, IL: University of Illinois Press, 2014); Stephen Ramsay, *Reading Machines: Toward an Algorithmic Criticism* (Urbana-Champaign, IL: University of Illinois Press, 2011); Christian Vandendorpe, *From Papyrus to Hypertext: Toward the Universal Digital Library* (Urbana-Champaign, IL: University of Illinois Press, 2009).

Digital Humanities also has its critics. For instance, Daniel Allington et al., authored a scathing critique titled “Neoliberal Tools (and Archives): A Political History of Digital Humanities” for the *Los Angeles Review of Books*. They insist that “despite the aggressive promotion of Digital Humanities as a radical insurgency, its institutional success has for the most part involved the displacement of politically progressive humanities scholarship and activism in favor of the manufacture of digital tools and archives.”⁵ They suggest that Digital Humanities appeal to university administrators, the state, and high-rolling funders because it facilitates the implementation of neoliberal policies: it values academic work that is “immediately usable by industry and that produces graduates trained for the current requirements of the commercial workplace.”⁶ Similarly, Alexander Galloway contends that these projects and institutions tend to resonate with “Silicon Valley” values such as “flexibility, play, creativity, and immaterial labor.”⁷ In response to Allington et al.’s polemic, *Digital Humanities Now* aggregated blog posts by scholars and students decrying the article and refuting its arguments. Rather than dismiss these criticisms outright, Patrick Jagoda encourages reflection on how some forms of Digital Humanities may elicit free or exploited labor and have a role in transforming the humanities and universities of which we are a part.⁸ These are not reasons to give up on the name or the project of Digital Humanities, but they are questions with which a rigorous, critical, open, and politically active Digital Humanities must engage.

OUR APPROACH

We do not purport to make an intervention in definitional debates about Digital Humanities, although we acknowledge that we have our own epistemological, methodological, and even normative commitments. These proclivities are evident in our call for chapters, the self-selection of contributors, and our editorial decisions. Along with most humanists,

⁵Daniel Allington, Sara Brouillette, and David Golumbia, “Neoliberal Tools (and Archives): A Political History of Digital Humanities,” *Los Angeles Review of Books*, May 1, 2016. <https://lareviewofbooks.org/article/neoliberal-tools-archives-political-history-digital-humanities/>.

⁶Ibid.

⁷Alexander R. Galloway, *The Interface Effect* (New York, NY: Polity Press, 2012), 27.

⁸Jagoda Macroanalysis, 359.

we are wary of positivist epistemologies and approaches to data collection and analysis. Hence, we adopt reflexive positions regarding the roles of research, interpretation, and critique. Our methodological commitments include, for example, the insistence on marrying theory and practice. As such we asked contributors to be explicit about how their work fits among or challenges existing projects and scholarship, and the questions their work poses and answers. The types of Digital Humanities we are interested in pursuing are also sensitive to the inclusion of under-represented groups and challenging existing power relations. To do so, requires us to interrogate our own biases, the tools we use, and the products of our research. Each of these positions touches on significant tensions in the field and deserve elaboration.

One thing that unites humanists is our understanding that the texts we work with and the results of our research are not simply pre-existing data or truths ready to be found and reported. This anti-positivist epistemology suggests that the types of questions we ask shape the kinds of data we will produce. It is also an acknowledgment that the types of tools we employ determine the information we can access and, in turn, the types of conclusions we can draw. Johanna Drucker's work is instructive in this regard. In particular, she differentiates between *capta* and *data*. In her schema, "*capta* is 'taken' actively while *data* is assumed to be a 'given' able to be recorded and observed." She continues, "humanistic inquiry acknowledges the situated, partial, and constitutive character of knowledge production, the recognition that knowledge is constructed, *taken*, not simply given as a natural representation of pre-existing fact."⁹ Digital humanists are exposing the fallacy that research involving quantitative or computational methods is necessarily positivist. Rather, there are productive tensions between interpretivist approaches and the quantitative characteristics of computing.

Digital Humanities often involves translating between different modes of expression. Humanities disciplines provide space to question cultural values and prioritize meaning-making over strict empiricism. Their methods are primarily heuristic, reflexive, and iterative. Texts are understood to change through consecutive readings and interpretations. They are always highly contextual and even subjective. Conversely, "computational environments are fundamentally resistant to qualitative

⁹Johanna Drucker, "Humanities Approaches to Graphical Display," *Digital Humanities Quarterly* 5, no. 1 (2011).

approaches.”¹⁰ Fundamentally, digital devices, operating systems, and software rely on denotative code, which has no room for ambiguity. This requires a translation between types of representation. To think about the translation between these different fields of human activity we can recall Walter Benjamin’s argument in his essay “Task of the Translator.”¹¹ He contends that translation is its own art form and like other art forms, it is a part of the technical standards of its time. Many digital humanists engage in the processes of translating texts into digital spaces and data, or translating digital and quantitative information into new texts and interpretations. Translating humanistic inquiry into digital processes can force humanists to make their assumptions and normative claims more explicit. At the same time, Digital Humanities practitioners might work to create computational protocols which are probabilistic, changeable, and performative based in critical and humanistic theory.¹²

Two concerns about theory have demanded attention in debates surrounding Digital Humanities. The first concerns whether there is a body of theory around which Digital Humanities work, curricula, and institutions can or should be organized. The second is a reprisal of debates about the distinctions between *logos* and *techné*, theory and practice. The Humanities consist of a huge diversity of disciplines and fields—adding the prefix “digital” seems only to compound this. The Digital Humanities community also tends to include people in different professional roles and from outside of the walls of the academy.¹³ Digital humanists cannot claim a shared body of literature or theory that orients their work. As such, our insistence is that scholars (in the broadest sense) continue to consider the impacts of their work beyond the field of practice: to make explicit the positions from which they approach their work, the questions they intend to pose or answer, and how they contribute not just to the collection of cultural materials, but the development of knowledge.

¹⁰Johanna Drucker, quoted in Gold, *Debates in the Digital Humanities*, 86.

¹¹Walter Benjamin, “The Task of the Translator,” trans. Harry Zohn, in *Selected Writings*, ed. Marcus Bullock and Michael W. Jennings, 253–263 (Cambridge, MA: Harvard University Press, 1996 [1923]).

¹²Johanna Drucker, quoted in Gold, *Debates in the Digital Humanities*, 86.

¹³Lisa Spiro, quoted in Gold, *Debates in the Digital Humanities*, 16.

Some in Digital Humanities have signaled a “maker turn.”¹⁴ Among digital humanists, the distinction between theory and practice has been reframed as a debate “between those who suggest that digital humanities should always be about *making* (whether making archives, tools, or digital methods) and those who argue that it must expand to include *interpreting*” (italicization in original).¹⁵ Among those who privilege making, Stephen Ramsay is often cited for his claim that Digital Humanities “involves moving from reading and critiquing to building and making.”¹⁶ The maker turn is in some respects a response to the problems with academic publishing, peer review, and promotion. Like other types of open access publishing, publicly available Digital Humanities projects are often part of the demand to retain ownership over one’s work, disseminate information freely, and reach audiences outside of the university.

Approaches that shift the emphasis from contemplative and critical modes toward activities of design and making are not limited to Digital Humanities. They echo aspects of DIY culture, handicrafts, tinkering, modding, and hacking.¹⁷ These values are also prominent among internet commentators and futurists who suggests that critique now takes place through the design and implementation of new systems.¹⁸ Others caution that to privilege making may open the door to uncritical scholarship, which simply reproduces hegemonic values, leaves our assumptions unchecked, and fails to ask vital questions. There is room in Digital Humanities for those that are primarily interested in the development of new tools, platforms, and texts, and for those who are most interested in contributing to the critique of cultural material and technologies. In our development of this volume, we felt the need to theorize in order to render the practices, epistemologies and implications involved in digital methods, tools, archives, and software explicit.

¹⁴David Staley, “On the ‘Maker Turn’ in the Humanities,” in *Making Things and Drawing Boundaries: Experiments in the Digital Humanities*, ed. Jentery Sayers (Minneapolis, MN: University of Minnesota, 2017).

¹⁵Kathleen Fitzpatrick, quoted in Gold, *Debates in the Digital Humanities*, 13–14.

¹⁶Stephen Ramsay, quoted in Gold, *Debates in the Digital Humanities*, x.

¹⁷Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham, NC: Duke University Press, 2011), 177.

¹⁸Terry Flew, *New Media: An Introduction*, 3rd ed. (Oxford, UK: Oxford University Press, 2008), 41.

If digital humanists cannot rally around a body of theory, and are critical of the notion that Digital Humanities should always or primarily be about making, then perhaps we can find commonality in our approach to methods. McCarty recalls his early experiences of teaching in the subject when the only concerns that his students from across the humanities and social sciences shared were related to methods.¹⁹ As a result, McCarty sketched the idea of a “methodological commons,” which scholars in a variety of fields can draw on at the intersection of the humanities and computing.²⁰ We should, however, exercise caution not to think about Digital Humanities as a set of digital tools, such as text markup and analysis software, natural language processors, and GIS (geographical information system), that can simply be applied to the appropriate data sets. These tools for storing, analyzing, and representing information are not neutral instruments. Rather, they bear the epistemological predispositions of their creators, and of the institutions and circumstances in which they are produced and used.²¹ In short, digital humanists should avoid the instrumentalization of technologies and tools. Contributions to this volume represent a common, but contested and shifting, methodological outlook that focuses on the interrelationships between culture and digital technologies. In our view, the “digital” in Digital Humanities can refer to a tool, an object of study, a medium for presenting scholarly and aesthetic productions, a mode of communication and collaboration, a sphere of economic exchange and exploitation, and a site for activist and political intervention.

HOW TO USE THIS BOOK

As the title indicates, this volume is intended as a reference guide to current practices in the Digital Humanities. The Digital Humanities field is one of experimentation both in practice and theory. Technological tools and techniques quickly change, as software is improved or falls into disuse. Research practices are also reevaluated and refined in the field. Therefore, experimentation is encouraged throughout these chapters. We hope that readers will turn to the chapters in this book for inspiration

¹⁹McCarty, *Humanities Computing*, 4.

²⁰Ibid., 119.

²¹Svensson in Gold, *Debates in the Digital Humanities*, 41.

and guidance when starting new research projects. While technology has provided a bevy of new tools and toys to tinker with, technology itself is not the primary focus of Digital Humanities methods. The book contains technical discussions about computer code, visualization, and database queries, yet the tools are less notable than the practice. In other words, technology serves the methodology.

The broad scope of projects in this book should interest students, social scientists, humanists, and computer and data scientists alike. Each chapter relates to fields of expertise and skill sets with which individual readers will be more or less familiar. In some cases prior knowledge of theoretical frameworks in the humanities and social sciences will help the reader navigate chapters, but this knowledge is not a prerequisite for entry. Other chapters presuppose varying levels of technical knowledge, for instance, experience with spreadsheets or JS libraries. Here, there may be a steeper learning curve for readers who do not come from a technical or computer science background. Nonetheless, all of the chapters provide starting points from which readers with different skill sets can pose new questions or begin Digital Humanities projects.

Further, readers will find this book useful in their own ways. Programmers will find the discussions of database management, analytical software, and graphic interfaces useful when considering new software. Software design is not contained within any one specific section. Instead, it threads through many of the chapters. Programmers looking for ideas about how to create better tools for Digital Humanities projects will find the critiques and limitations of current software particularly useful. Digital archivists are presented with various ways to handle both large and small datasets. In some cases, storing data for ethnographic purposes requires a consumer application with the ability to take notes, as Tai Neilson's chapter discusses. Other archives require the secure access and storage practices described in Robert W. Gehl's chapter. There is an entire section devoted to the confluence of Digital Humanities methods and ethnographic research that we hope ethnographers will find illuminating. Ethnographers working on digital topics are breaking traditional boundaries between computational methods and qualitative research, and challenging the assumption that all quantitative practices are positivist. Graphic designers, those with an interest in user interfaces, and data visualization will find a range of methods and critical evaluations of data presentation. Like the software aspects of this book, concerns about data visualization and user interfaces are heard throughout

many of the chapters. Rendering research visible is a critical component of Digital Humanities projects, as it affects the way we communicate findings, interact with our tools, and design our projects.

WHAT IS IN THIS BOOK

Each chapter in this volume presents a case study for a specific research project. While the case studies cover a wide range of topics, each contribution here discusses both the background and history of its research methods, and the reasons why a researcher might choose a particular Digital Humanities method. This allows the chapters to serve as both tutorials on specific research methods, and as concrete examples of those methods in action. In order to guide readers and to serve as a teaching resource, the volume includes definitions of key terms used. Each chapter will help readers navigate practical applications and develop critical understandings of Digital Humanities methods.

Presenting digital topics in the confines of print is difficult because digital objects are interactive by nature and tend to change rapidly. Therefore, considerations and instructions about specific consumer software are generally avoided in this text. Although helpful, instructions on software such as Microsoft Excel are better left to other, online, resources as instructions run the risk of being outdated upon publication. The same is true of fundamental web technologies. There are many online resources available for students to learn the basics of web design, database management, connection protocols, and other tools. Likewise, instructions on how to write code are not present because numerous resources are available to teach programming, user interface design, and other technical skills. Nor does this book attempt a complete history of Digital Humanities methods. Instead, we focus on current projects, with a nod to previous theorists' relevance to the case studies within this book.

We have arranged the chapters in this volume based on commonalities between the methods that each contributor uses in their research, generally categorizing each method as “analytical,” “ethnographic,” “representational,” or “archival.” The first few chapters of the volume, those in our “analytical” group, showcase computational approaches to the processing of large amounts of data (especially textual data). In “On Interdisciplinary Studies of Physical Information Infrastructure,” Lewis Levenberg argues, through examples from a study of telecommunications

networks in West Africa, for how a beginner researcher of information infrastructure—the physical and technical elements of how we move information around—can use a combination of practices and techniques from computer science, policy analysis, literary studies, sociology, and history, to collect, analyze, and draw conclusions from both computational and textual data sets. Similarly, in “Archives for the Dark Web,” Robert W. Gehl argues that in order to study the cultures of Dark Web sites and users, the digital humanist must engage with these systems’ technical infrastructures. This chapter provides a field guide for doing so, through data obtained from participant observation, digital archives, and the experience of running the routing software required to access the Dark Web itself. In a shift towards text-processing at larger scales, David Rheams’s chapter, “Creating an Influencer-Relationship Model,” shows how the creation and computational analysis of an original collection of news articles allows a researcher to realize patterns within texts. David Arditi’s chapter, “MusicDetour,” outlines the purpose and process of creating a digital archive of local music, ways to create research questions in the process of creating it, the process that he used while constructing such an the archive in the Dallas-Fort Worth area, and even some of the problems that copyright creates for the Digital Humanities. Mark Alfano’s chapter, “Digital Humanities for History of Philosophy,” shows the utility of text-processing techniques at a closer scale. He tracks changes in how Friedrich Nietzsche used specific terms throughout his body of work and then constructs arguments about how and why Nietzsche uses each concept. Importantly, these chapters do not only rely on technical apparatuses; indeed, they each also showcase humanists’ analyses of technical structures.

In the following, “ethnographic” chapters, the authors highlight original uses of digital communications to facilitate interactive, interpersonal, social-scientific research. Natalia Grincheva’s chapter “Digital Ethnography” explores how visitor studies methodologies, when specifically applied to museums as cultural institutions, significantly advanced those museums’ cultural programming and social activities, especially through the development of digital media. Erin Brock Carlson and Trinity Overmeyer, in their chapter, “Photovoice Methods,” captured otherwise-forgotten focus group data by asking participants in their community research project to take and discuss their own photographs in order to document the participants’ experiences and to catalogue their perceptions. And Tai Neilson, in his chapter “Digital Media,

Conventional Methods,” offers a methodological treatise, and a guide to conducting online interviews in the Digital Humanities based on his study of digital journalism in New Zealand and the US. In their extensions of interview, participant observation and focus-group techniques, through innovative uses of multiple media, these contributions teach us how to use all the tools at our disposal to get more, and better data, while keeping a critical focus on the procedures of qualitative research.

The next several chapters concentrate on “representational” issues, through cases that challenge or address familiar questions from the humanities in the context of digital media. Elizabeth Hunter’s chapter, “Building Videogame Adaptations of Dramatic and Literary Texts,” traces the author’s creation of an original video game, *Something Wicked*, based on Macbeth; this serves as a tutorial for how new researchers can ask interdisciplinary research questions through this creative process. Andrea Copeland, Ayoung Yoon, Albert Williams, and Zebulun Wood, in “Virtual Bethel,” describe how a team of researchers are creating a digital model of the oldest black church in the city of Indianapolis, to create a virtual learning space that engages students in learning about the history of the church, local African American history, and how to use archives. And J. J. Sylvia’s “Code/Art Approaches to Data Visualization” showcases the “Apperveillance” art project, in order to argue for how we might leverage the unique powers of generative data visualization to answer provocative questions in Digital Humanities. In each of these cases, the researchers’ creativity and insight are as important to their contributions as are the sets of data with which they work.

Finally, the chapters grouped by their use of “archival” methods each provide us with fascinating improvements to existing techniques for historical media work, using digital tools and critical attention to detail. Nick Thieberger, in “Research Methods in Recording Oral Tradition,” details the methods by which his research group in Australia set up a project to preserve records in the world’s small languages. The case study demonstrates that these techniques are useful for archiving and re-using data sets across a range of humanities disciplines. “A Philological Approach to Sound Preservation,” by Federica Bressan, provides a deep understanding of the challenges posed by audio media preservation from both a technical and an intellectual point of view, and argues for a rational systematization in the field of preservation work. Tarrin Wills’s chapter, “User Interfaces for Creating Digital Research,” provides a strong overview of how various applications and interfaces can be used to

interact with information, using as its main case study the Skaldic Poetry Project (<http://skaldic.org>). In her chapter, “Developing Sustainable Open Heritage Datasets,” Henriette Roued-Cunliffe investigates a collection of Danish photos to provide a practical overview of open data formats, and how they match up with different types of heritage datasets; she uses this case study to illustrate research issues with open heritage data, mass digitization, crowdsourcing, and the privileging of data over interfaces. Finally, Roopika Risam’s chapter “Telling Untold Stories: Digital Textual Recovery Methods” uses structured markup languages to recover a digital critical edition of Claude McKay’s poetry. The chapter demonstrates how digital works in the public domain can diversify and strengthen the cultural record. In each of these chapters, the contributors have broken new ground technically and methodologically, even as the conceptual roots of their work remain embedded in historical issues.

REFERENCES

- Allington, Daniel, Sara Brouillette, and David Golumbia. “Neoliberal Tools (and Archives): A Political History of Digital Humanities.” *Los Angeles Review of Books*, May 1, 2016. <https://lareviewofbooks.org/article/neoliberal-tools-archives-political-history-digital-humanities/>.
- Apollon, Daniel, Claire Bélisle, and Philippe Régner. *Digital Critical Editions*. Urbana-Champaign, IL: University of Illinois Press, 2014.
- Balsamo, Anne. *Designing Culture: The Technological Imagination at Work*. Durham, NC: Duke University Press, 2011.
- Benjamin, Walter. “The Task of the Translator,” trans. Harry Zohn. In *Selected Writings*, edited by Marcus Bullock and Michael W. Jennings, 253–263. Cambridge, MA: Harvard University Press, 1996 [1923].
- Burdick, Anne, Johanna Drucker, Peter Lunenfeld, Todd Presner, and Jeffrey Schnapp. *Digital Humanities*. Cambridge, MA: The MIT Press, 2012.
- Drucker, Johanna. “Humanities Approaches to Graphical Display.” *Digital Humanities Quarterly* 5, no. 1 (2011). <http://www.digitalhumanities.org/dhq/vol/5/1/000091/000091.html>.
- Flew, Terry. *New Media: An Introduction*, 3rd ed. Oxford, UK: Oxford University Press, 2008.
- Galloway, Alexander R. *The Interface Effect*. New York, NY: Polity Press, 2012.
- Gold, Matthew K. *Debates in the Digital Humanities*. Minneapolis, MN: University of Minnesota Press, 2012.

- Jagoda, Patrick. "Critique and Critical Making." *PMLA* 132, no. 2 (2017): 356–363.
- Jockers, Matthew. *Macroanalysis: Digital Methods and Literary History*. Urbana-Champaign, IL: University of Illinois Press, 2014.
- McCarty, Willard. *Humanities Computing*. New York, NY: Palgrave Macmillan, 2005.
- Ramsay, Stephen. *Reading Machines: Toward an Algorithmic Criticism*. Urbana-Champaign, IL: University of Illinois Press, 2011.
- Staley, David. "On the 'Maker Turn' in the Humanities." In *Making Things and Drawing Boundaries: Experiments in the Digital Humanities*, edited by Jentery Sayers. Minneapolis, MN: University of Minnesota, 2017.
- Vandendorpe, Christian. *From Papyrus to Hypertext: Toward the Universal Digital Library*. Urbana-Champaign, IL: University of Illinois Press, 2009.