

A Prototyping Renaissance: Form, Content, and Scale in Open Publication in the Humanities

JOHN W MAXWELL AND ALESSANDRA BORDINI

Abstract: This essay argues that open research is, or should be, constitutionally central to the humanities, but going beyond content-only notions of “open access.” We make a case, based on the 16th-century Aldine press, that “prototyping in the humanities” is not just a digital humanities notion; rather, it was core to the roots of humanities scholarship, wrapped up in the origin of print culture. We explore the idea that a prototype “makes an argument” (Galey and Ruecker 2010), a conjecture about how a set of ideas might make a difference in the world and how the making and testing of prototypes provides a concrete means of evaluating them in social context, an idea we connect to Chris Kelty’s (2008) notion of “recursive publics.” We ask which publics are engaged by humanities scholarship and how answers to this question are conditioned by taken-for-granted infrastructure—and scale—that much of scholarly communication relies upon.

Keywords: open scholarship, prototyping, publics, Renaissance, Aldus Manutius

Introduction

In this essay we want to establish a framing of “open research” that does not merely mean access to content but is also actively concerned with both form and audience. To do this is to question the *taken-for-granted* structures in scholarly communication that we, as scholars, have largely accepted unquestioned and to argue that open humanities scholarship properly includes the investigation of the means of its own expression and circulation. In order to make this case, we look back to the origins of scholarly publishing in the Renaissance, at a time when the flowering of humanist (if not yet “humanities” in the modern sense) scholarship was contemporary with

the flowering of early print culture—and the rapid evolution of forms and means of circulation. We argue that there are early senses of “openness” in this critical historical period and that open research is not just a possibility but rather can be seen as *constitutionally central* to the humanities, especially where it concerns the relationship of form and content.

In the early decades of the 21st century, “open” is a “floating signifier,”¹ employed in several different contexts: *open access*, *open source*, *open science*, *open social scholarship*, *open infrastructures*, and a host of variations on these. “Openness” in these various modes is a keyword in contemporary discourse around scholarship and scholarly communications in the digital era. But what do we mean by “open,” exactly? Rather than trying to decide upon a specific definition, we will here opt for broadening the operational sense of the word while situating it politically; “open” stands for an alternative to the now-normal *enclosure* of scholarship, research, and publication by corporate actors. However, in this essay our emphasis is less on the political economies that underpin scholarly communication and the contemporary rise of “open access”² and more on how the forms of publication and circulation of scholarship have come to be naturalized as commodities, as “black boxes.”³

We also work toward understanding how the idea of *open* relates to the idea of a *public*, where the value of the humanities might be more about their relevance to broader humanity, rather than reckoned within a privately enclosed field (indeed, a market) of competitive agents: universities, publishers, and individual scholars. The framing of scholarship as a public good has a particular valence to the humanities: if the humanities are, as we believe, about the expression, appreciation, and critique of the human experience, then they are certainly in the interest of wider society, no matter how much institutional scholarship has become inwardly focused. Such is the aim of much recent humanities research under the banner of “open scholarship”: Engaging broader, non-academic audiences is not only possible (especially given a digital, networked world) but maybe even the whole point. If we consider the relevance and circulation of humanities scholarship beyond our disciplinary peers to broader publics, then questions of scholarly communication—and, indeed, of *publication*—become central to the idea of open research.

Broadening the scope of “openness” in humanities scholarship from just *content* to also include *form* and *process* will entail opening up the standardized packages in which scholarship has been conceived and shipped for many decades. The internal economies

1. This term, from Ernesto Laclau, is explained by Moore (2025) to be “a term whose meaning is ‘suspended’ until it is articulated in a particular political context” (9).

2. For a political-economic analysis of OA and related movements, see Adema (2024); Eve and Gray (2020); Moore (2017).

3. Our use of the “black box” concept comes from Bruno Latour, especially Latour (1987, 131); Latour (1999, 304).

of the academy have traded traditional packages, especially journal articles and monographs—and the symbolic recognition they convey on a scholar’s CV—for such a long time now that we have come to take them as the unquestioned foundations of our work. But such forms have origins and histories, and there are reasons why they rose to popularity and standardization. As engaged scholars, let us question those forms, just as we question the financial economy of scholarship. Such questioning, tinkering, and, indeed, *prototyping* have been a hallmark of the digital humanities, as digital media have revealed spectacular new possibilities for the forms of scholarly argument. But this should not be seen as a function of digital media: we hope to show here how this tradition of prototyping the forms and processes of scholarly communication has its roots in the very origins of modern scholarship. Tensions within the digital humanities between experimental forms and conservative modes of scholarly recognition are by now well known, and the implications of this tension for open scholarship are apparent too, especially where “scholar-led” publishing seeks to carve out spaces for alternative possibilities. Tensions between openness and the commodification of scholarly forms also raise issues of *scale*, to which we will turn in the final section of this essay, asking how instrumental reason has influenced the structures of scholarly communication.

We begin, then, by looking at scholarship and scholarly communication today and five centuries ago when both humanist scholarship and publishing were new. Specifically, in the example of the Venetian press of Aldus Manutius (ca. 1450–1515), we see evidence of a close and *generative* relationship between scholarship, forms of publication, and the interplay between the two. At the turn of the 16th century, the scholarly Aldine press was not (as it might seem in distant hindsight) merely an industrial mechanism—*infrastructure*—for mass-producing and circulating texts; instead, the press was an active participant in developing the literary and intellectual trends of the time—that is, in the shaping of scholarship itself. Far from being an instrumental tool in service of pre-defined ends, we argue that the Aldine press is an origin point for a rich tradition of scholarly publication/public scholarship that achieved what it did by experimenting with the very forms that constituted it, in order to reach the publics that would care about it.

Considering the Aldine Press

We should begin by noting that the insights in this section have arisen from a digital humanities project of our own: the digitization and remediation of the Wosk–McDonald Aldine Collection at Simon Fraser University (SFU) Library.⁴ This collection of more

4. The Aldus@SFU project can be found at <https://alduslibsfu.ca>.

than 120 volumes from the late 15th and early 16th centuries provides an invaluable portrayal of the evolution of scholarly publishing at the dawn of the age of print. Aldus Manutius, born near Rome around 1450, spent most of his adult life as an *umanista*—a Latin and Greek tutor to the sons of wealthy Italian families. He was part of the growing tradition of Renaissance humanist thought in the 15th century. But at the age of about 40, he moved to the thriving mercantile city of Venice to establish a printing business. The question of why he left what was likely a comfortable career to embark on such a risky venture has captured the attention of generations of historians. Indeed, as with scholar-led presses today, *Why does a scholar become a publisher?*

What is apparent is that Aldus saw a huge opportunity in Greek literature—championed (at least aspirationally) as the quintessence of classical learning at least since Petrarch set the stage for Renaissance humanism more than a century earlier.⁵ But despite the value placed on Greek scholarship by Aldus and many of his fellow *umanisti*, mastery of Greek was still a rarity in the late 1400s (Grendler 1984, 9). The fall of Constantinople in 1453 had brought quantities of Greek manuscripts to Italy and to Venice especially, being a cosmopolitan port. In Venice in the early 1490s, Aldus planned an ambitious project to print the major works of classical Greek scholarship and bring them into circulation in Italian scholarly circles; there is some evidence that Aldus was motivated by his own frustrations getting access to Greek manuscripts—immensely valuable and jealously guarded by their owners.⁶

The printing trades were already well established in Venice at the end of the 15th century. Key members of the second generation of printers (after Gutenberg) had come to bustling Venice, and by the time Aldus arrived, there were dozens of printers; indeed, by the 1480s, there were more printers in Venice than anywhere in Europe (Davies 1999). At some time around 1490, Aldus entered into an arrangement with established printer Andrea Torresani and patrician Pier Francesco Barbarigo and set about the massive work of preparing to print in Greek. The first requirement would be to design and cut a Greek typeface. He was not the first to print in Greek, but his Greek typography was a substantial leap forward in terms of the systematic representation of the classical language in print (Barker 1992). In 1495, the Aldine press released Constantine Lascaris's Greek *Grammar* and then set to work on a five-volume edition of the works of Aristotle. Aldus's new partner, Torresani had printed a Latin translation of Aristotle more than a decade earlier, but the Aldine edition published it in Greek for the very first time. In all, the Aldine press is responsible for about 40 *editio princeps*—first

5. Petrarch could only read Homer in Latin translation. Lacking Greek, he famously lamented that “Homer is dumb to me, or rather I am deaf to him.” Quoted in Carne-Ross (1968, 1).

6. Much of the story of Aldus and his press is told in Martin Lowry's *The World of Aldus Manutius* (1979). See also Oren Margolis's *Aldus Manutius: The Invention of the Publisher* (2023).

printings—of Greek classics, by Herodotus, Sophocles, Aristophanes, Euripides, and many more. Over the next 20 years, the Greek type used by the Aldine press would be improved and re-cut four times.

Aldus revolutionized (we say this without exaggeration) how classical Greek literature—so prized by Renaissance scholars—was edited, produced, circulated, and studied. Part of this is about the new technology of print and the technical work of standardizing the representation of the language in the new medium, but the achievement is also significantly about the scope of Aldus’s ambition, the scale of the project. But the qualifier is this: Although the Aldine press printed and circulated hundreds of copies of their Greek editions—an order of magnitude more than ever before—even hundreds of copies in circulation meant these works were relevant to only a tiny population of literate, high-status readers. The scale is worth dwelling on, but even at this point it becomes possible to talk about markets and audiences in ways that simply weren’t possible before: Printing meant a new, speculative imagining of the possible circulation of a work.

Although Aldus began with Greek literature, he quickly moved into the larger world of humanist literature: the Latin classics; early Christian writers; an emerging Italian literature (both in Latin and vernacular) from the likes of Petrarch, Dante, and Boccaccio; and contemporary humanist scholarship from writers such as Erasmus, Poliziano, and Pontano. As early as 1495, Aldus published a short Latin work by contemporary Venetian humanist Pietro Bembo, which introduced lasting innovations in punctuation, orthography, typography, and the form of the book itself.⁷ In the early 1500s, Bembo would go on to edit editions of Dante and Petrarch for the Aldine press, establishing conventions for the representation of vernacular texts that we are still using today; indeed, our modern use of the comma, semicolon, apostrophe, and quotation marks—as well as accented characters in modern languages—all flow from the Aldine press at the turn of the 16th century (Harris 2016b).

And then Aldus scaled up his operation (probably much to the relief of his financial backers who looked woefully at the slow-selling Greek editions) by publishing a new series of “classics” (mostly Latin, but also Greek and vernacular) in a small *octavo* format with a taller, slimmer profile and typeset in a whole new face—which we now call *italic*—patterned after the contemporary handwriting of late 15th-century humanists. These books were a huge hit and circulated all across Europe; Renaissance portraits of wealthy Italians often feature the subject cradling one of Aldus’s little books *à la mode*.⁸

7. The influential British typographer Stanley Morison called Bembo’s 1495 *De Aetna* “the first ‘modern’ book” (1963, 32). Morison led the Monotype Corporation’s 20th-century reissue of the typeface derived from that edition—and named in Bembo’s honor: This Aldine roman type is thus the prototype for “old-style” typefaces; you have likely read dozens if not hundreds of books set in it.

8. See the exhibition catalog *Aldo Manuzio: Renaissance in Venice*, ed. G. Beltramini et al., especially the final section “Four Aldine Readers,” 346–52.



Agnolo Bronzino, *Portrait of a Young Man* (ca. 1530s)



Federico Barocci, *Quintilia Fischieri* (1600)

Press runs reached the thousands of copies, and—the mark of success—so-called counterfeit editions, undeterred by Aldus’s attempts to legally protect them with Venetian senatorial and ultimately papal privileges (copyright hadn’t been invented yet), poured out of printers both in Florence and across the French border in Lyon.

What is the point of this story celebrating the inventions and innovations of a European businessman? The problem of historical consciousness arises here: what this story looks like with modern eyes may blind us to some key features of this story. In his own time, Aldus wasn’t in a position—as one might reasonably assume were it happening today—to simply reach out to a standing reserve of Greek classics and decide to bring them to market. At that point there was no Greek literature in substantial circulation (indeed “circulation” was about to mean something very different); only a tiny minority could even read Greek with any fluency. Nor was Aldus in a position to call up a printing shop and mass-produce books for market: neither the printing infrastructure nor the market existed yet. As a business venture, this was wildly ambitious, well beyond the fledgling book markets established by the 15th-century *cartolai* that Anthony Grafton (1999, 190) describes. And yet as a business venture it did succeed, and we now live in a world shaped by the things the Aldine press created. So how are we to think about this?

Let us begin by recalling that Aldus was a scholar of many years’ experience, a teacher of classical literature. One of his key motivations, if we take him at his word, was to free the classics from the hands of greedy manuscript hoarders.

I have made trouble for myself. I have brought upon myself immense inconvenience, immense labor. But I console myself with the thought either that I can see my productions are very well received and of great benefit to all, with increasing benefit in the future, or that many of the “book buriers” are now releasing volumes from their prisons and offering them for sale—which, at a time when I could not borrow a book from anyone even for an hour, I threatened would soon happen. —Aldus Manutius, 1496, Preface to *Thesaurus Cornucopia* (Manutius 2017a, 29)

It is a sentiment likely recognizable to advocates of open access and open scholarship today. Seen in this light, Aldus’s larger technical and social project is perhaps also recognizable to present-day humanists, and especially digital humanists, for whom reconfiguring both content and the means of engagement are paramount. Indeed, to our eyes, the Aldine project has many parallels with projects in the digital humanities—and experiments in born-digital scholarship—today.⁹

The Aldine press we argue, was engaged in the production of *scholarly prototypes*, not so different than in present-day digital humanities projects. This was *prototyping*

9. On the parallels between the Aldine press and digital humanities projects, see Bordini and Maxwell (2019). On the travails of “born-digital” scholarship, see Maxwell et al. (2017).

in the humanities—except that instead of digital media, much of the work was being done in steel, lead, ink, and paper. If Aldus’s own goal was the furtherance of humanist scholarship, including the spread of Greek literacy and the flourishing of good books both ancient and new, then the work of the press can be seen as a series of iterative experiments in how to best present that scholarship, how to best engage audiences, and how to make a difference in the world.

In this essay we seek to foreground *prototyping* as a lens for examining open research and scholarship. Furthermore, we propose that prototyping is in fact a *core humanities research methodology*. Prototyping, simply defined, is a process of knowing through building; design researcher Stan Ruecker (2015) posits that the purpose of a prototype is “to address a research question, typically by deliberately embodying some aspect of the problem so that it lends itself to closer inspection, understanding, and in some cases, testing.” In the digital humanities, there is much talk of “building,” “development,” and “hack vs. yack” as a way of capturing the hands-on constructive aspects of using digital media to engage with humanities objects such as texts. Beyond this more technically focused language, we find prototyping a more generative way of talking about what digital humanists—and scholars beyond digital humanities—do.¹⁰ Certainly our work on the digital remediation of SFU Library’s Aldine collection is a prototyping project, making conjectures about how digitized special collections might engage publics beyond traditional book historians.¹¹

Building a prototype is a deliberate attempt to *situate an artifact in the context of a public or an audience*. A prototype here does not have to mean a physical object like a machine or an artwork or even a printed document; indeed, any remediation (Bolter and Grusin 1998) is necessarily a prototype because it is an attempt to situate an artifact in a new context: in front of actual people and involving the selection and reification of a set of assumptions. This is not new, nor radical, but the framing puts the emphasis on situatedness and the relations that arise from that situation.

A prototype further represents a *conjecture* about how this might be done effectively and provides the means for that conjecture to be evaluated in contexts of discovery, use, and engagement.¹² It is in this sense that Jon Saklofske and the INKE Research Group (2016) point to a “digital unification of *theoria*, *poiesis*, and *praxis*”

10. We are influenced by the Implementing New Knowledge Environments (INKE) project, a Canadian research partnership with its roots in the digital humanities but with growing interest and emphasis on open scholarship. The INKE project positions “Public Digital Scholarship Prototypes & Initiatives” as one of four activity clusters. See <https://inke.ca> and El Khatib et al. (2018); Ruecker (2015); Galey and Ruecker (2010); Bath et al. (2018); Saklofske and INKE Research Group (2016).

11. See <https://alduslibsfu.ca>.

12. An illuminating articulation of this is from Dan Ingalls, the programmer who anchored Alan Kay’s visionary campaign to create “personal computing” in the 1970s at Xerox PARC. Ingalls explained: “The *vision* has been clear all along, but vision is hard to critique effectively. The various *implementations* we have done, on the other hand, are complete earthly artifacts, and thus admit of criticism both by ourselves and others, and this has helped to move us forward, both on the earth and in our vision” (Dan Ingalls, personal communication, 2005, italics added; see also Ingalls 1981).

where “education, publishing, and scholarship are all forms of action.” For the point of a prototype—as with a publication, as with the Renaissance sense of rhetoric itself—is to *make a difference in the world*. In the iterative loop of development, engagement, and learning, both means and ends are in play.

Already in this exploration we can see that prototyping is not a new practice in humanities scholarship but something that has been with us all along, but this framing perhaps sheds a new light on our practices. The iterative process of developing something new, sharing it in a social context of some kind (perhaps only as large as a research team or a classroom, perhaps much larger), and learning enough to think about how perhaps it might be done better next time is probably common to most scholars and practitioners.¹³ It is also a basic iterative loop that defines the process of many book publishers. A publication is an object that is deliberately prepared for a specific social context; how it performs (measured in sales but also in many other social dimensions) feeds back to how a press thinks about their next publication and how it might make a difference.

By many accounts, the Aldine press did make a difference in the world. The classical canon was established and is still studied today (a quick comparison of the Aldine press with, say, the Penguin Classics or the Loeb Classical Library reveals as much). Perhaps more importantly for our purposes, in the form of the book itself: Typography, punctuation, navigational aids such as indexes and tables of contents, and even the very shape and size of the object and how our bodies facilitate the act of reading were all worked through by the Aldine press in those years, with lasting influence. The Aldine press’s effect on scholars of the time was considerable, most famously in the example of Erasmus of Rotterdam, who sought out Aldus in Venice and spent a year living and working at the printing shop.¹⁴ The impact of the press cannot be reduced to any single output, but we can consider the trajectory it took over its formative decades under the active direction of Aldus and his partner, Andrea Torresani (and to a lesser extent after Aldus’s and Torresani’s deaths in 1515 and 1529, respectively). These years of innovation and iterative practice paint a picture of a particular kind of scholarly-industrial venture: one that apparently succeeded financially though not spectacularly so (Aldus famously died in debt to his to-do list) but, more lastingly, in the differences it made in the world and the prototypes it supplied for both scholars and printers to follow.

Alan Galey and Stan Ruecker (2010) made the case that a prototype “makes an argument.” In doing so, they draw specifically on Bernard Cerquiglini’s (1999) claim that every *edition* makes an argument about its text. In humanities scholarship, Cerquiglini’s

13. This basic iterative loop, in the context of students in a class or a lab, also forms the basis of Constructivist learning theory as elaborated by Idit Harel and Seymour Papert at the MIT Media Lab in the 1980s.

14. See “Festina Lente” in Erasmus’s *Adages*.

claim about editing perhaps seems more familiar, with its emphasis on textual scholarship. Certainly, editorial work was a major contribution of the Aldine press, in Aldus's sourcing of manuscripts, correcting and framing of texts, his minimalist approach to commentary, and, as we have already seen, in Pietro Bembo's innovations in punctuation and orthography. But the press's active work obviously didn't end with the editor's pen; it extended into the design, materiality, and form of the objects it produced and into the networks of circulation that handled the books and brought them to readers.

Looking back from five centuries on, it may be easy enough to ask, "Isn't this just what publishers are supposed to do?" But in 1500, it wasn't so simple, which brings our attention back to prototyping. Aldus's prototypes made arguments—conjectures—for particular modes of reader engagement and circulation of ideas, theories tested through real-world outcomes and then fed back into the design and crafting of subsequent prototypes: most obviously the Greek printing type that was revised at least four times in 20 years across dozens of editions. Significantly, Aldus's famous italic type didn't ultimately catch on (after the mid-16th century, italics came to be used as we use them now: for emphasis and to distinguish passages in an otherwise roman-set text), but many of the other formal and material innovations of the press did go on to become, or inform, standards: punctuation, pagination, navigational aids, and especially the common forms and sizes of books that reflect how those books (and indeed genres) will be read. It is easy to take these innovations for granted today, since many of them have been with us ever since. But to take them for granted would be to lose sight of Aldus's project and his conjecture about how to express scholarly works in ways that will make a difference.

What Difference Does Scholarship Make and for Whom?

We have already used the word "public" in the context of open research, but as Nancy Fraser (1992) and Michael Warner (2002) have helpfully elaborated, publics are *plural*. The idea of a singular "the public" is at best a shorthand for voters or consumers; worse, it exalts a particular public constituted by mass media, implying it is the only one that matters. Actually, we are all members of multiple publics—defined, in Warner's terms, by *what we pay attention to*. In speaking of open research in the humanities, what publics are implicated? Who is open research for? Who is humanities scholarship for? Is it for everyone? For all humanity? Does that even make sense?

A helpful touchstone here is anthropologist Christopher Kelty's (2008) identification of the idea of a "recursive public," which is perhaps not quite a new idea but the definition Kelty provides is a powerful one: "a public that is vitally concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence as a public." Kelty's original case was the

communities of open source developers who wrote and maintained internet software, concretely contributing to the means of its own existence online.

Kelty's notion is now ubiquitous in theoretical discussions of scholarly communication.¹⁵ But the broader idea is not new. Indeed, we could likely trace expressions of something like a “recursive public” idea back to the earliest scientific journal, *Philosophical Transactions* (Guédon 2001). Our shared imaginaries around science and scholarship are based on ideals of a circulatory system of research results and interpretation; such expressions both feed the community and constitute it. While Kelty was making a point about the nature of self-organizing technical communities online, his definition is certainly applicable to many scholarly communities, especially those who recognize the value of taking the means of their own publication and indeed record into their own hands.¹⁶

At the turn of the 16th century, Aldus Manutius and his network of Renaissance *umanisti* can be seen as a recursive public, creating an environment in which the study of the classics could thrive and make a difference in the world—a process Petrarch had set in motion more than a century before. This is not just scholars reading and teaching Latin and Greek, not just the “republic of letters”;¹⁷ it is an assemblage of many factors providing the means for this public to realize and sustain itself. It is about reading and writing, of course; it is also about editing and translating and teaching. But it also involves handwriting and typesetting and printing and design. It is about *publication*.

The American writer and publisher Matthew Stadler offered a definition of publication as “not the production of books but the *production of a public* for whom those books have meaning. There is no pre-existing public. The public is created through deliberate, willful acts” (2010; italics added). Stadler's orientation makes clear that the point of a publication is more than an instrumental service performed on behalf of *writing*. It is, again, to make a difference in the world. We in the humanities and in the academy more generally should care about *gathering a public*, indeed *gathering publics*. As Maxwell wrote in 2021:

If the point of open social scholarship is about making scholarship matter to people outside our coterie circles, if the so-called crisis in the humanities is about the perceived

15. See esp. Bell (2024); Moore (2019); El Khatib (2017); Maxwell (2021). Dredging through our Zotero, we note that Martin Paul Eve (2014, 99) credited Kathleen Fitzpatrick with the first mention of Kelty's concept in scholarly communications discourse in *Planned Obsolescence* (2011).

16. In an earlier draft of this essay, Jenni Adams and Simon Dumas Primbault helpfully pointed out our idealism in this framing and that scholarly communities can also be seen as elite coteries where the ideals of openness are prized internally, where these “recursive publics” serve to maintain the “ivory tower” that is also a Renaissance humanist legacy (Grafton and Jardine 1986).

17. “Republic of letters” often refers to an Enlightenment-era concept, but as Celenza (2006, 191n11) points out, the term was already in use in the letters of humanists Emilio Barbara and Poggio Bracciolini in the early 1400s.

irrelevance of humanities scholarship to people outside the university, if we are concerned about the neoliberal corporatization of the university and its role in larger society, then *the gathering of publics is more than a theoretical move*. Our forms of communication, preservation, and circulation themselves are of critical importance, not just as more or less efficient mechanisms for getting scholarly work communicated and recognized.

What we take for granted

We—scholars—by and large take for granted this most crucial meaning of publication. We typically allow instrumental reason to reduce publishing to a black box, a congealed set of practices and functions that we no longer interrogate; instead, we tend to treat it as a *service* providing a standardized set of outputs that are for the most part not our concern. Our concern, rather, is with our research and our writing; we are content to simply regard publishing as a means to an end, a hegemonic system “producing and controlling academic knowledge and of the commodification of scholarship into knowledge objects” (Adema 2015, 2). We have been doing so for many decades—indeed right into the digital era, almost unchanged. Kathleen Fitzpatrick’s (2011, 4) figure of the *undead* monograph (not to mention the journal article) is so very apt: still walking, zombified, through an utterly changed media landscape. We have evidently agreed upon a separation of concerns: writing and publishing. *Writing* remains the privileged act in the academy, whereas publishing remains an *infrastructural* component that we take for granted in all respects other than the prestige of the venue that is so important to our careers as scholar-authors. The normalization and naturalization of the systems of publication upon which scholarship and the academy have come to depend utterly enclose and constrain what is possible to say and how to say it in the academy.

Was there a time when scholars didn’t take publication for granted? Certainly, in Aldus Manutius’s day, it was not yet possible to make assumptions about the form of publications, their paratexts, their methods of circulation, or the audience they would reach. For scholar-publisher Aldus and his colleagues, these were open questions to be solved in practice and iterated on in subsequent editions. The very idea of the audience—or market—for these works needed to be *imagined* and worked out. History tells us that many of Aldus’s predecessors in Venice printed without sufficient regard for reaching their audience and went broke quickly.¹⁸ As Alessandra Bordini (2023) has elaborated, Aldus is remembered today in part because he was able to imagine an

18. Angela Nuovo (2013, 120–21) tells the story of Konrad Sweynheym and Arnold Pannartz, the first printers in Italy, who “watched the number of books in their warehouse grow seemingly unstoppably, having apparently never imaged such proliferation.”

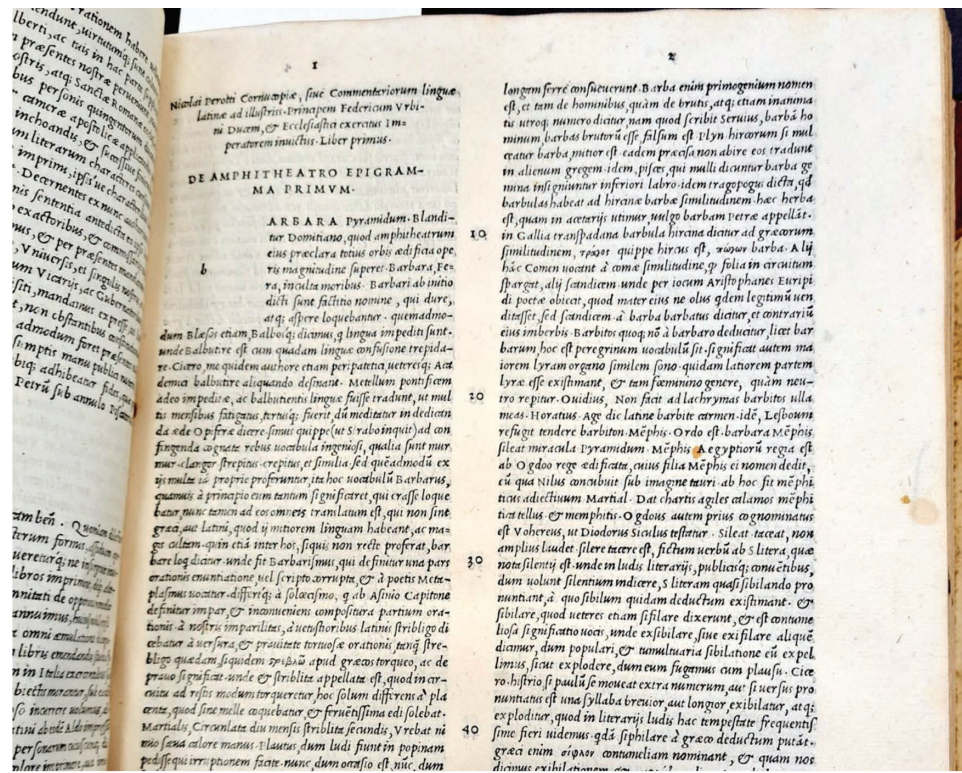
audience and a market for his books—possibly because he was able to imagine people like himself and like his colleagues—and to do the work toward actually reaching those people and engaging them with what he created.

This work was, as we have already argued, *prototyping* in the sense that Galey and Ruecker (2010) and others have articulated. The choice of the texts is only the beginning: The texts need to be edited (further making an argument, as Cerquiglini pointed out); the orthography of the language needs to be worked out; the typography and layout and form of the page need to be designed with a particular reading experience in mind; and the size and scale of the book itself (related to but not reducible to its cost) must be made legible to these imagined readers. Each critical decision point is a conjecture to be evaluated concretely as soon as the finished books travel from the press to the booksellers' stands and the readers' hands. We remember Aldus today because he managed, over 20 years, to keep doing this: to keep iterating in pursuit of an imagined audience and an imagined engagement, neither of which could be taken for granted.

Consider a particularly interesting example: the paged index, in which you can look up an entry in an alphabetical list of terms and be directed to a page number in the main text. Aldus's first paged index was printed in 1499 in Niccolò Perotti's *Cornucopia*, itself a set of commentaries and glosses on the *Epigrams* of the Roman poet Martial.¹⁹ In 1499, there were no established standards around page numbering; not only is an alphabetical index a prototype, but so is a system of page numbers, and going one step deeper, the Aldine edition of 1499 featured not just page numbers but *line numbers* that the index referred to. Perotti's *Cornucopia* is sometimes marginalized as an extreme example of glossing *every single thing* (Ogilvie 2006, 118; Grafton 1999, 50), but we should consider that in 1513, Aldus saw fit to release a second, expanded edition: 880 pages of two-column tiny italic text, with a 150-page alphabetical index. Instead of page numbering, the 1513 edition added *column numbering* as well as line numbers. And this edition would be reprinted by the press again in 1527.

It is hard to look at the *Cornucopia* and imagine it as a popular seller: it's *gigantic* and the type is *tiny*, but three editions in three decades suggests scholars indeed wanted it, and the experimentation with how to best present such a quantity of information speaks to Aldus's commitment to the form of the scholarship, not just the text. The information architecture work involved in such a colossal indexing project—especially with scant precursors to draw upon—is perhaps a task that digital humanists might identify with; the sheer labor involved is daunting. Today we have searchable databases and digital concordances, but the scholarly editorial impulse is surely the same: How to make this important source accessible?

19. Martial's *Epigrams* was only released by the Aldine press just two years later, in 1501. What might this chronology tell us about Aldus's editorial (and educational) agenda?



A page from Niccolò Perotti’s *Cornucopia*, 1513 Aldine edition, showing column and line numbering

Who is this all for? Perotti had written his mammoth book just a few decades earlier in 1478; within a decade it had been printed (in Venice) by Paganino Paganini (famous for printing of the Quran) and issued subsequently by almost a dozen northern Italian printers through the 1490s. Most of these had indexes.²⁰ Situating Aldus’s editions of Perotti in such context shows first that there was clearly interest in the book and second that there was room for “market differentiation,” as evidenced by Aldus’s total overhaul of the book in 1513.

The anxiety of infrastructure

Do prototypes have a teleology? To the extent that a prototype is a means to some kind of end, does that mean that there is an end that, once achieved, is recognizable as the

20. The only surviving manuscript of the *Cornucopia* refers to an index in its preface, but the index is missing; it is not clear whether it was lost or finally produced only when it was printed a decade later. See Pade (2014).

point of the prototyping exercise? If so, what is the afterlife of prototypes? What comes after the careful deliberation, the experimentation, the iterative improvement and appraisal? Ruecker's (2015) "Brief Taxonomy of Prototypes" offers numerous possibilities, but capitalism has a straightforward answer: A prototype only exists as a point on the journey to something more sustainable that will deliver a profit, or at least the revenue to ensure that the company lives to sell another day. Such is the dilemma invoked in so many digital humanities and open research infrastructure projects, piloted via research grants or equivalent innovation-focused foundation grants. The question many are left with is, "That's great; now how do we pay for it going forward?"

We've all seen this play out in different contexts. In the digital humanities, research grants based on promises of new knowledge typically lead to a few short years of development, proofs-of-concept, and exciting conference presentations—followed by the difficult fundraising both to realize the full potential of these projects as promised at the outset and simply to keep projects from going dark altogether. More recently in the 2020s, we are seeing much attention paid to the need for *open infrastructures* for both scholarly communications and digital scholarship. The emphasis on infrastructure is partly inspired by watching companies such as Reed Elsevier make aggressive investments in research support systems both upstream and downstream from what we've traditionally thought of as "publishing;" Elsevier's acquisition in 2017 of the bepress institutional repository platform caused many to fear a world in which research, open or not, would all be dependent on a small number of giant corporations who owned everything (Joseph 2018; Schonfeld 2017). A good deal of discourse around "open scholarship" or "open access" has now become oriented to the need for "open infrastructures."

Susan Leigh Star (1999) famously framed infrastructure as "boring things"—"a fundamentally relational topic" only fully realized in the context of "organized practice." Despite the widespread desire to see infrastructure as a *thing*²¹ that can (or should be) funded, developed, protected, and so on, the key characteristic of infrastructure is how it disappears into the background, into the taken-for-granted space of durable human interactions. To study it seriously therefore requires what Geoffrey Bowker called "infrastructural inversion": trying to see past the *things* to the labor and relational complexity that holds things together over time (Bowker and Star 1999).

Did Aldus invent modern research infrastructure? Part of our contention here is that infrastructure is *not invented; rather, it is a category achieved in use*. Aldus was interested to develop systems that would enable larger-scale circulation and study of Greek classics. He presumably saw an opportunity in the flourishing of printing operations in

21. The Invest in Open Infrastructure (IOI) project persists in pluralizing the word. See <https://infracfinder.investinopen.org/solutions>.

Venice—a city that also had numerous refugees from Constantinople and the remnants of the Byzantine Empire. By the time Aldus began publishing in the mid-1490s, he could take for granted at least the mechanics and labor of typesetting and printing.²² But he could not yet take for granted typography, punctuation, navigation, or even, apparently, the size and shape of the book. All of these remained *young enough to be soft in his hands*. All of these were areas for prototyping, for the iterative exploration of how to make a difference. All of these were also things we would eventually come to take for granted.

Once we take something like standardized punctuation for granted, it is easy to simply consider it done correctly or incorrectly—without appreciating that there was a line of thought that led to its development.²³ What does it mean that those lines of thought were later hidden in black boxes, taken for granted as *infrastructure*? Infrastructure is a social *achievement*, one that relies on human practices beyond the creator’s control: when other people (indeed, *strangers*, as in Michael Warner’s definition of a “public”) have so internalized something that they depend upon and can take for granted that their attention is fixed elsewhere.

Infrastructure clearly operates at scale, which is to say large scale. And conversely, prototypes apparently exist at small scale. To build from conjecture, to craft from raw material or bare concept, is typically not feasible on a large scale. At a small scale, we can imagine and we can create and we can iterate easily. Once things scale up, it becomes more difficult to move, to be “agile,” to change. This sense of prototypes as small-scale precursors to large-scale production is captured in Ruecker’s 2015 taxonomy as “production-driven” prototypes. Conventional wisdom, of course, has it that the modern world demands large scale, mass scale, industrial scale. And indeed, the logic of industrial capitalism—literally since Gutenberg’s time—is the logic of “economies of scale.”

In economies of scale, mechanization and/or standardization allow for the manufacture of many copies of a single object, such that the *unit cost* of each copy or each unit goes down as the quantity produced goes up. Or, put slightly differently, the *marginal cost* of each additional unit goes down over the course of production. Gutenberg’s press may or may not be the prototypical case, but it does provide an easily grasped example: before the press, the cost of copying a manuscript was equal to the labor and time investment in writing every word, with a pen, over again, and as such each copy would cost as much as every other copy. By mechanizing the process with the printing press, many copies could be made more cheaply. But it’s not quite that simple: making

22. Neil Harris (2016b) suggests that Aldus never printed himself, relying on the established (since the late 1470s) press of his business partner Andrea Torresani, whose role is otherwise often downplayed in Aldine studies – possibly due to the unflattering portrait of him in Erasmus’s *Adages*.

23. Indeed, in Aldus’s day, punctuation was *markup* – it was an additional layer added to the text to explicate its meaning. Today we take punctuation for granted and instead think of systems like TEI XML as markup.

10 copies of a manuscript would not necessarily be cheaper overall, because the labor and time and materials involved in setting up the press might exceed the cost of a scribe writing out 10 copies. But at, say, a hundred copies, the unit becomes lower, the setup costs *amortized* over the entire run. And at a thousand copies, the unit cost has plummeted.

This is the logic of Gutenberg's press, as with every other printer since, and as with every other industrial venture going forward, right up to the production of iPhones (in the tens of millions of units, making them not only cost-effective to produce but vastly profitable). Scale, or the *ability to scale*, is the underlying logic of capitalism. If one can assemble the labor and means of production up front (which requires capital), and if one can produce enough units (so that the unit cost is lower than what people are willing to pay for the item), then selling through a run of production means there will be surplus—profit—at the end of the day. If there is no scale, there can be no profit. If there is not profit, there will be no access to capital in the first place. And so scale has place of privilege in modern society.

It is such a simple formula that it has indeed colonized all of Western society and most of the rest of the planet as well. There is very little in modern organized society that does not adhere to such a model: the edge cases are contentious, such as in education and health care, where economies of scale do not work neatly as they do in manufacturing, broadcasting, publishing, transportation, and indeed electoral politics. The care-based professions are an obvious point of so-called market failure, but there are others and we do well to notice them. In scholarly communications, for instance, it has been clear for many decades that the industrial scaling up of journal publishing has been good for business but not so much for libraries or access to research.

Questions of scale haunt contemporary discourse around scholarly communications and open research, as Lucy Barnes and Rupert Gatti so aptly demonstrated in their 2019 essay “Bibliodiversity in Practice”—indeed, our inability to think critically about scale blinds us to many possibilities. Barnes and Gatti, in naming bibliodiversity as part of the pathology/diagnosis of scholarly communications today, noted a key phenomenon. In publishing, they wrote, economies of scale work in some dimensions but not in others: “The key observations are that the *production* of monographs displays *constant returns to scale*, and so can (and does) support large numbers of publishing initiatives; at the same time the *distribution and discovery* systems for monographs display *increasing returns to scale* and so naturally leads to the emergence of a few large providers” (2019, 1; italics added).

To put this in slightly simpler terms, there are no economies of scale in editorial development: Large publishers do not have an advantage in editorial development. But there are economies of scale in distribution, marketing, and discoverability, and here is where large firms excel. Barnes and Gatti's (2019) insight drives a small wedge into the

issue, opening up the possibility of new thought about how we might want scholarly communication to work for us and a way out of the seeming inevitability that those who can scale up will dominate. How much scale is enough, and how much is too much? Which things are important to scale, and which aren't?

Reconsidering Scale

At a different conceptual level, what we are talking about is the difference between *infrastructure* and those processes closer to *prototyping*. We return again to our touchstone in the Aldine press, which very evidently scaled up from the 1490s through the early 1500s, having established a network of collaborations, a brand, and a nascent audience. When in 1501 the Aldine press introduced a new series—*libelli portatiles*—packaging classics and new vernacular literature in small, portable, elegantly shaped volumes issued on fine thin paper with a stylish italic type, they printed them in unprecedented volumes: at least 1,000 copies and perhaps as many as 3,000 copies in each print run.²⁴

In scaling up production, the Aldine press undoubtedly leveraged emergent infrastructural elements: networks of booksellers and sales agents around the Mediterranean and indeed across Europe, not to mention the press's own labor and manufacturing capacity. But in this latest prototype—a new size, shape, and feel for literature—Aldus was reaching for a new, portable, leisured way of reading. In his preface to his 1501 edition of Horace, Aldus dedicates this small edition to the Venetian chronicler Marino Sanudo, confident that its “smallness” invites him “to read him [Horace] when you can take a rest from performing your public duties.” In his dedication to military commander Bartolomeo d'Alviano in the preface to the 1509 edition of Sallust, Aldus champions the small format “so that you could more conveniently have such works with you when you are in the field.” A few years later, Niccolò Machiavelli wrote of his portable reading while out walking: “Leaving the wood, I go to a spring, and from there to my bird-snare. I have a book with me, either Dante or Petrarca or one of the lesser poets like Tibullus, Ovid, and the like.”²⁵

This was *interface design* work, prototyping. But at the same time, the press was advancing a conjecture about increased circulation—not just in terms of sales and economic capital but also, importantly, in terms of cultural capital. They advanced a conjecture about how literature was to be held and carried on one's body. And this became, over a period of centuries, the infrastructure of modern literate society as the ubiquity

24. See Davies (1999), as per Aldus's preface to *Catullus, Tacitus, Propertius* (1502), where he claims 3,000 copies printed.

25. Preface quotations are from Manutius (2017b, 21, 91). The Machiavelli quote is from Grafton (1999, 180).

of small pocketbooks became something we could take for granted. The production of books today is entirely industrialized, but in the early years of the 16th century, while scaling up, the Aldine press's ability to innovate—to “pivot”—meant the operation itself still had to be small enough to be soft in their hands. 1507—a banner year for the press—saw the publication of some 17 titles (Lowry 1979), a number that is comparable to that of an independent literary press or a small university press today.

Anxiety about scale is ubiquitous; our colleague Rowly Lorimer wrote in 2016 about the apparent advantage large corporations such as Elsevier had over much of the grassroots open access movement: that Elsevier could easily innovate their way around more “open” alternatives because of access to capital. Jeff Pooley's (2024) recent reflection on utopian thinking and “capitalist realism” in scholarly communications includes the worry that the smaller operations that populate the open access movement merely operate on the “margins of the commercial system.” Pooley's framing—which helpfully asks us to reconsider the usefulness of the binary between the dominant and the marginal—points to the operational embrace of “scaling small” by members of the ScholarLed consortium and Community-led Open Publication Infrastructures for Monographs (COPIM) project. Indeed, as Adema and Moore articulate, “This principle or philosophy, termed ‘scaling small,’ involves community-led presses collaborating to take advantage of scale while retaining their commitment to situated forms of knowledge and expression” (2021, 28). At the same time, there is an acknowledgment that smallness comes with constraints and a need to look for structures that mitigate these limitations in practice: “the formality of ScholarLed necessitates a degree of structure that may foreground resilience over ephemerality, but will still seek to foster a variety of interactions, processes, and published outputs” (39).

Clearly, a balance needs to be struck between certain forms of operational scale and the situated intimacy with the work that only a small-scale enterprise can fully achieve. Above a certain scale, agility is lost; in the ability to think in terms of prototypes and iteration, there will necessarily be trade-offs with operational efficiency. This needn't be seen as a fatal flaw, as growth-obsessed capital might assume; rather, this is a structural dynamic that deserves consideration: in COPIM's case, by sharing between presses those services that demand larger scale to be effective. Interestingly, a parallel structural response to the tension between efficiency and flexibility might be seen in Penguin Random House, the world's largest trade publisher, which organizes its editorial offices as a set of smaller, autonomous imprints (e.g., Knopf, McClelland & Stewart, Anchor) while consolidating scale-intensive printing, marketing, sales, and distribution. Unlike the COPIM project, which builds out structures to protect small-scale bibliodiversity, Penguin Random House builds structures internally to protect creative energies within an otherwise ruthlessly efficiency-oriented corporation. Both are attempts to balance the trade-offs of scale.

Concluding Thoughts

We suggest that, in the early 16th century, the Aldine press found ways to strike a balance between the scale required in order to sustain funding, staffing, and the press's brand and the scale at which an iterative craft operation could seek new ways of engaging readers and thinkers. But at that point in history, publishing was not yet an instrumental service offering, separate from the academy, as it would become in later centuries. Rather, Chris Kelty's "recursive publics" better describes the relationship between scholarship and publishing in the 16th century: an emergent public concerned with the means of its own articulation.

It is still possible to think of scholarly communities as recursive publics, even as they have outsourced their circulatory systems. The circular structure of research, writing, editing, publication, reading, and citing remains intact, but the degree to which it relies on corporate structures that demand standardization, scale, and industrial efficiency leads inevitably to the narrowing of the scope of what is possible to say and do in humanities scholarship—leads inevitably to a narrowing of the possible publics for whom humanities scholarship might be meaningful. Only by the most uninterested instrumental logic does such a system do justice to the humanities. But there are, we argue, opportunities in opening those black boxes and working to keep them open, especially in the context of humanities research, and a truly "open" system indeed requires this. To the extent that we take the infrastructure of publication for granted, we foreclose possibilities in the humanities' ability to engage publics beyond the narrow institutional economies of the university.

In treating *prototyping* as a core humanities methodology—inclusive of both form and content—and in resisting the traditional separation of concerns, the horizons of humanities research are wider and more open. But doing so forces us to confront the dynamics of scale: the tension between efficiency and agility and the extent to which capitalism's influence on the academy has already substantially tipped this balance toward the instrumental logics of corporate publishing. This is not an argument against scale; rather, we contend that scale cannot be an end in itself, especially in humanities scholarship. We hope for a new "Renaissance" of prototyping, in the digital humanities, in the humanities more generally, and in scholarly communication.

Open Peer Review Reports

Open peer review reports for this article are available at the following location: <https://doi.org/10.17613/g48e2-qg983>

Author Biographies

John W Maxwell is Associate Professor of Publishing at Simon Fraser University, where his research has focused on the past and future of publication technologies, the history of computing, and the evolution of scholarly communication. His teaching runs the gamut from practical digital publishing tools and strategies to the cultural criticism of the publishing industries. He is currently working on the digital remediation of SFU Library's collection of 15th and 16th-century editions.

Alessandra Bordini is a SSHRC Canada Graduate Scholar and a doctoral student in Interdisciplinary Studies at Simon Fraser University. Her research encompasses publishing studies, the history of books and media, and the digital humanities. She is particularly interested in data curation for digital special collections, digital design, and the culture of book production and circulation in Early Modern Europe, with a focus on the early history of Renaissance Venice's Aldine press. Alessandra holds a Master of Publishing from SFU and a Master of Arts in Translation Studies from the University of Siena (Italy).

References

- Adema, Janneke. 2015. "The Monograph Crisis Revisited." *Open Reflections*, January 29. <https://open-reflections.wordpress.com/2015/01/29/the-monograph-crisis-revisited/>.
- Adema, Janneke. 2024. "Experimental Publishing as Collective Struggle: Providing Imaginaries for Posthumanist Knowledge Production." *Culture Machine* 23. https://culturemachine.net/wp-content/uploads/2024/10/CM23_Adema_Experimental_Publishing.pdf.
- Adema, Janneke, and Samuel Moore. 2021. "Scaling Small; Or How to Envision New Relationalities for Knowledge Production." *Westminster Papers in Communication and Culture* 16 (1). <https://doi.org/10.16997/wpcc.918>.
- Adema, Janneke, and Samuel Moore. 2024. "The Copim Perspective on Scale." *Copim*, November 20. <https://doi.org/10.21428/785a6451.a3867955>.
- Barker, Nicolas. 1992. *Aldus Manutius and the Development of Greek Script & Type in the Fifteenth Century*. 2nd ed. Fordham University Press.
- Barnes, Lucy, and Rupert Gatti. 2019. "Bibliodiversity in Practice: Developing Community-Owned, Open Infrastructures to Unleash Open Access Publishing." In *ELPUB 2019 23rd International Conference on Electronic Publishing*. OpenEdition Press. <https://doi.org/10.4000/proceedings.elpub.2019.21>.
- Bath, Jon, Alyssa Arbuckle, Constance Crompton, Alex Christie, and Ray Siemens. 2018. "Futures of the Book." In *The Routledge Companion to Media Studies and Digital Humanities*, edited by Jentery Sayers, 336–44. Routledge. <https://doi.org/10.4324/9781315730479-35>.
- Bell, Kirsten. 2024. "Open Access and the Subjunctive Mood in Scholarly Publishing." In *Egalitarian Dynamics: Liminality, and Victor Turner's Contribution to the Understanding of Socio-Historical Process*, edited by Bruce Kapferer and Marina Gold, 272–89. Berghahn Books. <https://doi.org/10.2307/jj.14086448>.

- Beltramini, Guido, Davide Gasparotto, and Giulio Manieri Elia, eds. 2016. *Aldo Manuzio: Renaissance in Venice*. Marsilio.
- Bolter, Jay David, and Richard Grusin. 1998. *Remediation: Understanding New Media*. MIT Press.
- Bordini, Alessandra. 2023. "From Private Circles to Public Circulation: Aldus Manutius & the Emergence of the 'Public Sphere' in Renaissance Italy." *Pop! Public. Open. Participatory* 5. <https://doi.org/10.54590/pop.2023.005>.
- Bordini, Alessandra, and John Maxwell. 2019. "Breaking SFU Aldines Out of the Vaults: Aldus Manutius and Open Social Scholarship in the Sixteenth Century." *Pop! Public. Open. Participatory* 1. <https://doi.org/10.21810/pop.2019.007>.
- Bowker, Geoffrey C., and Susan Leigh Star. 2008. *Sorting Things Out: Classification and Its Consequences*. MIT Press.
- Carne-Ross, D. S. 1968. "The Means and the Moment." *Arion: A Journal of Humanities and the Classics* 7 (4): 549–57. <https://www.jstor.org/stable/20163168>.
- Celenza, Christopher S. 2006. *The Lost Italian Renaissance: Humanists, Historians, and Latin's Legacy*. Johns Hopkins University Press.
- Cerquiglini, Bernard. 1999. *In Praise of the Variant: A Critical History of Philology*. Translated by Betsy Wing. Johns Hopkins University Press.
- Davies, Martin. 1999. *Aldus Manutius: Printer and Publisher of Renaissance Venice*. Arizona Center for Medieval and Renaissance Studies. <https://archive.org/details/aldusmanutiuspri00daviuoft>.
- El Khatib, Randa. 2017. "Sharing Is Caring: The Culture of Reuse." Presented at the Networked Open Social Scholarship conference, Victoria, BC, January.
- El Khatib, Randa, David Joseph Wrisley, Shady Elbassuoni, Mohamad Jaber, and Julia El Zini. 2018. "Prototyping Across the Disciplines." *Digital Studies/Le Champ Numérique* 8 (1). <https://doi.org/10.16995/dscn.282>.
- Endres, Bill. 2017. "A Literacy of Building: Making in the Digital Humanities." In *Making Things and Drawing Boundaries*, edited by Jentery Sayers, 44–54. University of Minnesota Press. <https://doi.org/10.5749/j.ctt1pwt6wq.7>.
- Eve, Martin Paul. 2014. *Open Access and the Humanities: Contexts, Controversies and the Future*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316161012>.
- Eve, Martin Paul, and Jonathan Gray, eds. 2020. *Reassembling Scholarly Communications: Histories, Infrastructures, and Global Politics of Open Access*. MIT Press. <https://doi.org/10.7551/mitpress/11885.001.0001>.
- Fitzpatrick, Kathleen. 2011. *Planned Obsolescence: Publishing, Technology, and the Future of the Academy*. New York University Press.
- Fraser, Nancy. 1992. "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy." In *Habermas and the Public Sphere*, edited by Craig Calhoun. MIT Press.
- Galey, Alan. 2010. "Mechanick Exercises: The Question of Technical Competence in Digital Scholarly Editing." In *Electronic Publishing: Politics and Pragmatics*, edited by Gabriel Egan. Iter/ACMRS.
- Galey, Alan, and Stan Ruecker. 2010. "How a Prototype Argues." *Literary and Linguistic Computing* 25 (4): 405–24. <https://doi.org/10.1093/lc/fqq021>.
- Grafton, Anthony. 1999. "The Humanist as Reader." In *A History of Reading in the West*, edited by Guglielmo Cavallo and Roger Chartier. Polity Press.
- Grafton, Anthony, and Lisa Jardine. 1986. *From Humanism to the Humanities*. Harvard University Press. https://studylib.es/doc/9377099/from-humanism-to-the-humanities-education-and-the-liberal...?p=7#google_vignette.
- Grendler, Paul F. 1984. *Aldus Manutius: Humanist, Teacher, and Printer*. John Carter Brown Library. <https://archive.org/details/aldusmanutiushum00gren>.

- Guédon, Jean-Claude. 2001. *In Oldenburg's Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing*. Association of Research Libraries. <https://www.arl.org/arl/proceedings/138/guedon.html>.
- Harris, Neil. 2016a. "Aldo Manuzio, Il Libro e La Moneta." In *Aldo al Lettore. Viaggio Intorno al Mondo Del Libro e Della Stampa in Occasione Del V Centenario Della Morte Di Aldo Manuzio*, edited by Tiziana Plebani. Biblioteca Nazionale Marciana-Milano, Edizioni Unicopli.
- Harris, Neil. 2016b. "Aldus and the Making of the Myth (Or What Did Aldus Really Do?)." In *Aldus Manutius: La Costruzione Del Mito*, 346–85. Marsilio.
- Ingalls, Daniel H. H. 1981. "Design Principles Behind Smalltalk." *BYTE*, August. <https://www.cs.virginia.edu/~evans/cs655/readings/smalltalk.html>.
- Joseph, Heather. 2018. "Securing Community-Controlled Infrastructure: SPARC's Plan of Action." *College and Research Libraries News* 79 (8). <https://doi.org/10.5860/crln.79.8.426>.
- Kelty, Christopher. 2008. *Two Bits: The Cultural Significance of Free Software*. Duke University Press. <https://twobits.net>.
- Latour, Bruno. 1987. *Science in Action*. Harvard University Press.
- Latour, Bruno. 1999. *Pandora's Hope: Essays on the Reality of Science Studies*. Harvard University Press.
- Leonelli, Sabina. 2023. "Philosophy of Open Science." *Elements in the Philosophy of Science*, July. <https://doi.org/10.1017/9781009416368>.
- Lorimer, Rowland. 2016. "Innovation and Market Discipline in Scholarly Publishing." *Scholarly and Research Communication* 7 (2/3). <https://doi.org/10.22230/src.2016v7n2/3a246>.
- Lowry, Martin. 1979. *The World of Aldus Manutius: Business and Scholarship in Renaissance Venice*. Cornell University Press.
- Manutius, Aldus. 2017a. *The Greek Classics*. Edited and translated by N. G. Wilson. Harvard University Press.
- Manutius, Aldus. 2017b. *Humanism and the Latin Classics*. Edited and translated by John N. Grant. Harvard University Press.
- Margolis, Oren. 2023. *Aldus Manutius: The Invention of the Publisher*. Reaktion Books. <https://press.uchicago.edu/ucp/books/book/distributed/A/bo208669787.html>.
- Maxwell, John W. 2021. "Pop! Launching a Post-Digital Journal in the Pandemic." *IDEAH* 2 (1). <https://doi.org/10.21428/f1f23564.9213a838>.
- Maxwell, John W, Alessandra Bordini, and Katie Shamash. 2017. "Reassembling Scholarly Communications: An Evaluation of the Andrew W. Mellon Foundation's Monograph Initiative (Final Report, May 2016)." *Journal of Electronic Publishing* 20 (1). <https://doi.org/10.3998/3336451.0020.101>.
- Moore, Samuel A. 2017. "A Genealogy of Open Access: Negotiations Between Openness and Access to Research." *Revue Française des Sciences de l'information et de la communication* 11. <https://doi.org/10.4000/rfsic.3220>.
- Moore, Samuel A. 2019. "Revisiting the Present Future of Scholarly Communication: Bill Readings and the Birth of Online Publishing." *Samuel Moore* (blog), April 18. <https://www.samuelmoore.org/2019/04/18/revisiting-the-present-future-of-scholarly-communication-bill-readings-and-the-birth-of-online-publishing/>.
- Moore, Samuel A. 2020. "Revisiting 'the 1990s Debutante': Scholar-Led Publishing and the Prehistory of the Open Access Movement." *Journal of the Association for Information Science and Technology* 71 (7): 856–66. <https://doi.org/10.1002/asi.24306>.
- Moore, Samuel A. 2025. *Publishing Beyond the Market: Open Access, Care, and the Commons*. University of Michigan Press.
- Morison, Stanley. 1963. *The Typographic Book, 1450–1935*. University of Chicago Press.
- Nuovo, Angela. 2013. *The Book Trade in the Italian Renaissance*. Translated by Lydia G. Cochrane. Brill. <https://doi.org/10.1163/9789004208490>.

- Ogilvie, Brian W. 2006. *The Science of Describing: Natural History in Renaissance Europe*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226620862.001.0001>.
- Pade, Marianne. 2014. "The Material Fortune of Niccolò Perotti's *Cornu Copiae* in the Fifteenth and Early Sixteenth Centuries." In *Neo-Latin Philology: Old Tradition, New Approaches*, edited by Marc van der Poel. Leuven University Press. https://muse.jhu.edu/pub/258/edited_volume/book/39787.
- Pooley, Jefferson. 2024. "Before Progress. On the Power of Utopian Thinking for Open Access Publishing." *Culture Machine* 23. https://culturemachine.net/wp-content/uploads/2024/09/CM23_Pooley_Before_Progress.pdf.
- Ruecker, Stan. 2015. "A Brief Taxonomy of Prototypes for the Digital Humanities." *Scholarly and Research Communication* 6 (2). <https://doi.org/10.22230/src.2015v6n2a222>.
- Saklofske, Jon, and INKE Research Group. 2016. "Digital Theoria, Poiesis, and Praxis: Activating Humanities Research and Communication Through Open Social Scholarship Platform Design." *Scholarly and Research Communication* 7 (2/3). <https://doi.org/10.22230/src.2016v7n2/3a252>.
- Schonfeld, Roger C. 2017. "Reflections on 'Elsevier Acquires bepress.'" *ITHAKA S+R*, August 7. <http://www.sr.ithaka.org/blog/reflections-on-elsevier-acquires-bepress/>.
- Stadler, Matthew. 2010. "What Is Publication?" Presented at the Richard Hugo House's writers' conference, Finding Your Audience in the 21st Century, Portland, OR, September 11. <https://vimeo.com/14888791>.
- Star, Susan Leigh. 1999. "The Ethnography of Infrastructure." *American Behavioral Scientist* 43 (3): 377–91. <https://doi.org/10.1177/00027649921955326>.
- Warner, Michael. 2002. "Publics and Counterpublics." *Public Culture* 14 (1): 49–90.