Although the Arden 2 and 3 series both inherited a changed understanding of how Shakespeare’s texts were transmitted, the Arden 4 will inherit a changed sense of why textual transmission matters at all. Thanks to the influences of unediting, performance studies, and the history of the book, it is not merely the methods of textual criticism that will need updating to account for recent scholarship, but also the purpose of textual scholarship as represented in an Arden 4 edition. Will the Arden 4 readers’ needs be served by the standard elements of textual apparatus that we have inherited from the Arden 3 and other print editions, such as the introductory note on the text, page-by-page textual notes, and appended material such as facsimile reproductions? Do these elements exist primarily to document the results of an editor’s work, and the decisions she has made in constructing the edited text? Do textual notes, in particular, exist to mediate the relationship between the reader, editor, and author, or must we broaden the range of agents represented in the collations? When the readers of the first Arden 4 editions turn to the textual apparatus, what will they expect to find there, and, most importantly, why?

This white paper will take up these and other questions in its first part, but we believe that questions about the Arden 4’s textual apparatus cannot be considered separately from the question of editorial labour itself, given that the Arden 4 editors will themselves be agents in the transmission of Shakespeare texts. There is nothing new in that claim, but the Arden 4 will differ radically from its predecessors in being the first of the established Shakespeare single-
volume series to reconceive of itself in an environment that is thoroughly digital. By this we do not mean that the Arden 4 will be the first complete Shakespeare series to be conceived as born-digital—the Internet Shakespeare Editions (ISE) already holds that distinction—but the Arden 4 will appear in a robust digital environment in which the presence of interoperable digital Shakespeare resources is no longer mostly a matter of speculation or wishful thinking, as it was in the early days of the ISE. In a typical scenario that would often arise in the early days of digital scholarly editions, a group of Shakespeareans might find themselves sitting around the same table, discussing a digital edition that was just taking shape, and making suggestions such as “what if it included facsimile images?”, “can we have performance videos in the commentary notes?”, “what about letting readers select their own textual variants?”. Although in this white paper we hope to engage the same experimental spirit that usually animates these kinds of questions, we would also emphasize the maturity of the digital edition as a scholarly form. The well-intentioned “what-if” / “can we add this?” question—a perennial bugbear for project managers—should always be contextualized within the present environment of real-world projects and their histories, and be tempered by the knowledge that any given digital edition should not, and need not, be exhaustive in scope.

For that reason, this white paper makes some suggestions about what the Arden 4 should not attempt, even though we pose some “what-if” questions of our own, in the spirit of digital reinvention. For the same reason, the second half of this white paper turns to the topic of labour, and to the subtopics of publishing infrastructures and the new kinds of agents in the scholarly editing process that come with the territory of digital editions.
Review of textual notes in other digital editions

Although digital technologies have been long been recognized as being particularly suited to aiding the study of texts in different versions, there is still no accepted convention for displaying textual variants in digital form. The Arden 4 thus has an opportunity here to break new ground, and to rethink the way that the presentation of variants has evolved since the Arden 1. Also, considering that by 2016 digital Shakespeare editions constitute scholarly genre with a history, there is much to be learned from how other digital editions have faced the challenge of what Tom Berger and others have called the “band of terror” in scholarly editions.¹ The following section reviews how textual variants are presented in the Enfolded Hamlet, the Internet Shakespeare Editions, the Oxford Scholarly Editions Online, Drama Online, and the Electronic New Variorum Shakespeare.²

A few caveats: this review is not an exhaustive study of how textual variants have been presented digitally, nor does it survey digital collation tools that produce their own visualizations (such as Juxta or the Versioning Machine), nor does it deal with the encoding of textual variants in XML.³ We have also

² While Folger Digital Texts is referenced elsewhere in this paper, and informs much of the discussion of the second half of this paper (on labour), we have chosen to leave it out of this comparative review given that work on its presentation of textual apparatus is still ongoing. As Folger Digital Texts’ textual apparatus platform is developed, and as its deep encoding is further exploited by interface sophistications, it may become a more useful touchstone for the Arden 4’s approach to the same questions.
³ These topics are subjects of ongoing research, including work being done by this paper’s co-authors. Rebecca is currently working with the Folger Digital Texts on new strategies for encoding and displaying variants, and Alan is working on an article, based on his Visualizing Variation project, that considers textual variation from a book-history perspective but also contextualizes it within digital visualization.
omitted discussion of Shakespeare apps for touchscreen devices, the most significant of which are the Luminary Shakespeare apps developed in partnership with the Folger. However, the question of accessibility on mobile devices is one that digital editions cannot afford to ignore in the future.

The Enfolded Hamlet, upon which Hamlet Works is based, is an early example of a digital edition that exploits the affordances of the medium to capture textual difference. Started in 1987 by Bernice Kliman, the Enfolded Hamlet responds to the question of upon which source text to base a new variorum Hamlet by combining, or enfolding, both F1 and Q2 into a text that allows the reader to select which text to view, or view both simultaneously. This approach brings the interpretive implications of the differences between the two sources magically to life, and provides a precise tool for examining textual variation on a line-by-line basis, but its broad appeal is naturally limited by the density of specialist information it contains. It also targets an expert audience to the potential exclusion of a more general one by the similarly specialist nature of its interface, which facilitates examination of textual variants in minute detail through a database-style presentation, rather than encouraging reading and consultation of the text in a more general way through a clear and elegant reading interface.

The Internet Shakespeare Editions, operating under Coordinating Editor Michael Best and Assistant Coordinating Editor Janelle Jenstad, is a resource launched in 1996 with an ambitious, three-pronged mission to provide a) a comprehensive collection of texts of Shakespeare, both freshly edited, peer reviewed editions, and various transcriptions and facsimiles, b) collections of

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essays and primary source materials on topics relating to Shakespeare, and c) resources pertaining specifically to Shakespeare in performance. The textual apparatus for the edited editions is similarly comprehensive, providing the user the option to visualize inline variants from dozens of sources.

Editorial/explanatory notes are also available from within the text, though the user cannot simultaneously view both textual and editorial notes. The impressive scope of this non-profit resource may also be a weakness, however, as the collection of edited editions has been slow to develop, and the resource itself is prone to performance lags and bugs.

A more recent development in the field of digital editions resources has been Oxford Scholarly Editions Online (OSEO), initiated in 2012. Led by an editorial board headed by Michael J. Suarez, S.J., this resource offers digitized and encoded versions of many of Oxford’s print offerings, complete with tools to aid research and organization of findings, and the ability to access PDFs of the source material for the digital texts. Like the ISE, OSEO offers textual notes and editorial commentary that accompany the texts, but unlike the ISE, users can access all of this material simultaneously if desired, as well as further readings linked to the passages they relate to. Unlike Hamlet Works and the ISE, OSEO offers selective, rather than exhaustive, textual variation (as one expects from a critical, rather than variorum, edition), and it does not attempt to visualize variation, a prominent characteristic of the other resources surveyed.

Of the resources reviewed here, OSEO has most in common with Drama Online, the large online dramatic works database of which the Arden series of Shakespeare texts is a part. Drama Online, like OSEO, offers digitized and encoded forms of the printed Arden texts, along with transcripts and facsimiles
of early sources. Also like OSEO, Drama Online features robust research and organizational tools, including note-taking, tagging, and sharing capabilities, as well as in-text textual and explanatory notes, and sophisticated advanced search. What makes Drama Online stand out are the ways in which quantitative data from the plays are used to create tools for the user. Not only is information such as number of roles broken down by gender included in the listing of each play and made discoverable in the advanced search mode, but also interactive tools or visualizations of character data are available to illustrate statistics from a given play, such as speech frequency by act/scene. As a platform overall, Drama Online places a clear emphasis on performance rather than textual scholarship.

Despite their differences, each of these resources share in common several features that are worth noting as we think about the Arden 4. First, each resource provides some access to alternate forms of the text, and particularly facsimiles of early sources. This implies a genre-wide expectation that the users of these resources will be interested in the material contexts of textual transmission, and will want, at least to some extent, to engage in a form of exploration conventionally left up to the textual editor – that of consulting the early witnesses of a work. A second commonality is that each of these resources offers some form of advanced search that enables users to filter out or isolate results from specific components of the text, such as stage directions, speech prefixes, or textual note contents. These types of search options depend on an encoding structure that distinguishes elements of the texts in detail, suggesting that this level of encoding granularity has become standard, but also hint at still more interesting ways that such an encoding structure could be used to analyze and manipulate texts. Finally, it is interesting to note that, despite the affordances of
the medium, none of these resources attempt any systematic multimedia enrichment of their texts, such as accompanying audio, video, or images.\(^5\)

Whether this is indicative of a prudent limitation of scope, or reveals an as-of-yet unexploited area for improvement, is up for debate.

The MLA’s Electronic New Variorum Shakespeare is unlike these other projects in that it has not yet been published in a single form. It exists as a stable set of XML/TEI encoding guidelines, a set of initial XML-encoded plays, and a prototype web interface created by Alan nearly ten years ago.\(^6\) Encoding of the NVS editions continues, and the MLA is currently working out a partnership to produce and host the ENVS (which may adapt elements of Alan’s prototype, or go in a different direction). So far, the ENVS editions are straight digital renderings of the print NVS editions, and their editorial content has not yet changed to suit a digital environment. The ENVS prototype therefore presents textual notes in the traditional “barbed wire” format, as they appear in print, but also provides readers with additional ways to visualize the information contained in each note. In the image below, which shows the infamous “land-damne” crux from *The Winter’s Tale*, one can see the original NVS textual note in the grey box on the right, with a two-column timeline visualization below it, and another visualization to the left which shows colour-coded emendations within

\(^5\) The most ambitious digital Shakespeare projects in terms of multimedia integration are those that grew out of Peter Donaldson’s Shakespeare Electronic Archive project at MIT, now gathered together as the MIT Global Shakespeare Project (shakespeares.mit.edu). Although these projects are beyond the scope of our textual-apparatus-focused survey, we recommend Donaldson’s work as a vital touchstone for any thinking about digital Shakespeare editions—especially those wishing to rethink the Shakespeare texts’ relation to media and mediation.

\(^6\) Details on the MLA’s NVS series, including links to the digital NVS files and other material, may be found here: [https://www.mla.org/About-Us/Governance/Committees/Committee-Listings/Publications/Committee-on-the-New-Variorum-Edition-of-Shakespeare](https://www.mla.org/About-Us/Governance/Committees/Committee-Listings/Publications/Committee-on-the-New-Variorum-Edition-of-Shakespeare)
the context of the line. Although we are not dealing with the XML encoding of textual notes very much in this review, it is worth noting that no additional encoding was required to generate these visualizations from the standard XML/TEI code created for the ENVS. However, it is also the case that not all textual notes can easily be parsed into visualizations such as these: even textual notes may contain a certain amount of syntactical idiosyncrasy. On the other hand, the ENVS is a limit-case in terms of the scope of its textual collation, and the Arden 4 would almost certainly be dealing with fewer and simpler textual notes. Whether the Arden 4 might also broaden the way we think about variants and collation, however, is a question we take up in the next section.

![Figure 1: A screenshot from the Electronic New Variorum Shakespeare prototype, showing multiple visualizations of the same textual note from *The Winter's Tale.*](image-url)

Notes:
Editing after unediting: textual apparatus in a digital environment

A premise that has already emerged in discussions about the Arden 4 is the reaffirmation of editors as essential figures in the construction and transmission of textual knowledge about Shakespeare. While it might seem banal to assert that editions should have editors, we feel it is necessary to underscore this principle given the potential blind alleys that have emerged in the scholarly literature on social media and social editions, digital archives versus digital editions, readers as editors, and the crowdsourcing of textual scholarship. While it is essential to understand the new textual ecology into which the Arden 4 will emerge, it is just as important to resist the temptation to essentialize computing in terms of the dominant trends of the day. It has become all too easy to make ungrounded generalizations about the nature of digital editions, whether to claim that they are inherently hypertextual, or decentered, or crowdsourceable, or, most recently, “social” in the sense of the edition being constituted by social media. Such arguments are usually motivated not by scholarship based on deep subject knowledge or a career-long commitment to studying specific texts like Shakespeare’s, but by those with political or institutional investments in organizing the labour of others in specific ways, and through specific digital tools and platforms. By contrast, the recent white paper by the MLA’s Committee on Scholarly Editions (CSE) reasserts the importance of editorial expertise in ways that are consistent with the Arden series’ tradition of recruiting top Shakespeare scholars as editors, though it also recognizes the changed digital

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landscape in which that expertise must make a difference. Our premise, then, is that within the environment of informational plenitude into which the Arden 4 editions will be born, the editor as a reliable subject expert and guide will be needed all the more.

That said, we are not suggesting that the role of the editor remains essentially the same as it always was, or that the editor’s relationships with other agents in the editing process, human and technological, remain unchanged—very much the contrary (as the second half of this paper will argue with reference to the role of the encoder). On the editorial side, the possibility of publishing the Arden 4 editions as digital-first changes the possible scale of an edition, and evokes the often-juxtaposed figures of the edition and the archive. As the CSE white paper points out, “a key trend in scholarly editing itself is toward the creation of an edition as a single perspective on a much-larger-scale text archive.” A Shakespearean example of this relationship is described by Eric Rasmussen, in which the New Variorum Shakespeare (NVS) *Hamlet* volume is being edited to stand in relation to the much more comprehensive *HamletWorks* website. Worth noting here, however, is that the digital archive in this example

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9 Committee on Scholarly Editions, “Considering the Scholarly Edition in the Digital Age,” *MLA Commons*: https://scholarlyeditions.commons.mla.org/2015/09/02/cse-white-paper/. Members of a Society for Textual Scholarship conference roundtable are currently posting responses to the Committee on Scholarly Edition’s blog, including one from Alan that may be tangentially relevant to the Arden 4 discussion: https://scholarlyeditions.commons.mla.org/2016/08/01/five-ways-to-improve-the-conversation-about-digital-scholarly-editing/.


by no means replaces the edition, and the historical moment in which that replacement might have been a good idea seems to have passed. (And to call such a corpus of neutral, unedited material an archive is to overlook a fact that practicing archivists live with in their daily work, and theorize in their own scholarly literature: archives are edited.\textsuperscript{13}) As contributors to the recent volume \textit{Digital Critical Editions} argue, it would be a step in the wrong direction to embrace “the idea that the editor should present the whole material and then, almost in a positivist manner, take a long step backwards, leaving the choice to the users.”\textsuperscript{14} This spectre of the reader-as-editor is one that we raise up mainly to banish back to the 1990’s, but it is nonetheless important to reckon with unediting as an intellectual current that shapes the context for the Arden 4.

Although we advise the rejection of some of the more superficial ideas that some in the digital humanities have associated with unediting, we believe that the legacy of unediting should nonetheless be a positive influence on the Arden 4’s approach to textual apparatus. The key is not to take unediting in the literal sense that its name implies, as for example Lukas Erne does when he characterizes unediting as the belief that “we need to un-emend readings which the editorial tradition has unjustifiably imposed upon us in order to recover the text’s true meaning.”\textsuperscript{15} In the work of Randall McLeod and Leah Marcus (whose early publications gave unediting its name) one sees a keen suspicion and scrutiny of editorial choices, granted, but the purpose of that scrutiny is rather to

\textsuperscript{13} On the edited nature of archives, and the lessons that literary editors and other non-archivists can learn from archivists themselves, see Galey, \textit{Shakespearean Archive}, ch. 2, “Leaves of Brass: Shakespeare and the Idea of the Archive.”


understand editorial interventions as part of the complex afterlives and
transmission histories of texts—especially Shakespeare’s.\textsuperscript{16} That is not the same
thing as a naïve desire to sweep away that history and return to a pure textual
origin, free of mediation. (For that, we should look not to unediting but to those
who fetishize the spelling and accidentals of the First Folio texts.)

In this sense, unediting is simply a recent name for the long-running
project of uncovering the cultural history of texts as read through the changes
and interventions that have happened to them over time, and through various
media—what McLeod has punningly called their “transformission.”\textsuperscript{17} Our
understanding of unediting and its legacy, or at least its relevance to the Arden 4,
could be summed up by W.W. Greg (of all people), in a remarkably forward-
looking description from 1932:

\begin{displayquote}
We have in fact to recognize that a text is not a fixed and formal
thing, that needs only to be purged of the imperfections of
transmission and restored once and for all to its pristine purity, but
a living organism which in its descent through the ages, while it
departs more and more from the form impressed upon it by its
original author, exerts, through its imperfections as much as
through its perfections, its own influence on its surroundings. At
each stage of its descent a literary work is in some sense a new
creation, something different from what it was to an earlier
\end{displayquote}

\textsuperscript{17} McLeod, Randall [as Random Clod], “Information upon Information,” \textit{TEXT: an
Interdisciplinary Annual of Textual Studies} 5 (1991), 246.
generation, something still more different from what it was when it came from the author’s hand.\textsuperscript{18}

This proto-McKenzian statement has rightly been flagged by Joseph Loewenstein as “Greg’s prolegomenon to the New Cultural History, to Gadamer, Jauss, and McGann.”\textsuperscript{19} Greg, like more recent textual scholars, is calling us to recognize the importance of the afterlives of texts, and that same recognition is what we believe readers should find in the Arden 4’s textual notes.

With this we can begin to answer the question that Zack has posed in his “Thoughts on Editorial Principles for the Arden 4”: “how should we edit after ‘unediting’?” Though the Arden 4’s editorial policy generally is beyond the scope of our recommendations in this paper, we can make recommendations with regard to textual collations. Textual notes have two fairly well defined purposes in the Arden 3, as Zack points out: they record authoritative variants; and they record significant emendations made by the present editor. A third, less defined purpose is to record “interesting” variants from later editions, whether the subsequent folios (F2-4) or later editions with named editors from the 18th century and after. The problem with this third category is that without clear criteria for inclusion beyond vaguely defined interestingness, it risks turning the Arden notes into cherry-picked variorum-lite collations.

We take it as a given that Arden editors should not be producing full variorum-grade collations, which in the NVS series include conjectural emendations and all but the most spurious readings; and even if printed Arden


\textsuperscript{19} Joseph Loewenstein, \textit{The Author’s Due: Printing and the Prehistory of Copyright} (University of Chicago Press, 2002), 259.
editions were shadowed by more comprehensive digital archives online, there would be no value in duplicating the NVS series, which by then should be online as well. As Rasmussen argues, “how many readers really care to know who first conjectured an emendation? It is virtually impossible to imagine a student reader who would actually accord greater value to a variant reading because of the stature of the editor who suggested it, or that of the editors who subsequently adopted it.”20 Such an editorially minded reader would be a logical target audience for an NVS edition—and one assumes that every Arden editor will have a well-thumbed NVS edition close at hand—but it would be a mistake to conceive of Arden 4 readers (or readers of any critical edition) as editor-surrogates, eager to use digital tools to replicate the intellectual labour of the volume’s named editor.

The difference between collations in variorum and critical editions, then, is not just size but also purpose, as Rasmussen indicates. The appropriate middle ground for a critical edition such as the Arden, we suggest, should be to collate emendations that have played significant roles in the afterlife of the text, even if the editor believes them to have no authority. In other words, the third type of reading to include in the collation should not simply be “interesting,” or a potentially authorial reading that some previous editor has hit upon through emendation, but also any emendation which, rightly or wrongly, has become a significant part of the text’s own cultural history. Textual notes should therefore be thought of as places for editors to tell the story—briefly, selectively, and compactly—of the text’s transformission.

20 Rasmussen, “Editorial Memory,” 396.
Although we have initially chosen to focus on unediting as a context for the Arden 4’s approach to textual apparatus, the larger intellectual current that has been shaping the landscape since the Arden 3 is the history of the book. With the rise of book history as a field, and especially its integration into post-secondary humanities curricula, the nature of a reader’s interest in textual transmission may be very different, and much broader, than in previous generations. David Scott Kastan’s *Shakespeare and the Book* (2001) and Andrew Murphy’s *Shakespeare in Print* (2003) both exemplify the difference that a book history perspective makes to Shakespearean textual studies. In the fifteen or so years since both were published, there has been a marked turn in Shakespeare studies not only to what Margreta de Grazia and Peter Stallybrass termed “The Materiality of the Shakespearean Text,” but also to the study of publishing and the book trades, readership, literacy, adaptation, and other aspects of textual production and reception.\(^{21}\) What does this mean for the writing of textual notes? For one thing, the range of agents that the notes may need to represent should be conceived not in terms of a line of transmission from author to reader (with interference from emending editors and others in between) but rather as something like Robert Darnton’s communications circuit, whose purpose is to call attention to agents in textual production who would otherwise remain invisible.\(^{22}\) For another, the textual variants and emendations that are visualized in the notes will need to be understood alongside discursive accounts of the text’s publishing history elsewhere in the edition, and topics related to the text.

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\(^{22}\) Darnton’s 1982 article “What Is the History of Books?” has been much anthologized, and his communications circuit model has been revised several times by others since then. For Darnton’s own revision of his circuit and reflections on its influence, see his article “‘What Is the History of Books?’ Revisited,” *Modern Intellectual History* 4.3 (2007): 495-508.
and its transmission should not necessarily be relegated to the traditional introductory note on the text. Suzanne Gossett’s Arden 3 Pericles is a good example of an edition that deals with textual matters head-on in the introduction, and makes a point of not relegating these topics entirely to a separate section. As a result, one reads the textual notes in her edition with a different mindset (assuming one reads the introduction first, which of course many readers do not).

Any Shakespeare series undertaken in the early twenty-first century will need to think about how to represent textual and publishing history on its pages (and screens) in light of the rise of book history as a field of study. However, if we take seriously Darnton’s—and especially D.F. McKenzie’s—emphasis on the social nature of textual production, and the multiple agents it usually involves beyond the author, then we must also think seriously about Shakespeare performance as possessing a kind of authority itself, and not just as a footnoteable or appendix-ready epiphenomenon of print. Performance studies have been reinvigorating Shakespeare studies in parallel with book history, but too often only in parallel, and there is still much potential for performance studies to influence and even disrupt editorial theory’s focus on the history of Shakespeare editing. This line of argument is much influenced by W.B. Worthen’s work, and particularly his repeated challenging of “the sense that the ‘work’ inheres solely in the text, and is decanted more or less authoritatively to the stage.” As Worthen puts the question, “How might we read plays without conceiving stage performance as merely ministerial, derivative of the drama’s

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'literary’ design?” To adapt this question to an editorial context specifically, how would we need to rethink textual apparatus if we were to regard Shakespeare in performance not as derivative but as constitutive, along with print editing, of the Shakespeare text in transmission? Why do we collate the emendations of editors, but not those of directors and dramaturges? The ephemerality of performance is certainly an obstacle, but not an insurmountable one, as several performance-focused editions have shown. Given the strong influence of performance scholarship in the Arden 3, it seems there is work still to be done in the Arden 4 to reconcile the all-too-separate worlds of textual and performance studies in Shakespeare.

The specific shape that performance should take in the Arden 4 is not yet clear to us, but it does seem clear that rethinking performance means rethinking the forms of editions, not just the nature of their editorial contents. As Tiffany pointed out in the SAA discussion, in previous editions “performance history often turned into a perfunctory list rather than an analysis.” The print-centric form of editions can constrain even editors who are otherwise deeply committed to thinking about Shakespeare performance as more than a footnote. In this regard, the New Variorum Shakespeare editions provide a cautionary tale. Notwithstanding the presence of an appendix that surveys performance traditions, one finds little impression in an NVS edition that the Shakespeare text’s performance history is as valuable in its details as its print history. The annotated NVS page tends to elide performance as a material transformation of the text that, for the most part, has been temporally continuous with print. Even periods of discontinuity between printed and performed Shakespeare, such as

24 Worthen, 13.
the age of adaptations in the eighteenth century, would be relevant to the study of the Shakespeare text’s history. Yet however expert an NVS editor might be on a play’s performance history, information about performance must be physically separate from the Shakespeare text in his or her edition.

As Worthen cautions in his digitally focused final chapter of *Shakespeare and the Force of Modern Performance*, a shift in medium away from print is no guarantee that performance will become more than a footnote or perfunctory list: this way of comprehending theatre is hardly inherent in print; it evolved gradually [...]. This view of performance is widespread in literary culture, and is common in theatrical culture as well, surfacing wherever we understand performance as an illustration, interpretation, embodiment, or realization of the text.25

In looking for new ways for Shakespearean performance to influence editing, Arden editors might temper the traditional theatre-history approach with some combination of a dramaturge’s-eye-view of the text and what Worthen calls “dramatic performativity.”26 Such an approach would not necessarily be limited in appeal to scholars and actors with a great deal of performance theory and history under their belts; performance-based teaching strategies have long been a staple of Shakespeare classrooms, and students often benefit from using performance exercises as ways of seeing the text—or, more accurately, the play—with new eyes. The specific shape this might take in Arden 4 editions will require more thinking and discussion, perhaps including Shakespeareans who don’t

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identify strictly as editors or theatre historians, but we believe this is an important new horizon for the Arden 4.

“A double labour”: editor and encoder in a digital production model

Another implication of our argument about the need to widen the recognition of agents in textual transmission has to do with digital production itself. The Arden 4 will, itself, be part of the continuum of textual production that Darnton’s circuit was designed to map, and we should ask what agents tend to be overlooked in discussions of digital editions. As we shall consider in this section, the particular agents and types of labour involved in digital scholarly editing are still in flux. But just as print and performance are constitutive of the meaning of the text in their own ways, so must the role of the digital encoder be recognized as closely akin to that of the editor.

As a technology of textual transmission and display, editions have always been encoded. In print, even basic Shakespeare play texts are replete with encoding in the form of style and formatting conventions that indicate structural and formal relationships within the text. Critical editions present an especially sophisticated example of encoded texts, in which the indexing system of the

27 For fairly recent discussions of these topics, see the contributions to the volume Digital Critical Editions, ed. Daniel Apollon, Claire Bélisle, and Philippe Régnier, cited above. The connections between editing, encoding, and labour within digital projects has been taken up separately by both of the authors of the present paper; see Alan Galey, “Encoding as Editing as Reading,” in Shakespeare and Textual Studies, ed. Sonia Massai and M.J. Kidnie (Cambridge University Press, 2015), 196–211, and “Mechanick Exercises: the Question of Technical Competence in Digital Scholarly Editing,” in Electronic Publishing: Politics and Pragmatics, ed. Gabriel Egan (Toronto & Tempe, AZ: Iter/Azriana Centre for Medieval and Renaissance Studies, 2010), 81–101; and Rebecca Niles and Michael Poston, “Re-Modelling the Edition: Creating the Corpus of Folger Digital Texts,” in Early Modern Studies and the Digital Turn, ed. Laura Estill, Diane Jakacki, and Michael Ullyot (Toronto & Tempe, AZ: Iter/Azriana Centre for Medieval and Renaissance Studies, forthcoming).
Lineated document is used to organize information such as variants and commentary. The rules by which editions are encoded are shaped and applied by the edition’s editors, who identify what kinds of information are to be represented, by the production staff of an edition, who adapt this editorial knowledge into a visual display, and by the medium itself, which dictates the parameters of what kind of information can be expressed. The relationship among these agents is reciprocal: affordances of the medium are tested and stretched by producers, responding to needs of editors, whose understanding of what information is expressible is shaped by the medium.

In the development of a digital critical edition, the tripartite relationship of editor, producer, and medium continues, but the domains of each agent are blurred. Semantic encoding is at the heart of this shift. As distinct from the kind of encoding that is described above, in which style and formatting are part of the medium itself and imply distinctions and relationships in the text, semantic encoding (such as the now industry-standard TEI-XML) describes those feature explicitly, and applies visual indicators only secondarily, through a separate process.

This difference means that the responsibility to identify and apply semantic distinctions, previously the domain of editors alone, is now shared by the producers of the document, its encoders. And, because this change also separates the presentation of the document from the encoding of it, the influence of the medium on the shape of the edition changes as well. This has traditionally been figured as the freeing of the edition from the bounds of its medium, but medium-independence (or more properly, medium-agnosticism) comes with its own new responsibilities; where decisions about how to represent specific types
of information used to have to suit only one medium at a time, now encoded texts must increasingly rely on standardized methods of encoding to ensure translation into a vast array of media. Today, not only are multiple methods of expressing critical editions available, they have also become a necessity in satisfying the various needs of a critical edition’s audiences.28

The redistribution of responsibilities in the creation of the edition has clear implications for how digital-first editions should be produced. One might begin by asking why, if using a semantic markup approach to creating a base text causes so much upheaval to a system of text creation that has worked well for hundreds of years, should the producers of a new edition bother with it. There are many answers to that question, but from a labour perspective, the main impetus is extension into additional forms, integrity of the text across these additional forms, and future compatibility. In a modern publishing venture, and particularly one of scholarly editing where profitability can be a major struggle, it is simply not good enough to have a production model that supports a single product. Readers expect to be able to access content in multiple media, at the very least print and eBook form, to say nothing of online editions, and the various accessible formats that will allow those with disabilities equal opportunity to use an edition. As Daniel Apollon, Claire Bélisle, and Philippe Régnier have pointed out (in their introduction to Digital Critical Editions), it is increasingly difficult in today’s scholarly, cultural, and technological climate to anticipate the types of readers that will be drawn to a new edition, or the modes of reading they may demand. Beginning with a responsibly encoded base text enables a relatively easy transition into a multitude of formats; once a set of rules

28 Apollon, Bélisle, and Régnier, 27.
translating the semantic distinctions of the encoding into presentational forms (visually, aurally, or otherwise) is produced, the conversion itself is relatively simple. And because this conversion can be made to be systematic (through the use of scripts and stylesheets), this model presents a vastly improved method for maintaining a consistent, stable text across platforms. No one knows better than Shakespearean textual scholars how transmission can lead to textual instability; when various versions of the text are derived from a central document, rather than converted from medium to medium (as, for instance, from print to eBook, as telltale conversion errors reveal to have likely been the case with eBooks from the Arden 3 series), there is a decreased chance of artifacts of the conversion process surviving as errors in the new medium.

Moving now from the question of the new role of medium in the creation of the digital-first edition, let’s consider the relationship between editor and encoder. As we have described earlier, in a semantic encoding model the editor shares the task of identifying and assigning meaning to parts of the text, and enriching it with supplementary information, with the encoder of the digital document, in a much greater capacity than she or he did with the “encoder” of the print document—which is to say the producer involved in typesetting, layout, and formatting. This new relationship between the editing of an edition and its means of production has implications for how both the editor and the encoder do their jobs. Apollon, Bélisle, and Régnier have made the claim that “[i]t is a hypothesis generally accepted by researchers that this integration of technologies in text and document production deeply modifies the different
editorial activities, their sequencing from production to reception.”

Indeed, methodologies in digital encoding can have a direct impact on the ways in which editing is performed, as a type of scholarly labour. Editors can approach textual problems more systematically than ever before, as the efforts of encoders enable the ability to group and examine like cases, express relationships within and among texts more explicitly, and test the results of their efforts through visualizations and other methods of modeling the text.

Conversely, encoders cannot create fitting encoding ontologies by which to structure and organize the text if their approach is not informed by the expertise of the editor. The relationship between editor and encoder is therefore not only overlapping, but also unavoidably reciprocal, and this relationship alters the nature of the digital critical edition.

The shift to a digital-first approach to critical editing entails a transformation of the relationship between editor, developer, and medium that promotes a greater intermingling of responsibilities between editors and encoders. It also inherently involves a separation of the semantic encoding from its individual presentations in various media. But what are the implications of these changes to the actual business of making an edition? Where might editors and encoders alike locate themselves within the Arden 4 as a digital-first series of editions?

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29 Apollon, Bélisle, and Régnier, 25.

30 For one rudimentary example, please see the “charChart” function of the Folger Digital Texts (FDT) API – a set of tools used principally by the FDT’s producers (Mike Poston and Rebecca Niles). The charChart function (an example of *The Winter’s Tale* can be seen here: [http://www.folgerdigitaltexts.org/WT/charChart/](http://www.folgerdigitaltexts.org/WT/charChart/)) visualizes when in the text characters appear on stage (in grey) and speak (in black). While automatic operations can check the validity of the XML document at the level of the code, they cannot check for logically invalid character behavior, such as characters who enter but do not exit the stage. This visualization makes such errors obvious.
To preface this part of discussion, the diagram below (building on Hilleslund and Bélisle [p. 129]), represents the digital critical edition production model argued for in this paper so far. Note in particular the interrelated role of editor and encoder in translating source material (early play text sources, other primary documents) into a set of encoded base texts, including both the play text(s) and supplementary paratexts (marked in orange). These paratexts might include textual notes, commentary, and introductions, but also content from related databases, and even original contributions from encoder(s), such as API functions. This base group of encoded documents are then translated into derivative media forms (marked in blue). Some forms may include just the play text, or any number of paratexts, depending on the scope of the product and the needs of its audience.

First and foremost, there is a crucial need to involve editors and encoders equally in the complete process of creating the digital critical edition, from planning to design to implementation to deployment. From the very outset,
deciding on the core principles of a series of editions, typically the exclusive
domain of editors, can benefit from the involvement of encoders, who contribute
their perspectives of how encoding methodologies impact how these principles
may be carried out. Different editorial approaches call for the use of specific
modules from the TEI schema, and choice of these modules drastically affect the
encoding structure of the document as a whole. As the editing/encoding process
continues, iterative stages of design, editing, implementation, experimentation,
and review that involve both editor and encoder together ultimately creates a
text of unprecedented precision (for example, in the fine encoding of character
behavior in stage directions), complexity (such as in the ability to systematically
associate related textual notes with each other both within individual texts and
among the corpus), and consistency (for instance, through the ability of the
encoder to flag or batch together similar textual features for the editor to review
and adjust using a single coherent set of editorial criteria). Just as the affordances
and limitations of the print medium have had a profound impact on editorial
approaches, the affordances and limitations of semantic encoding will impact
any editorial project that uses encoded text as its basis, and for that reason
encoders should have a place at the editorial table, just as editors should be
involved in encoding decisions.

Involving editors and encoders more explicitly as partners in the creation
of not just single editions, but of series, opens the door to corpuses of
unprecedented editorial consistency. Fredson Bowers, speaking as far back as
1966 about his expectations for a Shakespeare series with an editorial consistency
sufficient to enable trustworthy comparative analysis, suspected that “the final
and authoritative form of Shakespeare’s text ... awaits an electronic birth.”

Bowers surmised that a digital approach could surmount the impediments of the volume of labor required in relation to the economic limits of the publishing model of his day (148-9). An electronic editing and publishing platform provides the opportunity for a hitherto unrealized level of consistency, in that it relieves the human editor of a great deal of labor in establishing this consistency, and offers a “late-binding,” rather than “early-binding” publication model, which allows editors and encoders to return to already produced texts, make refinements to improve editorial consistency, and represent those refinements in updates to the various digital platforms that deliver the corpus to its audiences.

And what about the creation and management of these various platforms? The distinct advantage of creating a semantically encoded document as a master file, as we have mentioned earlier, is that the descriptive data in the document is translated into any number of presentational forms with relative ease and high fidelity. Books, online texts, eBooks, audiobooks, scripts, apps, visualizations, and analytical tools all can be produced from an encoded master document, and given that each of these forms derive from a central document, the consistency among them remains high while likelihood of errors though textual transmission remains low. The labour implication of this model, which treats each presentational mode as part of a network of textual offerings, is that the

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32 Adapting terminology from computer science, C.M. Sperberg-McQueen describes “early-binding” as a publication model in which variables of content and presentation must be established early in the process, and are therefore relatively unresponsive to the needs of particular audiences, and “late-binding” to describe a model in which these variables may remain mutable until potentially as late as the moment the content is retrieved by the user; see C.M. Sperberg-McQueen, “How to Teach Your Edition How to Swim,” Literary and Linguistic Computing 24.1 (2009): 27-39, 29–30.
management of these various assets must be coordinated, rather than siloed (as is all too common in commercial publishing). Changes to the central critical edition, in the form of the master encoding, must be propagated to its derivative products through this coordinated management whenever possible, and when new products are developed, this management structure should be drawn upon for resources developed and lessons learned in the production of the other products in the network.

A second implication of the model of a central master document from which is made various derivative forms is the simultaneous ability to consider the needs of multiple audiences while mitigating risk; both risk to the integrity of the Arden brand, and the risk of runaway requirements-lists to a major editorial project like the Arden 4. While creating digital critical editions tends to lead to fixation on brainstorming innovative added features, the Arden must also consider the characteristics (of reliability, scholarly rigour, etc.) that the series has built upon for more than a hundred years, and establish a text that continues to fulfill these criteria as a basis for future developments along the way. This requires the leaders of the Arden 4 project to consider not only what crucial editorial principles make up the play text itself, but also what types of the surrounding textual apparatus are constitutive of an Arden edition, and what apparatus might be reserved for derivative products that are targeted at particular audiences. This is necessary, as the uncontrolled addition of new features to a baseline product—in project management terms, “scope creep”—is one of the five most common causes of project failure.33 In the case of Arden 4, in

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which not a single title but a series of titles are to be developed, risk due to scope creep is increased exponentially. On the other hand, once the core digital critical edition, and its main derivatives (print, eBook, and web-based versions seem like obvious choices) have been developed, the core text can be refashioned into a variety of forms that cater to the needs and interests of particular audiences. Robust potential audience assessment in the planning phase of such products, coupled with the right selection of in-house, vendor, or third party partnership labour, allows such derivative forms to be developed in a focused and discrete manner that adds value to the primary text while protecting the primary text itself from becoming too generalized or unwieldy.

To close this section, we will turn briefly to a sample selection of the sort of encoding requirements that a digital-first, semantic XML-based Shakespeare corpus calls for, given both some of the ideas put forth in this paper, as well as the standards adopted by other, similar projects.

The most basic requirement of the type of encoded corpus described here is that the editors/encoders use TEI-compliant XML as the basis of the encoding. Using XML makes content more easily portable to other formats (such as print, eBook, and a wide range of accessible formats), and is likely to maintain its compatibility with future technology over time. Moreover, TEI-compliant XML already has an established set of guidelines (so no need to develop new in-house guidelines), and improves the chance of compatibility with other projects in the event that the Arden chooses to partner or network with other online Shakespeare resources.

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34 As Peter Holland points out in “Scholars and the Marketplace: Creating Online Shakespeare Editions,” thorough market research is one of the characteristics that sets a successful venture apart from an unsuccessful one (in Shakespeare 4.3 [2008], 261-69, p. 265)
Beyond this basic requirement, the editor/encoder team (as a corpus-wide group, not just the team responsible for an individual title) must decide on a level of encoding granularity that strikes a balance between achieving the goals of the resource and staying on schedule and within budget for the project as a whole. At the beginning of this paper, we reviewed several existing digital corpora, and noted that each of them have in common the ability to perform advanced searches that filter out or isolate particular elements of the text. The level of specificity that the team settles on for their encoding determines what types of sophisticated search are possible, as well as other functions such as visualization of patterns, and automated analysis. At the very least, a project like the one described should distinguish act, scene, and line segments, as well as speech segments, speech prefixes, and stage directions. Finer levels of encoding—character identification, or part-of-speech tagging, for instance—will offer additional functionality, but will also increase the amount of labour required.

Finally, the essential “unit” of the text must be established, defined as the smallest particle of text to receive an identifier. This provides the basis for displaying and manipulating the text, and for associating metadata or content (such as annotations) with it. Many encoded Shakespeare corpora in the past have set the typographical line as the base unit of the text, but a finer granularity, such as setting the base unit at the level of the word, allows for greater flexibility in display (for instance, allowing prose to be typographically fluid rather than set, if desired), and in referring to ranges of text that may be more or less than a

35 For examples, please visit the work-in-progress API at www.folgerdigitaltexts.org/api. For instance, application of the <sound> tag within stage directions in each play enables the API to generate lists of sounds found in each play.
single line (so, for example, textual notes can be more easily keyed to fragments of lines, or multiple lines, without invalidating the encoding).

Post-SAA discussion

The discussion of the Arden 4 at the 2016 SAA meeting in New Orleans, along with the “Five Ideas” survey, generated a number of threads that connect with our discussion in this white paper, and that are worth some reflection here.

One thread that emerges from the discussion notes is the question of how to implement the distinction between the student and scholar versions of each new Arden 4 edition. That distinction, along with the born-digital vs print distinction that will be necessary for the Arden 4 as a digital-first edition, presents a basic ontological challenge. That same challenge has been taken up by other Shakespeare series in ways that could guide the Arden 4; for example, the criteria that distinguish the student-oriented Folger Shakespeare editions from the scholar-focused Oxford or Cambridge (single-volume) editions are fairly straightforward. When editions have sought to provide gradations of editorial content within the same series, they have tended to imagine allowing readers to include or omit editorial aids according to the type of material (i.e. glosses, textual notes, links to facsimiles) as distinct from the difficulty of material. There was much discussion of this approach in the early days of the Internet Shakespeare Editions, though the ISE modern editions published so far seem not to have implemented this kind of à la carte system.\textsuperscript{36}

\textsuperscript{36}See http://internetshakespeare.uvic.ca/Foyer/plays/
A major editorial policy decision that will need to be made for the Arden 4—and reflected in the infrastructure for digital and editorial labour described above—is whether to treat types of editorial material such as textual notes as categorically belonging to the scholarly but not the student edition, or whether to flag some notes (of any category) as being for students and for scholars. In other words, one way of implementing the student/scholar distinction would be to assume that students do not need textual notes, but do need glosses. This rough-hewn approach would be easy to implement, but makes assumptions about readers that may not serve them well. We would not advise that the Arden series take the position that textual variants are of scholarly interest only, and have insufficient classroom value to warrant their inclusion in a student text. Many Shakespeare teachers would likely contest that premise, and with good reason.

A more nuanced approach would assume that all categories of editorial notes might appear in a student edition, and that their criteria for inclusion should be the difficulty or depth of information provided in any given note. This approach is mentioned in the SAA discussion notes, and could be applied via tagging across the range of editorial note types, from textual notes to glosses to longer commentary notes. However, if the annotation practices in previous Arden editions are any guide, it may be easy to flag some notes as more suitable for scholars or students, but other notes will be harder to categorize within this binary. For example, in her Arden 3 edition of Pericles Suzanne Gossett glosses the word lists in Pericles’s line “Like a bold champion I assume the lists” (1.1.62) as follows:

lists the place or scene of combat (OED sb.3 9b), as in R2 1.3.32, “Before King Richard in his royal lists,” but by transference the
place of erotic combat: VA 595, “Now is she in the very lists of love.” Malone locates 2.2 on “A pubrick Way, or Platform, leading to the Lists,” where the knights will contest for Thaisa.

One could imagine a student-oriented version of this note that limits itself to “the place or scene of combat” and omits references to R2, Venus and Adonis, and Malone’s note on the scene. But would we want to assume that the erotic associations of the word *lists* wouldn’t be relevant to the classroom? In that case, it’s not so simple to slice a note like this down from a scholarly version to a student version. This raises the question of whether the note is a stable unit across the student and scholarly editions, simply tagged to indicate its category, or whether Arden editors will be expected to write both student- and scholar-oriented versions of the same note, as one could imagine for this instance of “lists” in Pericles. Metadata can do only so much. Although digital topic-tagging of notes is still technically viable and worthwhile, it also seems clear that such digital solutions don’t obviate the need to think carefully about the ancient art of scholarly glossing—and especially the rhetorical dimensions of note-writing in a constrained space for a heterogeneous readership. (Having the Arden 4 general editors as volume editors themselves is an excellent way to respond to this challenge.)

One strategy we recommend is to limit the student-versus-scholar distinction to the marketing for the printed student editions, and to downplay

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37 We have discussed a hybrid editorial/technical approach, in which the editor follows a basic convention of note-writing (such as a broader, introductory sentence, followed by more detail when relevant), and the scriptor writes a conditional algorithm that displays just the first sentence, or the whole note, depending on parameters set by the reader. On the other hand, we would not want to pursue this kind of an algorithmic solution without first learning more about note-writing practice from experienced editors. This question turns on the crux of an old, still-unsolved humanities computing problem: the extent to which written language, in which form and meaning are intertwined, can be made algorithmically tractable.
the distinction in the full digital Arden editions. One reason is that it can be problematic to force users of digital interfaces into defined categories. It’s one thing to offer difficulty settings to, say, a videogame player, who may be able to self-categorize as beginner, intermediate, or advanced when asked to choose at the game’s outset (though most well-designed games today allow players to change difficulty settings at any point in the game). It’s another thing, however, to hard-wire a distinction between scholar and student into the technical infrastructure of the Arden editions. That distinction is becoming increasingly fraught as new pedagogical approaches seek to integrate undergraduate-level students into scholarly research, especially within the digital humanities. In a basic sense, students are scholars, albeit at a more junior level. (By the same logic, one couldn’t simply substitute the word scholar for researcher in this distinction.) Our advice, then, is not to hard-wire the student-scholar distinction into the backend or frontend of the digital Arden 4, but rather to tag types of editorial content as descriptively as possible, such that readers can customize their experience at a far more granular level than the student-scholar binary allows. In other words, we believe a reader of the digital Arden 4 editions shouldn’t be confronted by the question “am I a student or a scholar?” but rather “what do I wish to have in my experience of this edition?”.

The question of how to categorize notes in a digital environment connects with two other themes that run through the SAA discussion and parts of this white paper: one being the consensus that an Arden edition is premised on

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38 This is not to say that the content of a digital edition should be defined by a reader’s desires, or be “whatever the reader wants” as so many early hypertext theorists idealistically claimed. The question of agency and the so-called democratizing of editing is relevant here, but lies beyond the scope of this white paper.
critical selectivity, not radical inclusivity (i.e. the edition-vs-archive distinction);
and the other being the argument that an Arden edition should be the
reconstruction of a state of the text that the editor can identify and justify. If the
Arden 4 adopts both principles, they would helpfully clarify what Arden 4
editions should not do, but further thought will be required to determine how
these principles affect the inclusion of performance, as proposed above.

It is worth closing with a general reflection on patterns visible in the “Five
Idea” survey results, as they appear when aggregated. The most prevalent in
pattern among the suggestions for features can be summed up in the word more:
“more flexibility of access”; “more fluid and dynamic understanding of the
‘canon’”; “more refined … search mechanisms”; “more detailed notes” [and
more control for readers to omit them]; more sophisticated querying capabilities;
and, a repeated request, more close links between the Arden playtext and
facsimiles. With the latter example, one survey respondent uses the suggestive
word “toggle” to indicate the ideal proximity between the traditional Arden
playtext and more material: it should be a click away, presumably with none of
the logins, redirects, delays, and interface differences that usually occur when
shuttling between different digital resources.

As with so many potential features in a digital resource, the challenge
embodied in the word more and its imperative is not primarily technical, but
logistical. Does the Arden Shakespeare wish to become a facsimile project, as the
ISE did before publishing any of its critical editions? The answer is likely not,
especially when other facsimiles already exist. The principle of linked data could
serve as the strategy for keeping the threat of more at a safe distance, though it is
important to remember that such concepts were not developed with scholarly
editing in mind, and will require adaptation to the ontologies and work practices of humanities scholarship. As we have been recommending throughout this white paper, our best advice is to periodically step back from the lists of possible features, and from the enticing “what-if” moments that can make digital design so exciting, and what the Arden 4 editions should not attempt to accomplish. More, certainly, but not everything. We have found it useful to think about digital editing in terms of forms of agency and labour: what does it mean to be an editor? a reader? a student? an actor? The Arden 4 editions will appear at a time when these roles are being rethought in relation to new technological possibilities, but one thing that won’t change is that editions make texts intelligible on a human scale.

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