
Opening the Early Modern Toolbox: The Digital Interleaf and Digital Commonplace Book

Scholarly and Research
Communication

VOLUME 4 / ISSUE 3 / 2013

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Abstract

This article considers how early modern note-taking practices might inform the design of digital reading environments. In particular, it argues that proximate, handwritten note taking is essential for both memory retention and archiving, and that digital readers should work within structures that allow for such practices. The Digital Interleaf, the first of two conceptual prototypes introduced, offers one response to that need: a multi-layered page designed for individual and social annotation. The Digital Commonplace Book, the second of the prototypes discussed, provides a method for indexing notes from the Digital Interleaf. These two interoperable concepts are imagined as the first in a suite called the Early Modern Toolbox.

Keywords

Proximity; Note taking; Handwriting; Archiving; Interleaf; Annotation

One of the consequences of the popularity of the academic blog as a space (if not *the* space) for online discussion is that critical commentary largely occurs away from the text under consideration rather than beside or on it.¹ Even in those instances when a single text is the focus of discussion, bloggers tend to comment on comments, rather than on texts, and this tendency only increases as the string unravels. The prevalence of detached commentary in digital environments has significant implications for the future of reading, particularly for how scholars retain information and how they archive textual engagement. The conceptual prototypes introduced below are therefore

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CCSP Press

Scholarly and Research Communication

Volume 4, Issue 3, Article ID 0301127, 13 pages

Journal URL: www.src-online.ca

Received June 19, 2013, Accepted May 20, 2014, Published September 11, 2014

Schofield, Scott, Weber, Jennette, & The INKE Group. (2013). Opening the Early Modern Toolbox: The Digital Interleaf and Digital Commonplace Book. *Scholarly and Research Communication*, 4(3): 0301127, 13 pp.

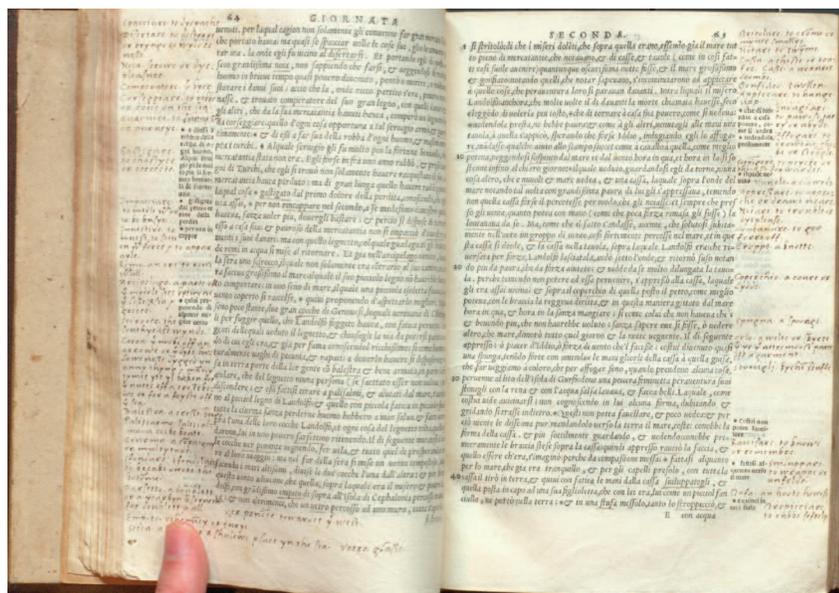
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designed to bring digital readers closer to the texts they study. While both are based on earlier textual exemplars, each is modified to take advantage of the affordances of current digital technology. Before looking at the design and function of the Digital Interleaf, however, we want to look more carefully at some examples of early modern note taking, for it is there we find a hermeneutic that is well suited to, if often absent from, note-taking practices in the digital environment.

When the French jurist Guillaume Budé read his copy of the first printed edition of the works of Homer at the end of the fifteenth century, his first impulse, as for many readers today, was to try to master its vocabulary.² Synonyms, definitions and summaries run up and down the margins of the book in Budé's distinctive hand. While Budé's reading was particularly ambitious, as he approached Homer in the original Greek, his annotations tell a familiar tale. Many readers today still underline and highlight their texts, and occasionally leave summaries in the margin.³

What makes Budé's example different is that he returned to his Homer. "Working his way into the hard detail," as Anthony Grafton (1997, p. 156) explains in his case study of the humanist scholar, he "attacked the text again and again" (p. 156), adding new notes and even images to the wide margins of his copy. For Budé, Homer's *Iliad* and *Odyssey* were not merely a place for active reading, but the space to capture Budé's cumulative encounters with the same text. For Budé, the book was archive – and he was not alone. Michel de Montaigne read his copy of Lucretius with pen in hand, and he clearly re-read all or parts of the classical writer's works on subsequent occasions as he prepared new versions of his famous *Essais*.⁴ The Elizabethan polymath John Dee similarly riddled his books with a range of notes and drawings.⁵ Dee's near contemporary, Thomas Lucy, also read his copy of Boccaccio's *Il Decamerone* by underlining words and offering English translations of the Italian in a fittingly Italic hand (see Figure 1).

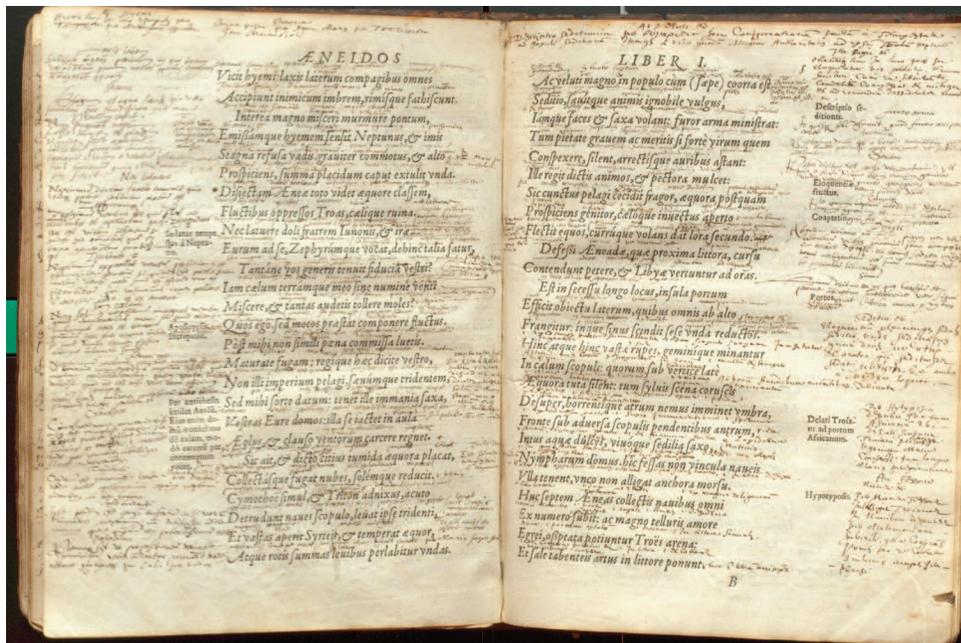
Figure 1: A representative page from Thomas Lucy's copy of Boccaccio's *Il Decamerone* (Venice, 1548). Like Budé, Lucy read Boccaccio in the original language and focused on lexical matters, using the margin to translate, define, and summarize.



Source: Image courtesy of the Thomas Fisher Rare Book Library.

Looking back on how early modern readers engaged with classical authors in the margins of their books may seem strange to those interested in modelling digital reading environments. Such close encounters as these seem particularly out of touch in an age preoccupied with distant reading,⁶ yet there is much to learn from these examples. The fact that early modern readers used their books to archive their notes is significant, and how they did this is equally important. Besides scoring the margins of the page, many early modern readers annotated in between and above lines of printed text, parsing the page down into the smallest of units. Such granular note-taking methods are exemplified in a sample page spread from a 1555 edition of Book 1 of Virgil's *Aeneid* (see Figure 2). While the library catalogue's description of this edition as "copiously annotated" is accurate, it does not capture the fact that this single spread contains no less than 1000 manuscript words, 500 of which are interlinear.

Figure 2: A representative page spread from a copy of Philipp Melanchthon's edition of Book 1 of Virgil's *Aeneid* (Paris, 1555).



Source: Image courtesy of the Thomas Fisher Rare Book Library.

"Copiously annotated" is equally insufficient for describing the visual supplements added to the pages from a heavily annotated 1513 copy of Vitruvius' works (see Figure 3).

By carefully juxtaposing manuscript note against printed text, and by illustrating and illuminating the page, these readers – these users – transformed their books into graphic objects. Reading, in this sense, was as much a visual exercise as it was a mental one, as creative as it was interpretive. Reading with pen in hand, in other words, encouraged a more detailed response to text; it also allowed one to customize the book and archive the reading process. Those three things remain crucial to the future of reading and need to be encompassed in digital reading environments; we ignore them at our peril.

Figure 3: An example of the graphic potential of the early modern page. To archive his response, this anonymous annotator has used a combination of marginal, interlinear and visual notes. From Marcus Pollio Vitruvius, *Vitruvius iterum et Frontinus* (Venice, 1513).

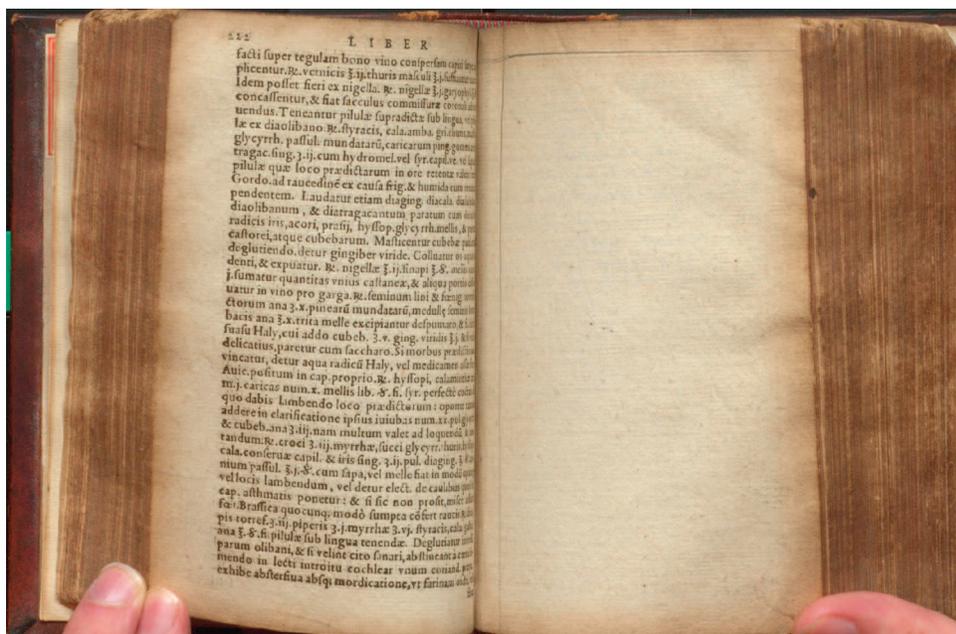
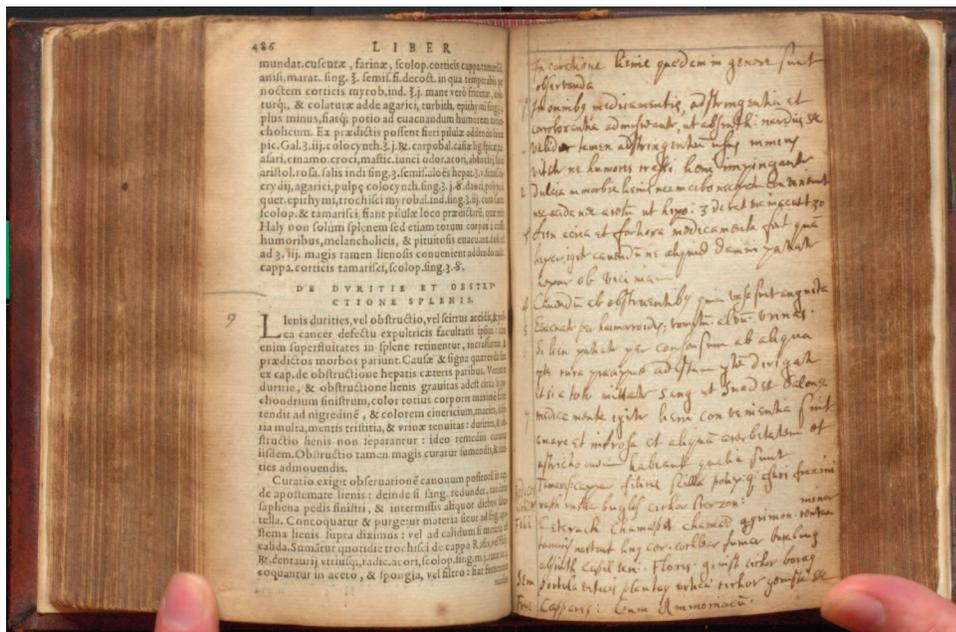


Source: Image courtesy of the Thomas Fisher Rare Book Library.

The Digital Interleaf, the first of two conceptual prototypes discussed here (see Appended Images 1 and 2), follows the logic of the annotated early modern page by offering a flexible space for critical response, but unlike its early modern counterpart, this digital reading environment allows for both individual and social proximate note taking. We imagine it as an Internet-based service that would allow researchers to create, archive, and share layers of handwritten annotations on top of an original text using the Digital Interleaf's multi-layered transparencies. Given the emphasis on handwriting, our initial conception of this service is as a tablet application, taking advantage of the stylus input. This service could be further explored in mobile applications and browser-based applications, pending technological advances in touch interfaces and handwriting recognition.

Our imagined layered platform encourages multiple, archivable readings of the same text; handwritten notes could be placed both on the text and in the margins of the page. As in the case of the codex interleaf (see Figures 4a and 4b), users of the Digital Interleaf would be able to create longer – in this case, typed – notes by widening the tablet's canvas. The combination of typed and handwritten notes could be repeated to meet a variety of individual and social scenarios.

Figures 4a and 4b: Sample spreads from an interleaved book, one with annotations and one without. From Valesco de Tarenta, *Epitome operis perquam utilis morbis curandis Valesci de Taranta in septem congesta libros*, (Guidone, 1560).



Source: Images courtesy of the Thomas Fisher Rare Book Library.

While note-taking habits will vary from person to person, some are more typical than others. For example, many individuals will begin with a lexical reading, one that focuses on unfamiliar terminology and key words. In this case, the annotator glosses the margin with brief summaries and definitions. During a second, more rhetorical reading, the annotator focuses on argument, offering critical commentary on the merits or limits of the points made. The reality is that most readers, if they annotate at all, attempt to do both things at once, and the results are usually not good. One of the

reasons for this kind of annotating stems from the two-dimensionality of the codex page: the singular, flat page invites a single set of notes. This perspective is excusable for users of a codex page, but not for those working in digital environments.

By incorporating transparencies for note taking, the Digital Interleaf invites us to see a *deeper* page, one that is layered much like a palimpsest, and one that, by its very design, insists on multiple kinds of goal-oriented reading. Consider the following scenario. A student annotates a copy of Jerome McGann's (1995) "The Rationale of Hypertext" for a digital humanities course in the fall term. In the spring, our student returns to the text again for a course on editorial theory and produces a second set of notes, one that is more attuned to the course's aims. At the end of the term, as the student prepares to write the final paper, the student consults her annotated copy of McGann which has been conveniently archived as a single, multi-layered file through the app. Years later, when the essay is retrieved again, the student not only retrieves a record of earlier active reading, but also the material traces of how the text was processed.

Consider another scenario: a student annotates the opening chapter to Matthew Kirschenbaum's (2012) *Mechanisms* using the Digital Interleaf on Monday, and then consults and revises those annotations on Wednesday. On Friday, the professor accesses the student's annotated copy, examines the annotations, and makes an assessment of the student's reading practices. The professor then takes samples from different students' notes, all of which are shared through a class-based Digital Interleaf, and then uses them in the next class to discuss, at large, different strategies in note taking. As in the previous example, these active readings are now archived for later consultation and comparison. While the Digital Interleaf is ideal for individual note taking, it is also well suited to larger groups.

Not all potential scenarios need be as pedagogic in spirit. Crucial to all scenarios, however, is that they capture the interpretative act. Students and teachers can easily ignore the critical stage of note taking, treating it as the invisible means that leads to that all-too-familiar end we call the essay. One of the reasons for this stems from a desire to separate research from composition; another derives from the nature of note taking on paper. The clutter associated with cards, notebooks, loose sheets and other traditional media makes gathering and assessing such material difficult. The Digital Interleaf encourages a more systematic, goal-oriented kind of reading, ensuring that summaries, paraphrases, and longer critical commentaries are easily accessible and archived in close proximity to one another. There are benefits to a layered page.

1. Why proximity?

In arguing for the importance of proximity in note taking, the Digital Interleaf follows a series of similar recent initiatives. Digress.it, a plugin for WordPress.com, also allows users to type marginal comments parallel to the text, paragraph by paragraph. The New York Public Library has adopted the plugin for its experimental online version of Voltaire's *Candide*.⁷ Combing through the comments on various paragraphs, we instantly experienced something different from the typical blog: the criticism is more targeted and specific, with sentence descriptors, turns of phrase, and other details carefully dissected. And since all comments are geared toward the same paragraph, the paragraph remains the primary focus; the meta-commentary so common to blogs is

largely absent here. By insisting on proximate response, Digress.it invites closer engagement. The Digital Interleaf does so too.

2. Why handwriting?

The Digital Interleaf's emphasis on handwriting has as much to do with customization as it does cognition, since handwriting requires two kinds of interpretation: as a response to text, it functions as an interpretation of content; but as contoured design, it operates as an interpretation of graphics. This *making* of response by hand brings with it archival advantages, including the ability to capture and store individuated response, and cognitive advantages, including, most significantly, the ability to remember. The ability to create handmade graphics is increasingly common in apps for digital annotation. Users of Goodreader⁸ and iAnnotate,⁹ to take but two of the more popular commercial examples built for tablets, are encouraged to take notes by hand on textual documents, photos, and other media. One can circle items, scribble in the margin, or point to an image with a hand-drawn arrow by using either one's finger or a digital stylus. iAnnotate also allows one to add voice notes, and the annotated documents can be shared through cloud storage.

This is a welcome move, especially since the earliest incarnations of this kind of application often restricted interpretation of graphics by insisting annotators choose exclusively from a series of icons on a toolbar. John Bradley's excellent tool, Pliny, is similarly designed for users interested in long-term note taking. While the proposed Digital Interleaf shares much in common with Bradley's Pliny, it differs in three respects: first, our tool encourages the use of handwritten notes, while Bradley's is largely geared toward typed comments. Second, the Digital Interleaf is designed for both individual and social annotation, while Pliny is largely built for private study. Finally, our tool is imagined as an open online service accessed through a tablet app, while Pliny is standalone desktop software. Despite these differences, the Digital Interleaf has much in common with Pliny and other applications and software designed for annotation.¹⁰

3. Why archiving?

The example of Guillaume Budé's Homer illuminates the importance of archiving marginal notes. As Anthony Grafton explains in his case study, Budé's notes on Homer provide more than material evidence of his reading practices. By the 1520s, Budé had become the leading Hellenist of his day, and the annotations in his Homer begin to shed light on his more extensive studies of classical Greece. Certain annotations in his copy, for example, can be linked to particular passages in his publications (Grafton, 1997, pp. 166–167). In other words, Budé's archived notes open a window to that elusive space that links reading to composition. The Digital Interleaf would aim to capture the same process, but for individual and social annotation.¹¹

The Digital Interleaf is a conceptual prototype that focuses on the front-end user experience of this tool. If this conceptual prototype is made into a tablet app, and we hope it is, much thought will have to be given as to how the back-end system of the Digital Interleaf could archive these layers of annotations. A text and its transparencies could simply be updated and synchronized with each new annotation. Or, a version control system could be built to record each addition and alteration, allowing

researchers to revert to a past state or see the progression of an annotation layer. Finally, the emphasis on handwriting binds the annotations to the text in a distinctly graphical way, challenging the techniques of archiving digital input. We imagine using PDF as a default file format, since it could easily retrain the visual presentation of annotations, while remaining in a commonly accessible format.

If the proposed Digital Interleaf is designed for optimizing how we take notes and how we archive them, in both individual and social scenarios, the Digital Commonplace Book, the second conceptual prototype described here (see Appended Images 3 and 4), offers the ideal space for indexing those notes. While the Digital Interleaf and the Digital Commonplace Book could be used separately, they are best used as an interoperable pair. Before turning briefly to how the Digital Commonplace Book works, we offer an overview of the earlier textual exemplar on which it is based.

Taking notes in the early modern period, even detailed notes, was treated as an important step in an integrated process. As various scholars have shown, early modern readers would typically create heads or topics (e.g., Idleness, Poverty, Factions) in a commonplace book and then index various notes (quotations or paraphrases from their readings) under those heads.¹² The result was that a single topic – on war, for example – might contain excerpts from sources as diverse as Shakespeare, Machiavelli, and Copernicus. Commonplace books were ultimately devised for accumulating and indexing knowledge in highly personalized ways, all with the aim of equipping scholars to meet different academic and social demands.

The Digital Commonplace Book could be defined as the inverse of the Digital Interleaf, as it would allow scholars to excerpt rather than add notes. To excerpt, a reader would first highlight a section of text and then add a manicule to the margin (see Appended Image 3). Next, the reader would tap on the manicule to open the sleeve of the arm, type in a chosen topic, and then send the chosen text to one of his or her commonplace books. Unlike copy and paste, where windows are opened and closed, here the reader remains on the page and continues reading. As with the Digital InterLeaf, the Digital Commonplace Book is imagined for both individual and social study.

Blogs, tweets, and related online entities occupy large parts of our lives, and we send and receive more email than we often wish to admit. While there is no lack of space for digital commentary, the responses we make are often scattered across the Web like broken glass from a mirror. With the proper kinds of searching, one can find many of those pieces, but as they age, the pages linking to them become harder to unearth. Even if we find all the pieces, can we piece together the mirror?

In this article, we have not challenged the arguments in favour of distant reading; it is an incredibly valuable part of the digital experience. Having said that, we have taken as a point of departure the importance of immersing ourselves in, rather than simply skimming, the digital pages we study. We argue that we should be creative in how we respond to what we read, and, most importantly, that we need to build digital spaces that can archive these close encounters.¹³ In turning to the past as a source for future design, humanists must reflect on the principles behind even the most familiar of

communicative acts.¹⁴ The benefits of those reflections are immeasurable; they remind us, again and again, that *how* we read matters.

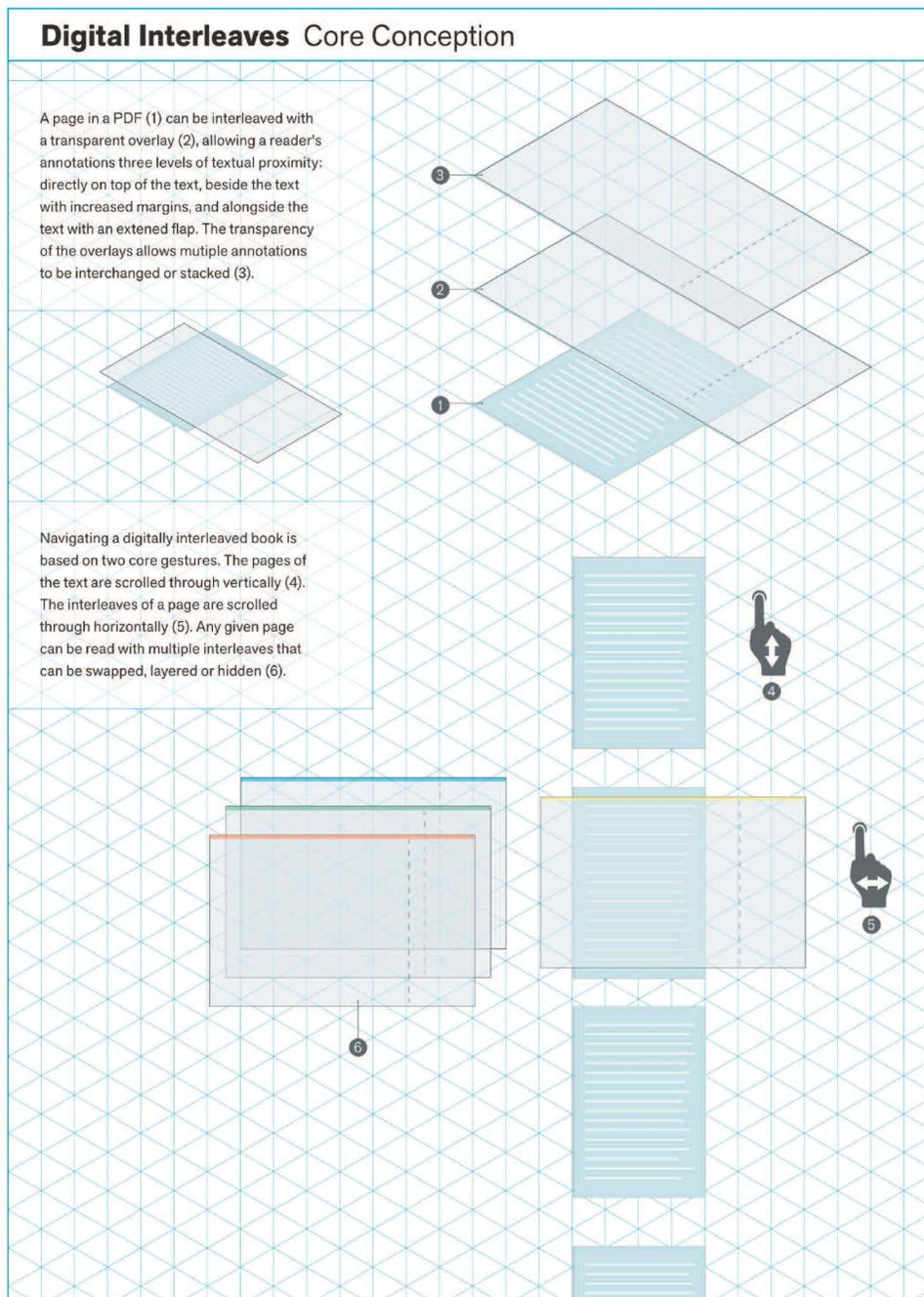
Notes

1. Social media forums, including Facebook and Twitter, not to mention email, contend with the blog as major outlets for online discussion. The blog deserves special focus in this article, however, because it functions as a venue for sustained critical commentary.
2. Budé's copy of Homer's *Opera* (Florence, 1488) is housed at Princeton University Library. Shelfmark: Exl 2681.1488 copy 2. Our account of Budé derives from Anthony Grafton's (1997) chapter "How Guillaume Budé read his Homer," pp. 135–185.
3. Of course, attitudes toward readers writing in their books have changed significantly over time. See H.J. Jackson's *Marginalia* (2001).
4. Montaigne introduced new quotations from his copy of the 1563 Paris edition of Lucretius' *De rerum natura* (*On the nature of things*) in subsequent editions of his *Essais*, as he read and re-read Lucretius over a period of at least twenty years. See Mack, *Reading and Rhetoric* (2010), p. 26. Montaigne's Lucretius, which was acquired by the University of Cambridge in 2008, has recently been digitized. See <http://cudl.lib.cam.ac.uk/view/PR-MONTAIGNE-00001-00004-00004/2> .
5. See Sherman, *John Dee: The politics of reading* (1995). See also Ann Blair's (2010) chapter on note taking in *Too much to know*, pp. 62–116.
6. The classic statement on distant reading is from Morretti, *Graphs, maps and trees* (2005). For a recent discussion of distance reading in the larger context of digital humanities work, see Hayles (2012), "How we think."
7. See <http://digress.it> . For the NYPL experiment, see <http://candide.nypl.org/text> .
8. See <http://www.goodiware.com> .
9. See <http://www.branchfire.com/iannotate> .
10. Details on Pliny are available at <http://pliny.cch.kcl.ac.uk> . For a recent article by Bradley (2012) on the tool and its place within the larger context of digital annotation, see "Towards a Richer Sense of Digital Annotation: Moving Beyond a 'Media' Orientation of the Annotation of Digital Objects," *Digital Humanities Quarterly* 6(2). <http://www.digitalhumanities.org/dhq/vol/6/2/000121/000121.html> .
11. For a similar argument on the scholarly value of archiving annotations, see the impressive work of the Open Annotation Collaboration, <http://www.openannotation.org/index.html> .
12. See Schurink (2010), "Manuscript commonplace books"; Moss (1996), *Printed commonplace books*.

13. And building is, in itself, a form of argument. See Galey and Ruecker (2010), “How a prototype argues.”
14. Both of the prototypes discussed here are inspired by INKE’s commitment to having humanists look to the past for the modelling of digital reading environments. On the importance of principles, see John Unsworth’s (2000) “Scholarly primitives,” and on the importance of the logic (and not merely the graphics) of earlier textual exemplars, see Johanna Drucker’s (2009) *Speclab*, p. 166.

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Preliminary Prototype Digital Interleaves

i. The Bare Text
A single-paged PDF opens up full-scaled and centered on screen



ii. Annotations
A transparent overlay (a digital interleaf) is placed on top of the page, expanding the margin.



and strategies, yet they have often been reproduction—writing or unwriting—assumptions and misleading assumptions.³ Literary criticism, which seems the most return of the reader.¹⁸ This has been part of the formalist assumptions that prevailed through much of the century. In reaction, self-sufficiency of texts (i.e., that author necessary for their interpretation and app developed a theory of “reader-response”—

iii. Second Annotations
Numerous overlays can be created, to capture a second-reading, a different purpose, or various readers.



While their specific contributions range of disciplines, modern the invaluable general contribution to ing received wisdom on the place of the reader's subordination to the reader as more of an equal partner value. They have explored the wa frozen, transparent vehicles for id contexts and to the processes of it

iv. Comparing Leaves
Multiple overlays can be viewed simultaneously, overlapping each other on the page.



always and everywhere the same. We may thi forward process of lifting information from a p be sifted, sorted, and interpreted.¹⁹ It is, para very pervasiveness that has rendered it imper matter of course that, at first glance, it seems say about it.²⁰ Textual scholars and lecturers sional readers—ought to be most sensitive to and strategies, yet they have often been the rd reproduction—writing or unwriting—of ryl tions and misleading assumptions.³ Literary criticism, which seems the most ob

v. Expanded Notes
When the tablet is rotated to a horizontal view, the interleaf's extended flap is revealed for longer notes.



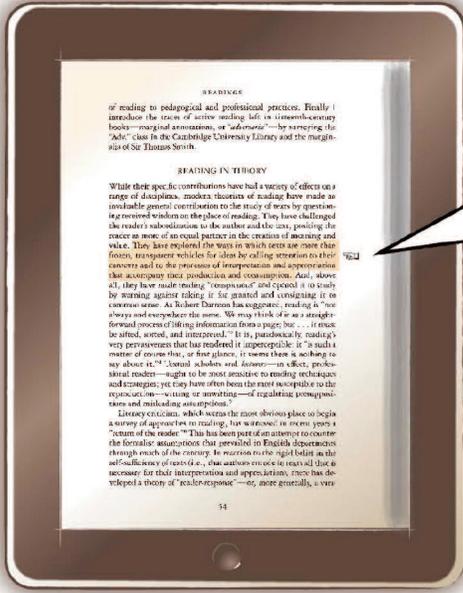
They question ve challenged posing the meaning and are more than tion to their appropriation. And, above ed it to study igning it to eading is “not

vi. Interleaf in Full
The view can be zoomed in (to focus on one's sidenotes) or zoomed out (to refer to the original text and annotations while writing a side note).

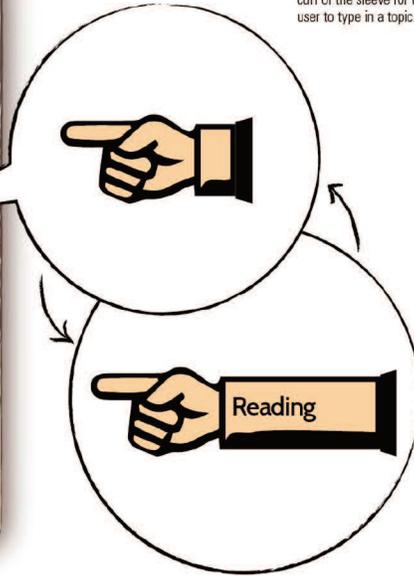


This historical overview of theoretical steadily build into a defense for one f texts (an unsurprising conclusion, giv history field). It is essentially the ty footnotes and Jackson used to stud studies, with sufficient contextual in describes certain reader-text intera when marginalia became personal or social or political roles footnotes tog

DIGITAL INTERLEAF COMMONPLACES



Highlighting a selection of the text allows the user to attach a manicule. Clicking on the manicule reveals the cuff of the sleeve for the user to type in a topic.



Scholarly and Research Communication

VOLUME 4 / ISSUE 3 / 2013

DIGITAL INTERLEAF COMMONPLACES

The selected quotations are gathered in commonplace books, found at the home of the app.

