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The born-digital in future digital scholarly editing and publishing

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Editorial scholarship is once again in a state of upheaval. Digital scholarly editing, for all it has achieved, has not accommodated the increasingly digital nature of cultural production and consumption. The theories and practices of digital scholarly editing need to better account for born-digital cultural materials like social media content, digital fiction, and video games. This paper discusses the state-of-the-art in digital scholarly editing, and advocates for future forms of digital scholarly editing and publishing suited to the born-digital.

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Main body

The scholarly edition remains central to the intellectual practices and productive outputs of many arts and humanities disciplines. Scholarly editions serve as the principal manner through which readers gain trustworthy access to primary cultural sources, benefiting from the bibliographic and interpretive guidance of experts. As defined by Patrick Sahle: "A scholarly edition is an information resource which offers a critical representation of (normally) historical documents or texts" (2016). Scholarly editions are, in essence, published versions of textual materials which include detailed introductions and notes providing context and background information about the context of the text contained, its historical and cultural context. They often include critical apparatus, a set of notes that provide information about variations in the text and offer explanations for editorial decisions.

Regarding scholarly editions, the use of the term "critical" can sometimes serve to confuse. Traditionally, the term "critical" is reserved for editions that have been collated out of a concern for textual authority; for example, deciding which version of a text is closest to an author's intention. Most modern iterations of ancient and pre-modern texts are critical by the very nature that, before they are published, scholars must decide on the "correct" content, separating the authentic text from that which has been skewed by scribing, translation, copyediting, and a myriad of other interferences. Critical editions are sometimes described as "corrected" texts, with the most widely accepted correction typically becoming the standard version that is consumed by researchers and readers. But it is becoming increasingly common to see the term "critical" applied to any edition that offers readers explanatory materials like an introduction or notes which serve to contextualise content. Frederike Neuber suggests the word "enriched" be favoured over "critical" so as to avoid such confusion, that we think of scholarly editions in the broadest sense as *enriched* representations of historical documents or texts (2014). Having said that, the concept of an "edition" is also not without contention. Whilst editions are considered central to literary and manuscript studies, a historian is unlikely to consider a printed collection of historical records to be an edition, instead favouring terminology such as "facsimile", "reprint", and "calendar", because intervening in the text of the historical record through editorial practices such as selection or "correcting" runs counter to the historical method. Despite this, when reprints of historical records are digital, historians will often enrich these texts with ancillary content and tools that support retrieval, analysis and interpretation; at which point the texts and the process of creating them begin to resemble editions (although the term "database" seems to be the more prevalent term among historians judging from the titles of many online historical resources).

Debates on disciplinary nomenclature often only serve to detain, but it is important that this paper's use of the terms "edition" and "critical" is clarified. Here, an edition is more than a reprint, on paper or digitally, but a text that has been selected over other candidates, altered, and/or annotated to present what the editor believes is an authoritative representation of the work or subject. When we use the term "scholarly" edition we do so in a way that implies "critical" in the more inclusive sense which conflates its meaning with that of "enrichment". In summary, all editions are critical to a greater or lesser degree by being interpreted and enriched rather than simply reprints of sources.

Scholarly editing of the *digital* sort involves the creation of authoritative texts that utilise the affordances of computers.[1] Some two decades ago, Peter Robinson presented a set of six propositions intended to define how critical digital editions should operate:

1. a critical digital edition is anchored in a historical analysis of the materials;
2. a critical digital edition presents hypotheses about creation and change;
3. a critical digital edition supplies a record and classification over time, in many dimensions and in appropriate detail;
4. a critical digital edition may present an edited text, among all the texts it offers;
5. a critical digital edition allows space and tools for readers to develop their own hypotheses and ways of reading;
6. a critical digital edition must offer all this in a manner that enriches reading.

Discussing his propositions, Robinson observes that there is "real continuity between our work as editors in the digital age and that of our predecessors" (2002), that digital editions "must be rooted in the debates about scholarly editing which have unrolled over the last decades" (2013, 107). In many respects, that is all digital scholarly editing is—scholarly editing, done digitally.[2]

But for something to be "done digitally" it must be more than just on a screen. The field of scholarly digital editing has undergone similar discourse to that of electronic literature and digital fiction, wherein many commentators have made a pronounced effort to emphasise the marked difference between text that has been merely remediated from static print to static screen, and content which is inherently born-digital:

> If an e-reader simply displays text in the way a printed book displays text—the only difference being that to advance the text one scrolls rather than turns a page—this is not "digital literature." It is printed work digitized for optimal display in a portable computational environment. Digital literature is algorithmic. It changes as the reader engages it. (Bouchardon 2016, 3)

Just as a book that has been *digitised* for an e-reader device is not *digital* fiction, a "digitised edition is not a digital edition" (Sahle 2016, para. 14). And just as a piece of digital literature is "algorithmic", scholarly digital editions are "guided by a digital paradigm in their theory, method and practice" (Sahle 2016, 16). While delineating the theories, methods, and practices of scholarly editing's digital paradigm is a complex undertaking, Sahle suggests some generalisations which can be indicative of whether an edition is *digital* or *digitised*: "Does it make use of the possibilities of digital technology and media? Is it not printable without a major loss of content and functionality?" (2016, para. 33).

We can tie ourselves up in knots by forming axioms to determine whether an edition is digital or simply digitised, yet we can also fail to appreciate that digital editing is a process that does not necessarily result in a digital edition. It can be unhelpful to discuss the process and the output as though they are the same thing. Modern printed editions are produced using many of the same digital tools and algorithmic methodologies as editions that are published online. Any editor of a genetic or variorum edition is likely to use text collation and variant analysis software to help them compare and understand the textual relationships of different versions, rather than the hand-written index card system of their predecessors. And just as digital editing can result in a printed edition, "traditional editing" (which today would probably still involve a word processor) can be remediated online. As such, only Robinson's fifth proposition would seem to be unique to *digital* editions—tools for readers to develop their own hypotheses and ways of reading—because it is the only proposition that can only exist in the digital realm and which is not an outcome from the editing process.

Robinson writes that the digital "is perfectly adapted to enactment of editions as an ever-continuing negotiation between

editors, readers, documents, texts and works" (2013, 127). But what has this ever-continuing negotiation realised? It has been at least three decades since digital editions first entered the critical imagination of scholars, and digital editions have never been more important than they are right now in this age of generalism and misinformation. And yet the form and structure of editions have remained relatively unchanged by the affordances of computers. The appendages have evolved; faceted search, data visualisation and mapping are now fairly commonplace as tools that bring statistical and spatial insights to the contents of texts for the benefit of users. But the fundamental presentation of digital editions continues to be an imitation of their sources. Do they need to change?

The continued dominance and prestige of printed editions would suggest that they do, if only to guarantee their existence into the future. But again, we should not treat the process and the output as the same thing, for it is the process of editing that has been most impacted by computers through the widespread adoption of markup languages such as XML and its predecessor, SGML. The Text Encoding Initiative's XML schema (TEI XML)[3] has been the *lingua franca* of digital editing for decades, as evidenced by the number of editions that use TEI and TEI's dominance as a "foundational technology" on digital humanities courses and summer schools. And yet a TEI-encoded edition need not necessarily result in a digital edition, just as DocBook and LaTeX XML schemas have been used in print publishing pipelines since the advent of desktop publishing.

Joris van Zundert has warned that if theorists and practitioners fail to "intensify the methodological discourse" in this domain, if there is a failure to "implement a form of hypertext that truly represents textual fluidity and text relations in a scholarly viable and computational [sic] tractable manner", there is every danger that the arts and humanities will "relegate the raison d'être for the digital scholarly edition to that of a mere medium shift" (2016, 106). Some notable exceptions aside, the field of digital scholarly editing to date has largely been occupied with producing machine-readable surrogates of printed materials such as books, manuscripts, historical documents or epistolary correspondences, using web technologies to facilitate familiar features such as annotation, editorial elaboration, glosses and links to other supporting materials, or metadata that enables materials to be classified or searched. Importantly, the process by which they are produced—editing—is a largely manual process, informed by scholarly practices, and this distinguishes scholarly digital editions from the enormous, low-quality digitisation products that many library and archive collections championed in the dash for access during the 2000s and 2010s. While digital scholarly editing and publishing have "matured" as fields (Schreibman 2013), there is still much to be achieved in terms of access, reproducibility, and methodological possibility. To date, much of the work in this field has been about routine transposition without true remediation, transferring manuscripts and print to screen for very limited return beyond visibility—although in the 1990s this alone was, and continues to be, significant for the democratisation of access to remote and dispersed archive materials.

Zundert's warning that the scholarly digital edition might be a mere "medium shift" from their printed counterparts gains sharper focus when we consider born-digital materials. Editing cultures and practices typically preclude born-digital sources, raising the possibility that the scholarly digital edition is nothing more than a book-shaped, digital remediation of sources from the analogue era. This essay explores why it is important for digital scholarly editing to confront the problem of editing born-digital materials in order to safeguard the digital edition's future as an authoritative representation of our cultural heritage and a serious tool for teaching and research. We ask whether the cultures and standards of digital scholarly editing, as they presently exist, are fit for the future.

Digital editions for born-digital materials. Theorists and practitioners have long been occupied with the question of what makes "a text" (McGann 1991; Ricoeur 1991; Robinson 2009). In the early nineties, Jerome McGann argued that texts should be viewed from a more "socialized" perspective, historicised in the context of their origins and conditions; the processes which led to their production, development, reception, and mutation. How a text is received is a consequence of complex interplay between its bibliographic and linguistic codes (Bornstein 2006), and how editors treat such dynamics remains central to textual scholarship. While some dissonance persists among scholars, the significance of socio-historical contexts is generally accepted, as is the conditionality of any act of editorial intervention (Robinson 2013, 44).

The present moment is one in which electronic forms of expression are essential to writing and culture. Much (if not most) of the cultural conversation is now occurring across digital platforms, in modes determined by the conventions of such systems. If the materials of contemporary culture are to be treated in a manner that reflects their social and technological forms, then there is a desperate need for the theories, systems, and conventions of editing to catch up. Culture is now largely happening on digital platforms, but the critical edition seems to be almost exclusively reserved for digitised print and handwritten documents from the past— even if that past is as recent as the era of the typewriter. Yet the sources that will one day underpin our understanding of today's culture are born-digital: works that are created digitally from the outset, to be distributed and consumed digitally, while the contemporary discourse that contextualises them is born-digital too, on blogs and social media platforms. How should digital scholarly editing, editions and publishing remediate these texts for future readers, "so that they may be better readers" (Robinson 2009, 50). The volume, variety and velocity by which cultural content is now created and consumed —three of the five v's of big data[4]—means that critical editions should assume an even greater importance in the future as a trusted conduit for conveying the value and veracity of these texts.

It is reasonable to expect that future literary and cultural historians will want critically curated and appended scholarly editions of social media posts by selected authors, politicians, and other figures of note, contextualised using the sea of online cultural, political, media, and social discourse that their messages either responded to or prompted. And beyond such contextual materials, many practitioners are now using digital platforms to create literary and artistic works which are themselves, having never existed in print, born-digital. Examples are plentiful, including electronic literature, digital fiction, e-poetry, net art, and, of course, video games.[5] Susan Schreibman notes that in a culture where born-digital materials are "more frequently the literary or cultural artifact", scholarly editing can no longer be solely or typically "about migrating the analogue into the digital or about re-presenting print norms in digital format" (2013). Instead, we have to confront the enormous complexities that born-digital works such as social media and instant messaging content present for the editor and publisher.

How do we accurately present texts that have been created within a constantly changing network of non-linear interactions? How do we reflect or mitigate the influence of the platform on the ways in which these texts are created, presented and read? How do we abide by the terms and conditions that govern access and reuse of these texts, as well as respecting the moral rights of their

creators? And how do we address all of this across different platforms and media types, whilst combining it with non-digital material? Even seemingly prosaic questions about the editing of born-digital materials are not straightforward. Where does a critical edition of tweets, posts or comments reliably draw its limits? Do replies count? Do links matter? How do we deal with time (non-linear narratives)? How does a critical edition of digital fiction or a video game reliably capture the virtual setting, the game space? And how do we annotate immersive, interactive environments?

That is not to say that no attempts have been made to create digital editions of born-digital materials. *Digital Fiction Curios*, a collaboration between Andy Campbell and Judi Alston from One to One Development Trust and Sheffield Hallam University's Alice Bell, is a playable 3D museum environment, rendered as a virtual reality curiosity shop, that showcases several electronic literature works created by Dreaming Methods in the early 2000s (O'Sullivan 2019, 45). A virtual museum of digital fiction, *Curios* is an engaging and immersive approach to curating and contextualising works of born-digital literature, but it is as much a creative endeavour as it is a critical edition, and as a publishing model, it is not easily reproducible. *Curios* has benefited from the expertise of Campbell and Alston, who collectively lead the aforementioned Dreaming Methods studio, as well as One to One Development Trust, an arts organisation that specialises in helping community groups to realise their creative ambitions through digital media. Individual, unfunded scholars typically cannot produce an exemplar like *Curios*; doing so would require advanced expertise and substantial resources to sustain such immersive projects in the longer term. Access is equally challenging, requiring hardware which would be viewed by underprivileged persons and institutions as prohibitively expensive. The field needs projects like *Curios*, exemplars of the *digital* rather than *digitised*; convincing responses to van Zundert's intensified methodological discourse. But it also needs other, more replicable, mainstream standards and practices, models of edition making suited to a wider, less creative forms of born-digital material, such as social media posts.

What might a reproducible *Curios* look like? Dene Grigar and Stuart Moulthrop explore one such model in their *Pathfinders* project, which uses scalar to document the experience of early hypertextual literature (2015). Where *Curios* seeks to actively re-create the Dreaming Methods back catalogue, *Pathfinders* accepts that emulating digital artworks based on obsolete technologies is an inherently difficult technical challenge to both accomplish and maintain. Instead, Grigar and Moulthrop record videos of the pieces being "traversed"[6]—in other words, read/played—by authors and critics. In this way, while the general public might no longer be able to engage directly with these early hypertext works for themselves—many of them run exclusively on legacy systems which are no longer widely available—there is at least a record of their existence, a means through which to understand how they looked, how they functioned, how they were experienced by others. *Pathfinders* avails of Scalar,[7] an intuitive web-based platform which is bookish in form but offers the multimedia affordances of a digital system, to perform an essential act of literary history,[8] but also contextualise the materials that history preserves. *Pathfinders* makes early born-digital literature functionally and intellectually accessible, and it does so using an intuitive, sustainable open-source platform—it represents an approach to the digital critical edition for born-digital materials which is relatively feasible and reproducible.

Curios and *Pathfinders* both treat very specific use cases: digital literature based on obsolete authoring platforms and media technologies. However, the challenges of presenting born-digital materials that exist within social media platforms are not too dissimilar to the challenges of presenting content that was created and accessed using now-redundant architectures—as editors we cannot expect to be able to simulate these platforms, and yet they have a strong influence on the way in which born-digital materials are created and accessed. *Pathfinders* accepts that we cannot create an edition that also mimics the original system. Likewise, what born-digital editing needs is solutions that are coupled with a realisation that we cannot save or present everything, and we cannot attempt to replicate the logic of the original system, as we have done with editions of analogue sources. When creating digital critical editions of born-digital material, one must be prepared to accept—even "embrace" (Sichani 2023)—a measure of decline. Just as scholarly editors have had to come to accept the conditionality of their work, so too must they now come to accept its impermanence.

It is difficult to envisage precisely that the field of scholarly editing might be radically transformed in the immediate term—we need reproducible systems and practices that accommodate born-digital materials *now*—when the wider arts and humanities remain preoccupied with the cultural and structural logic of print. This means that we need to address the complex challenges that born-digital materials present us with *now*. But the "real continuity" between digital editions and their predecessors also needs to be respected, even nurtured, because digital scholarly editing stands little chance of advancement if the practice becomes utterly divorced from the rich expertise and disciplinary traditions that have long sustained this domain. Any new data standards and frameworks for digital scholarly editing that are conceptually different to the book-oriented approaches that have dominated text-centred activities to date nonetheless should be rooted in established models and techniques.

For example, the Text Encoding Initiative (TEI)[9] provides a set of guidelines for encoding text-based documents in a way that is both human-readable and machine-readable, so that texts can be easily shared and preserved. Central to this mission are the TEI Guidelines, a set of recommendations for encoding text-based documents in digital form using its TEI XML schema, providing a standardised way to represent the structure and content of a text, as well as any associated metadata. The TEI Guidelines are designed to be flexible and adaptable, so that they can be used to encode a wide variety of texts, including novels, poetry, plays, legal documents, and so forth. Whether or not such flexibility means that the TEI could be feasibly adapted to accommodate the unique characteristics of a broad range of born-digital materials—including, among many characteristics—their size and volume, non-linear inter-relationships, multimodality, durability, and authenticity (since they can be easily reproduced, changed and republished)—remains to be seen.

There are times when the TEI Guidelines are not the appropriate standard for an editing project (Cummings 2023, 150–51), but since a more appropriate standard does not presently exist, it is difficult to see why any future frameworks designed specifically for born-digital editions would favour re-invention over extension. Also, as humanists we know that cultural content is never clear cut, that the analogue era did not suddenly end and the digital era suddenly began. So digital scholarly editions need frameworks that can accommodate the co-existence of both analogue and born-digital materials. However, TEI reinforces the book-oriented tropes adopted by most digital editions, because it is necessarily concerned with encoding the physical, logical and conceptual structures of texts that originate from the codex era. Any extension to TEI that is intended to encode born-digital materials in all their variety needs to capture the inter-relational, platform nature of these texts, rather than seeking to remediate them using the fixed, linear principles of printed books and handwritten manuscripts.

Having said that, and mindful of Robinson's point that editions are intended to make better readers, we cannot simply dismiss the book-oriented approach as *not* being the most appropriate way of remediating texts that are inter-relational and platform-based. After all, attempting to design a critical edition of born-digital materials in a way that resembles the materials' original inter-relationality is no different to presenting a digital edition of a mediaeval manuscript with sequential pages, a scripted font, and a textured background that resembles vellum. Returning to the example of *Curios* and *Pathfinders*, are we able to say that representing born-digital materials using the culture and logic of the book, in order to avoid attempting to mimic the original platform, is not the most appropriate method from the perspective of readers?

Digital publishing for born-digital editions. Editions are always intended for publication and use by others. As such, digital scholarly editions past and present are heavily influenced by publishing formats and business models, not only in terms of how they are accessed (print or digital), but how they look, function, and how they are used.

Many of the methodologies and technologies specific to digital editing matured during the CD-ROM era of the 1990s and 2000s, when digital editions were retailed by traditional print publishers. Academic publishers were quick to adopt a medium that offered the possibility of presenting scholarship in new ways, unrestricted by the quantity of the content (650MB seemed a limitless amount of data in the 1990s), novel enough to command a high purchase price, and yet still able to be sold in a box, with a cover design, in bookstores. For editors, the CD-ROM enabled them to present comprehensive quantities of evidence to the reader alongside tools to aid their own enquiries. Editors could also retain the academic esteem of a prestigious publisher and the familiarity of a physical object that could be possessed and placed on a bookshelf when it was not being used. Both publisher and editor were still firmly situated in the culture of the printed book. CUP's advertising blurb even announced that *The Wife of Bath's Prologue on CD-ROM* (Robinson 1996) "inaugurates a revolutionary new kind of 'book'".[10]

These CD-ROMs were hypertext editions, utilising the affordances of a high-capacity, digital storage medium, but many relied on specific software solutions that quickly became obsolete. Perhaps the most influential of these was Dynatext by Electronic Book Technologies[11], which was used by *The Wife of Bath's Prologue on CD-ROM* and many others because it was the publishing platform supported by CUP, the market leader in CD-ROM editions during the late 1990s and early 2000s in terms of the number of titles available. Dynatext was an SGML viewer that presented all the content as a single, continuously scrollable page, with a hypertext table of contents that enabled the reader to jump to specific sections, and pop-up windows for displaying context-based annotations or facsimile images. This linear, sequential approach to an edition, which mimics the experience of navigating a printed book, had a long-lasting influence on our conception of how a digital scholarly edition should function—as an electronic book—and many of the editions that have been created since, long after the demise of CD-ROMs and Dynatext, still resemble these early CD-ROMs. "Browse", "table of contents", "keyword search" and "advanced search" remain tropes of the digital edition. We would probably never consider replicating Dynatext's single, continuously scrollable page today, but the idea of presenting the content of an edition in a navigable structure that resembles the original source (a printed book, a manuscript, a handwritten letter) still persists. The only significant innovations in digital scholarly editions to have taken place since then have been faceted search[12] and data visualisation.

The short life span of individual CD-ROM editions within the rapidly evolving world of personal computers, alongside the emerging dominance of the web, would see publishers returning to printed scholarly editions because they represented safer, established business models.[13] Digital humanists, on the other hand, would turn to the web, creating online editions that were now free to the end-user. However, the principles of an "electronic book" that had been established during the CD-ROM era, in terms of how an edition should be presented and function, remained largely unchanged. The chief innovation in web-based editions was that open-source databases and web technologies, which democratised the creation of online content, now enabled editors to directly supervise and design the edition interface, often drawing on in-house technical expertise. Where CD-ROM editions suffered from software obsolescence, many web editions suffered from unsustainable design, programming and hosting arising from a "DIY" culture of software development.[14]

This history of the digital scholarly edition has resulted in a worrying relationship between print and digital for those who are concerned that digital editions might disappear if they do not adapt to new forms of cultural content. Commercial academic publishers continue to publish critical editions in print, and the continued popularity of these editions among scholarly editors and researchers suggests that the printed edition is here to stay. Digital humanists continue to hand-craft their own online editions, whilst attempts to formalise, harmonise and make online editions sustainable using edition publishing platforms and frameworks have largely failed. Online edition publishing platforms and frameworks exist, but few editors seem inclined to want to use them—whether this is due to a lack of trust or because online editions have become an inherently industrial craft culture is not clear. Many editors and their readers still want printed editions, and the way in which these editions look and function is still desirable. Whether this is due to the physicality of the printed book, the authoritativeness and esteem that it represents (e.g. for academic promotion), or because there is something intrinsically perfect about the way in which printed editions are structured and presented, requires further investigation.

It is easy to see why digital scholarly editions have mirrored their print counterparts: bookish forms are intuitive and familiar. Many scholars still worry about how digital scholarship will be "perceived" by peers and hiring/promotion committees, and so produce digital artifacts which remain comfortably rooted in recognised forms. Equally, editors are in danger of failing to recognise how politics can dictate an interface,[15] producing "radical" but unintuitive and unsuitable frontends in which their scholarship can become lost.

The continued success of printed editions, and the tendency of digital scholarly editions to look and function like their printed counterparts raises a difficult question for the future of digital scholarly editing: is there anything wrong with the book-oriented approach to the design and presentation of digital editions? The evidence, perhaps, suggests not. Digital editing theorists will write at length about our fixation with established models of edition making, always clamouring for a paradigm shift—as this paper does—whereas readers, end-users and the editors of printed editions are often silent on the subject. Do digital editions largely mimic their printed counterparts because readers prefer analogue content to be presented in ways that remain true to their sources, or because the book-oriented approach is an intrinsically perfect way of presenting these types of evidence, irrespective of the source? If the former, then how should digital editions of *born-*

digital materials be published? Should they mimic the structure of their platforms? If the latter, then we would need to consider organising and presenting born-digital materials in a book-like format. An alternative approach would be to develop an entirely new paradigm, perhaps an edition that is never fixed but which constantly changes its evidence and commentary, dynamically using machine-assisted editing, to reflect the changing nature of the sources it seeks to present? But there are deep cultural and technical challenges in all these approaches.

And of course, there is always the possibility that future critical editions of born-digital materials might be in the form of printed books, in the same way that collections of forms such as Instapoetry are now appearing in print.

The future of digital editing and publishing. Citing Judith Kennedy's essay on textual scholarship from the mid-nineties (1995), Amy Earhart reminds us that, as the twentieth century drew to a close, "literary editorial scholarship was in upheaval" (2012, 18). It would seem that scholarly editing has entered into a new era of upheaval as practitioners grapple with the disciplinary tensions and methodological challenges presented by a desire to keep existing forms and principles "stable", while also achieving digital editions which are, as Earhart puts it, "better-than-print" (2012, 22).

The present situation in digital scholarly editing is one in which the dominant practices, platforms, and procedures are designed to digitise print. The digital humanities, for all its advocates have achieved in the study of culture, is yet to provide intuitive, low-cost, standardised models for creating editions of born-digital materials of significant social and cultural value, materials such as social media or electronic literature.

Remedying this failure will be difficult; there are many great challenges to be overcome, both technical and intellectual. The common approach of the digitised edition—using a standard like the TEI Guidelines to remediate print materials into searchable, annotated facsimiles—is not readily transferable to the born-digital materials which will increasingly become our historical sources; particularly social media which presents challenges of reproducibility, durability, preservation, ownership, contextualisation and hypertextuality that are rarely a problem when working with analogue sources, as a text or corpus is traditionally treated as a fixed and bounded body of evidence. The goal of *digital* editions is the same as the *digitised*—that being, "to present a reliable text" (MLA Committee on Scholarly Editions (2011))—but established principles on "reliability" become problematic when applied to the born-digital.

Even if such questions could be theoretically resolved, how, in practice, do editors actually build such editions? The history of scholarly digital publishing is one in which publishers reverted to traditional, print-based models—which remains the most popular medium for critical editions—whilst digital humanists favoured bespoke routes, relying on purpose-built user interfaces for presenting texts and tools, with all the software sustainability issues that arises from this type of approach. That so many critical editions are printed suggests that readers still value this format, and that the principal activity involved in using an edition—reading—is still best realised using print. That so many digital editions have purpose-built interfaces suggests that editors are straining to break free from the old paradigms and lack adequate turnkey solutions to help realise their visions. A few open, sustainable platforms suited to the creation of digital editions do exist, but these are inflexible, out-of-the-box tools with no analytical features. All of these problems continue to beset digital scholarly editions that seek to remediate analogue sources—manuscripts, letters, early printed books, ephemera *etc*—which have none of the complexities of born-digital materials. And so, one could be forgiven for being pessimistic about the future of digital editing and publishing, because born-digital materials are far too complex to be edited and published successfully using the "DIY" approaches that have become the norm.[16]

The state-of-the-art in digital scholarly editing is largely a consequence of publishing being under-considered. If there is one thing from the long lineage of scholarly editing that might need to shift, even slightly, in the coming times then it is the extent to which digital publishing practices are considered as an essential part of editing's intellectual process. The fixity of the codex form does not need to be mirrored across digital publishing, so conditionality—how editors choose to structure, model, and display enriched content—is now as much an editorial intervention as any part of the editing process. None of this requires a complete reinvention of several decades worth of progression. The TEI Guidelines are, in effect, an "open-ended repository of suggested methods for encoding textual features" (Blanke, Pierazzo, and Stokes 2014, 20). Such extensibility means that there is much scope for the TEI Guidelines to be adapted for born-digital materials. Basing any future models for digital editing on an existing standard like TEI makes sense, especially given that born-digital and analogue materials need to co-exist in their edited form. However, editors must also break free from the book-oriented paradigms that have been perpetuated by digital editions through developing a sophisticated understanding of what the *needs* of a born-digital edition are, from the readers' perspective, as distinct from the needs of former editions. If we do not do this, editions of born-digital materials are likely to be remediated using print, since this is a medium that has already successfully addressed many of the complexities that analogue sources present, even if it has achieved this through reduction and simplification.

There are many other frontiers which have not been addressed in this paper: inclusive design and accessibility (Sichani et al. 2017; Martinez et al. 2019), minimal computing (Gil 2015; 2019), social editions (Crompton et al., (2014); Crompton, Siemens, and Arbuckle 2015; Price 2015; Robinson 2016; P. Shillingsburg 2016), mobile editions (Arbuckle 2014; Bordalejo et al. 2021), and engaged, public scholarship (Arbuckle and Siemens 2023). The born-digital reimagines how all of these operate in the context of digital editions. But it seems that most essential to the future of digital scholarly editing and publishing is the discipline's ability to come to terms with the changing nature of cultural expression and discourse, and the ways in which such materials are produced and consumed. Without such reckoning, digital scholarly editing is really only pretending to be anything but what it has always been, and as rich a lineage as that may be, it is time for something new.

Data availability

This research did not involve the analysis or generation of any data.

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Notes

1 Readers wishing to engage further with this topic are well-served by many comprehensive treatments of digital scholarly editing and publishing (P. L. Shillingsburg 1996; Price 2008; Gabler 2010; Earhart 2012; Schreibman 2013; Blanke, Pierazzo, and Stokes 2014; Sahle 2016; Driscoll and Pierazzo 2016; Pierazzo 2016; Apollon, Bélisle, and Régnier 2017; Boot et al. 2017; Ohge 2021), as well as the Zotero bibliography maintained by C21 Editions (zotero.org/groups/4376701/c21editions).

2 Of course, there are echoes of Kathleen Fitzpatrick in this statement, who has written on the wider humanities being "done digitally" (2012).
3 https://tei-c.org/
4 Big Data refers to the challenges and opportunities of processing extremely large or complex datasets. It is often characterised using five v's: volume, velocity, variety, veracity and value.
5 Good primers on these topics include "Electronic Literature: Contexts & Poetics" (Heckman and O'Sullivan 2018), "Digital Fiction" (Rettberg 2021), *Digital Poetry* (Naji 2021), and *Internet Art* (Greene 2004).
6 Scholars of electronic literature refer to how readers "traverse" a text, which essentially refers to the specific mechanics and narrative structures through which a reader/player interacts with a work.
7 Scalar is a popular digital publishing tool developed by the Alliance for Networking Visual Culture (see scalar.me/anvc/scalar/); it has been extensively documented in several case studies and reviews (Coble, Potvin, and Shirazi 2014; Tracy 2015; 2016; Pouyanne 2016; Tracy and Hoiem 2017; Roman 2018; South 2019; Isuster 2020; Gilman, Sargent, and Dietrich 2020).
8 See the section entitled A Case for Electronic Literary History, part of "The Origins of Electronic Literature as Net/Web Art", published in *The SAGE Handbook of Web History* (O'Sullivan and Grigar 2019, 431–32).
9 For more on the TEI, see tei-c.org, or essays by James Cummings (2008; 2019) and Lou Burnard (2013).
10 This can still be found in CUP's online record for the CD-ROM at https://www.cambridge.org/gb/academic/subjects/literature/anglo-saxon-and-medieval-literature/chaucer-wife-baths-prologue-cd-rom?format=CM&isbn=9780521465939
11 See MacKenzie (1993).
12 Faceted search enables users to filter search results based on specific characteristics in the data. It is a method popularised by e-commerce websites that enable lists of products to be filtered based on their qualities, such as manufacturer, colour, size *etc*.
13 For example, see Pidd (2022, 313-314) for an account of the software sustainability problems that beset the *The Hartlib Papers* CD-ROM.
14 Sustainability issues affecting the long-term future of scholarly digital editions are widely discussed in the Digital Humanities. For examples, see McLaughlin (2018) and Tucker (2022).
15 For more on the politics of the interface, see Andrews & van Zundert (2018).
16 Elena Pierazzo has penned a more thorough discussion of the issue of "Prêt-à-Porter" versus "haute couture" editions (2019).

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Competing interests

The authors declare no competing interests.

Ethical approval

Ethical approval was not required as the study did not involve human participants.

Informed consent

Informed consent was not required as the study did not involve human participants.

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