Ancient Manuscripts in Digital Culture

David Hamidović, Claire Clivaz and Sara Bowen Savant, eds. *Ancient Manuscripts in Digital Culture: Visualisation, Data Mining, Communication.* Boston: Brill, 2019. 284 pp. $138 Hardcover. ISBN: 9789004346734.

Ancient Manuscripts in Digital Culture: Visualisation, Data Mining, Communication is the third volume in Brill's Digital Biblical Studies Series. The introduction to this volume provides an informative review of Digital Humanities (DH) in the context of recent biblical studies. The editors note that DH scholarship often looks different than traditional Humanities scholarship by "changing the order of the research steps, raising questions at least as often as bringing answers, and testing tools without advance knowledge of their full methodological implications" (2). The essays in this volume attempt to demonstrate this claim.

All these essays are situated in the context of "Third Wave Digital Humanities," which emphasizes "the effect of the digital turn on the practices, epistemologies, and paradigms of Humanities scholarship" (5). The editors also invoke the notion of "digital philology," which Paul Dilley identifies as "new scholarly interpretive practices that both produce and are enacted by the transfer of texts form manuscripts and the printed page to digital files subject to computational analysis and visualization" (7). In short, the essays included in this volume intend to show how DH is transforming not just the Humanities generally, but more specifically, scholarship focused on ancient manuscripts and biblical studies.

These essays are organized into three main sections: "Visualising the Manuscripts" provides an overview of the digitization of ancient Jewish and Christian manuscripts; "Data Mining and Visualisation" turns the reader's attention to the computational analysis of manuscripts; "Communication" shows how DH scholarship is changing the nature of pedagogy and scholarly communications.

There is not space in this review to provide a critical examination of each piece included in this collection. To demonstrate the significant amount of ground covered, however, I will provide a brief synopsis of each essay.

Part one, "Data Mining and Visualisation" begins with an essay by Liv Ingeborg Lied called, "Digitization and Manuscripts as Visual Objects from a Media Studies Perspective." Lied applies an insight from media studies, namely, that new media technologies create "epistemic changes" (19). This is true of biblical studies as well. For example, paratextual features of digitized manuscripts will change the way that editors and scholars study a manuscript. Peter M. Phillips, in "The Power of Visual Culture and the Fragility of the Text," takes a few cases studies to demonstrate that the text itself may well be subordinated to the medium it is embedded in. He provides case studies analyzing the Lindisfarne Gospels manuscript, a collection of Bible verses retweeted in 2015, and Darren Aronofsky's film *Noah*.

Brent Landau, Adeline Harrington, and James C. Henriques shift gears in the next essay called "'What no eye has seen': Using a Digital Microscope to Edit Papyrus Fragments of Early Christian Apocryphal Writings." This practical study demonstrates how advanced tools like digital microscopes aid in transcribing ancient manuscripts. Stephen J. Davis ends part one with an essay carefully examining the practical and political issues associated with digitizing cultural objects. His

essay is entitled "Manuscripts, Monks, and *Mufattishin*: Digital Access and Concerns of Cultural Heritage in the Yale Monastic Archaeology Project."

In part two, the focus moves from digitization to the computational analysis of ancient texts. The first two essays are about natural language processing (NLP). Thibault Clérice's and Mathew Munson's essay, "Qualitative Analysis of Semantic Language Models," provides a concrete discussion on how to evaluate language models like Word2Vec. Brett Graham's contribution, "Using Natural Language Processing to search for Textual References," shows how NLP may be harnessed to automate the discovery of references and allusions in ancient texts.

H. A. G. Houghton then directs the reader to consider the transcription of New Testament manuscripts. Houghton argues for a stream-lined process of checking the accuracy of transcription using digital tools in "Electronic Transcription of New Testament Manuscripts and their Accuracy, Documentation, and Publication." Part two closes with an essay on data visualization. Paul Robertson takes the opportunity to explain how he used data visualizations to compare a handful of ancient authors in "Visualizing Data in the Quantitative Comparison of Ancient Texts: A Study of Paul, Epictetus, and Philodemus."

Part three, "Communication," begins with a study by Heather Dana Davis Parker and Christopher A. Rollston on how digital tools allow for innovation in teaching a new generation of epigraphers in "Teaching Epigraphy in the Digital Age." Jennifer Aileen Quigley and Laura Salah Nassrallah keep the focus on pedagogy in "HarvardX's Early Christianity: The Letters of Paul: A Retrospective on Online Teaching and Learning." These educators discuss the practical and ethical issues of Massive Open Online Courses (MOOC's) using a course on Early Christianity as a case study. In "Learning from Jesus's Wife: What Does Forgery Have to Do with the Digital Humanities?" James F. McGrath shows the benefits and liabilities of digital tools for exposing forged manuscripts. The final essay of part three is a "research report" by Bradley C. Erickson titled "Synagogue Modeling Project Report: A Multi-faceted Approach to 3D, Academic Modeling." Erickson provides a description of his experiences building and using a virtual reality model of an ancient synagogue.

The above paragraphs go some way to demonstrating a key strength of this volume: it covers a lot of tools, methodologies, and objects of study. Most readers will not want to read this volume from cover to cover unless they are interested in the "state of the art" of DH as it relates to ancient Jewish and Christian Manuscripts. Instead, this volume will be most useful for scholars interested in one aspect of DH, such as natural language processing, or a particular field of study such as textual criticism. In either case, the editors have done biblical scholars a great service by assembling and publishing these essays.

Another strength of this volume is that the individual authors often attend to ethical issues associated with DH. For example, the burden of Davis' essay is to demonstrate the importance of ethical digitization of cultural heritage objects. Western scholars should focus on developing positive, rather than predatory, relationships with the communities who hold valuable manuscripts. He also raises issues of great importance to librarians such as open vs. pay-wall access for cultural heritage objects. As another example of ethical consideration, Quigley and Nassrallah are careful to point out the controversy of relying on MOOCs for higher education classrooms: if smaller intuitions use the online course materials of larger institutions, what will happen to pedagogical diversity and the work of educators and PhD candidates seeking teaching jobs? These are complicated issues that must be addressed in such a context.

Moving from the ethical to the technical, readers of these essays will benefit from clear descriptions of DH methodologies, workflows, and software. Clérice and Munson offer an accessible discussion of language models, including Word2Vec, while Graham provides a concrete workflow for using natural language processing for finding textual references. Most of the essays describe the usefulness of software and platforms appropriate to a wide range of DH tasks. These range from digital microscopes, to software useful for teaching epigraphy, to a platform for creating 3D models of places distant in time and location.

The one potential weakness I find in this volume may well have more to do with my own expectations. Typically, when I think of "visualiz(s)ation" in a DH context, I have in mind the visual representation of quantitative data. For that reason, the subtitle of the volume, "Visualisation, Data Mining, and Communication," as well as the title of part one, "Visualising the Manuscripts," and part two, "Data Mining and Visualisation," led me to believe there would be more studies about the visual representation of quantitative data, perhaps focusing on design issues or interpretation. Instead, only Robertson's essay deals with visualization in this sense. The entire first part is really about digitization, not visualization. Now, this weakness is not substantial, but for those interested in the visual representation of quantitative data, this volume may not be as useful as one may be led to believe (as I was).

I close this review with a wholehearted recommendation for this volume to be included in any theological or religious studies library. There is no doubt about how important DH methodologies have become over the last few decades. Therefore, anyone interested in the study of ancient Jewish or Christian manuscripts would do well to browse, if not closely study, this collection of essays. As such, theological and religious studies libraries should include this volume in their collection as a resource for those interested in the Digital Humanities.

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