Jenstad, Janelle, Mark Kaethler, and Jennifer Roberts-Smith, eds. 2018. *Shakespeare's Language in Digital Media: Old Words, New Tools*. New York: Routledge. Pp. 204. ISBN 9781472427977, Hardback $155. ISBN 9781315608747, eBook $57.95.

In their 2017 article on "Digital Modeling and the Infrastructures of Shakespeare Editing", Alan Galey and Rebecca Niles describe Shakespeare's "mechanical mediation" as existing "on a continuum reaching into the present age of digital editing" (23). Drawing on the work of Willard McCarty (2004) and Julia Flanders and Fotis Jannidis (2015), Galey and Niles propose modeling — a conceptual mapping of "the relationships between texts, machines and humans" (23) — as "a promising foundation for forms of humanities computing that do not merely apply digital tools to humanities research questions unidirectionally but also apply humanistic ways of thinking within computing practices" (25). In their new collection on *Shakespeare's Language in Digital Media*, Janelle Jenstad, Mark Kaethler and Jennifer Roberts-Smith bring together essays that attempt similarly to stretch from old to new, from traditional print editing of Shakespeare to digital analysis and electronic editing. Usefully, the essays describe and explain some of the digital tools developed and used by language historians and linguistic scholars in constructing the new models.

The book is divided into three sections: "Old Words through New Tools: Re-Reading Shakespeare with EEBO-TCP and LEME"; "Old Words, New Worlds: Shakespeare's Language in Digital Editions"; and "Old Words, New Codes: Shakespeare and the Languages of Markup". The emphatic repetition of the words "old" and "new" reveals a challenge of the collection: the essays vary widely in their approach to a readership that will have different levels of experience with either Shakespearean textual scholarship or digital linguistic analysis. The authors recognize that for some potential readers, Shakespeare is a known quantity and digital technology is less familiar, but the contributors give various levels of attention to this difference. For example, some readers will be rebuffed by the free use of acronyms. On page 7 we are informed that "when referring to electronic databases, online projects, or digital tools [. . .] each essay presumes that the reader is aware" of what the acronyms stand for. Consequently, in the essays the "abbreviations are not accompanied by the full title", but acronyms are listed as "new tools" in the back of the book. However, the reader has already been faced with a page (5) which included more than a dozen of these abbre-

viations, only one of which this primarily non-digital scholar immediately recognized. It would have been much better to allot the minimal amount of space required to give the full forms at the beginning of each essay. It is annoying to lose track of an argument while leafing through the book for an explanation of TaPoR3, for example.

The first section of the book is the one that most clearly focuses on Shakespeare. Here Valerie Wayne's essay offers a model methodology for using both print and digital resources to explore the full significance of Shakespearean words. Working "beyond the *OED* loop" and using LEME (Lexicon of Early Modern English) and EEBO–TCP (Early English Books Online–Text Creation Partnership), Wayne explores words sometimes previously treated as compositorial errors ("solicity") or spelling variants ("imperseverant") and, strikingly, finds evidence for her controversial choice of Innogen rather than Imogen as the name of *Cymbeline*'s heroine.

The remaining three essays in the first section also concentrate on what digital resources can do to expand our understanding of the building blocks of Shakespeare's works, his words. Along the way, the authors employ both new tools, especially LEME, and old-fashioned close reading. Ian Lancashire and Elisa Tersigni describe their creation of a "hard word annotator", based in LEME, where the hard words are not those unfamiliar to a modern reader but those that would have seemed difficult to Shakespeare's contemporaries. The authors illustrate the methods Shakespeare used to help his audience understand an unfamiliar term: either by content, or by adding a better-known synonym, or by repeating the word in an explanatory context. Inputting the text of a speech from *The Tempest* in which the Folio has Miranda address Caliban as "Abhorred Slave / Which any print of goodness wilt not take", they show that the percentage of hard words matches the language of the father rather than of the young girl, confirming the desire of critics to reassign the speech to Prospero. Daniel Aureliano Newman similarly shows how the "special discourses" of law and botanical science illuminate the issue of bastardy in *King John* and *The Winter's Tale*. Finally, Elizabeth Bernath demonstrates how a corpus-linguistic analysis of period glossaries traces the progress of such hard words into the "mother tongue".

Unfortunately, one of Bernath's examples demonstrates what happens when linguistic analysis is not combined with traditional text-critical methods or "humanistic ways of thinking". In showing how Shakespeare "clarifies meaning with indirect contextual signifiers", she uses the word "wary", writing:

> when Hamlet describes "all the uses of this world" with the unfamiliar lexeme "wary", he follows with three contextualizing nouns, "stale, flat, and unprofitable" [. . .] connoting a sense compatible with the sense in Timothy Bright's definition, "ware and care" (1588, EEBO, H3v), and Claude Hollyband's synonyms, "craftie" and "deceitful" (1593, LEME, 205-3165). The lexeme "wary" was enfranchised by 1656. (71)

Here Bernath startles the Shakespearean. Hamlet describes the uses of the world as "wary" only in the second quarto (Q2); the word is "weary" in the Folio (F). All editors treat "wary" as a spelling variant, and all major modern editions (New Oxford, Arden, Norton 3, etc.), whether based on Q2 or, like the separate volume of the Arden three edition, on F, have "weary" without even a commentary note. Harold Jenkins's magisterial Arden two edition (text based on Q2) has "weary" and cites La Primaudaye, *The French Academy*, for grief causing "a man to hate and be weary of all things". That "wary" was enfranchised by 1656 is thus not sufficient to explain why the "uses of the world" are "wary" for Hamlet. Bernath does not explain the textual history, or why the word suits the context, or why its inferred meaning in 1.2 differs from that in *Hamlet* 1.3, "Be wary then, best safety lies in fear". Even the best linguistic tools still need to be combined with textual history and critical literary analysis.

In the book's second section Andrew Griffin and Toby Malone take different approaches to the question of how digital editions can incorporate performance history. For Griffin the advantage of the method of the Queen's Men Editions (QME), which record both "the concrete facts of a single, specific performance" as well as notes discussing alternative performance choices, is that it presents major ways of confronting the "singular characteristics of 'the play' as an ideal poetic object, as a material textual object, and as a transient performance" (102). Indeed, Griffin parallels the differences in these two ways of treating performance with those of editors divided between idealist and materialist practice, the first looking to present the "best" version of a work and the other acknowledging the physical history of a text through time. (Other Shakespeare editions, such as the Norton 3 electronic edition, now also have pop-up comments on productions, so QME is no longer as unique in this as Griffin claims.) Malone's contribution instead demonstrates the use of a spreadsheet platform to incorporate a wide range of performance-based playhouse materials. Both approaches raise questions about how to handle a substantial amount of material. Griffin writes that QME offers a "comprehensive and diplomatic transcription

of all early texts" (92), but admits that for his example, the anonymous sixteenth-century play *King Leir*, "all" is a single surviving quarto. The challenge is greater for Norton and Oxford, which are now publishing "all" the early witnesses for the Shakespeare plays on their respective websites. In such cases one wonders just how many sources will prove manageable. Malone's spread sheet includes two "early print witnesses", Q1 and F, for *Richard III*, along with ten promptbooks and performance editions; he claims his program could accommodate "a virtually unlimited number of incrementally collated texts" (115). In that case, perhaps the limitation is not on the digital platform but on the user's patience and ability to absorb and integrate so much material.

The book's third section argues that "encoding and programming are critical acts" (125), and its purpose is to help scholars understand and evaluate key digital tools (127). Arguably, the first essay in the section, on "Digital tools for the study of early modern drama", should have been the first in the volume. Laura Estill and Andie Silva define and explain the uses of seven digital tools, including the English Short Title Catalogue (ESTC), Database of Early English Playbooks (DEEP), Early English Books Online (EEBO), British Library Manuscripts Online (BLMO), Early Modern London Theatres (EMLoT) and Patrons and Performances (both REED or Records of Early English Drama sites), and the World Shakespeare Bibliography (WSB). For these authors such digital tools "both inform and shape our research questions" (141). The authors recognize "the tension between pre- and post-digital approaches to information design" (139) and have high praise for those databases that make connections between previously separate databases (e.g. DEEP), enable easy access to knowledge (WSB), or reconfigure existing data, like the REED projects.

Both of the remaining essays give examples of such new work and alert the reader to its potential difficulties. Diane Jakacki is both an editor of *Henry VIII* and the editor of a digital interface, TEI compliant XML. Even those who do not work in digital humanities and are unfamiliar with the terms she uses (Voyant, Juxta Commons, Gephi, Bubblelines) will recognize that her overarching question, how much and how deeply to tag, is a digital version of the question about annotation facing every print editor — a tag, like a note, indicates what matters and what needs to be explained in a text. So what to do if, as in the case of the Internet Shakespeare Editions (ISE), the tagset becomes so dense that it ceases to be readable by the latest web browsers, and yet it is the development of "ever more sophisticated structures for capturing and rendering diplomatic transcriptions of early witnesses and modern-spelling texts" (159) that makes an electronic edition so attractive?

Similarly, Michael Ullyot and Adam Bradley describe the uses of a tool they built to gather examples of a rhetorical scheme (*gradatio*), but, as they evaluated the list of examples the machine generated, they discovered that "only a text-analysis tool that integrates seamlessly with timeless critical habits, and that is coextensive with our editions of the texts we are criticizing, will make future literary criticism both definite and natural" (146). In their view, a digital tool like theirs can only "change our experience of Shakespeare's words" when it operates "alongside future critics' current reading habits" and is "embedded into texts as subtly as a footnote" (152–3). Their proposal to integrate digital tools with traditional methods of literary criticism, rather than requiring critics to adapt their habits to the limitations of those tools, would certainly make the transition to digital media easier for many Shakespeare scholars.

Unfortunately, the book would have benefited from more professional treatment by Routledge's editors. Some of the illustrations, especially of LEME, are so small and blurry as to be useless. What appears to be the caption for Illustration 2.5 is misplaced. And most oddly, although the three editors are identified on the back cover, the other contributors of the individual essays are nowhere identified. Nevertheless, this collection takes its place alongside the work of Flanders and Jannidis and McCarty, as well as such collections as *Shakespeare and the Digital World* (2014), edited by Christie Carson and Peter Kirwan, in preparing the reader to enter the brave new world of digital editing.

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