

The Evolution of Marginalia

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Abstract

For centuries, readers have added marginal commentary to books for a variety of personal and public purposes. Historians have mined the marginalia of important historical figures to observe their sometimes raw, immediate responses to texts. Now, we observe changes in reading and annotation practices with the migration of content to electronic books. This paper advocates for the administration of a reader survey to obtain quantitative data on reader annotation habits and needs to ensure that tomorrow's digital reading devices provide relevant features and support. There is also a need to resolve important outstanding questions about privacy, ownership, and preservation of digital annotations for current and future readers.

Some people write in their books; others view this as desecration. The practice of adding handwritten notes, or marginalia, to books has been going on for centuries. Literary scholars and historians have traced the marginalia of important historical figures to gain additional insights into what they read and thought. However, the advent of electronic books, or e-books, continues to change many aspects of how, when, and why we read, including the act of annotation. This paper focuses on the evolution of marginalia and asks: Will this practice, and its corresponding benefits to the reader and the future historian, die out? Or will it evolve into entirely new annotation capabilities that transcend what can be done in the blank margin of a printed book?

Existing studies of marginalia have almost exclusively addressed only half of the subject, focusing either on print marginalia or on electronic annotations. As yet, few researchers have studied them in conjunction. This paper seeks to establish a visible bridge between these practices and their associated research communities. It highlights the need for either a commitment to continuity of support for marginalia in the electronic setting or a conscious decision to abandon previous modes of annotation in favor of new ones.

In this paper, I begin by briefly reviewing the existing literature on print and electronic annotations. Next, I describe in detail the incidence of, attitudes toward, and motives for print marginalia and cover similar topics for electronic annotations. I then highlight several questions and issues that have not yet been addressed in the literature and what they mean for the future of marginalia. I conclude with recommendations for further study and data collection so that tomorrow's support for digital reading can be informed by today's reader needs and desires.

Literature Review and Gaps

Print marginalia has been studied extensively by researchers of literature, English, and history. The most authoritative study of the subject is that of Jackson (2001). She described the incidence of and motives behind a cornucopia of historical marginalia and illustrated her points with examples selected from 2000 annotated books. The book is strictly and unabashedly anecdotal; no quantitative statistics culled from these books are provided. Many papers and books analyzing the marginalia of famous historical figures have been written. Examples include Jackson's analysis of John Adams's marginalia (2010), Gribben's narrative of Samuel Clemens's marking of Robert Browning's poems (1978), and Ryback's extensive and minute examination of Adolf Hitler's marginal marks (2008).

Electronic annotations have been studied separately by researchers from computer and information science (Marshall & Brush, 2004), analyzed for pedagogical value by those who teach English (Brown, 2007; Porter-O'Donnell, 2004) and composition (Wolfe, 2002), and assessed by librarians as e-book library lending has grown (Braun, 2011; Jantz, 2001; Sheppard, 2009). Marshall and Brush (2004) provided a unique contribution to the field by conducting a methodical study and comparison of print versus electronic annotations in a class setting. They found that students wrote only one-fourth as many electronic annotations as print marginalia, but that the electronic notes were twice as likely to be contentful (versus underlines, highlighting, asterisks, etc.).

There are three important gaps in the existing literature. First, there is a curious lack of connection between studies of print and electronic marginalia. Marshall and Brush excepted, scholars that study one seem unconcerned about the other, despite the seemingly obvious fact that they are driven by the same reader habits and motivations. Given that electronic reading and annotation habits are evolving, tomorrow's professors of literature and history may find themselves lacking marginalia-inspired insights into today's important figures. Second, there has been very little discussion of privacy and preservation issues associated with marginalia. Who merits access to writings that may or may not ever have been intended for another's eyes? How can, or should, both print and electronic annotations be preserved? Third, there is a distinct lack of quantitative studies of the frequency and types of reader annotations. Marshall and Brush are again the exception, yet their study was limited to 11 students in one course. We simply don't know what the reader-wide population's views, desires, and needs are with respect to annotation. To design electronic reading devices that fully support author, reader, and researcher needs, we require quantitative data on how marginalia is created now.

Marginalia in Printed Books

Marginalia is a term that was coined in 1832 by Samuel Taylor Coleridge (Jackson, 2001), although the practice predates the printed book, extending back to include commentary by bored monks in the scriptorium. The term most generally encompasses all reader modifications, including marginal notes, underlining, highlighting, and dog-earing (Basbanes, 2005; Jackson, 2001). Coleridge, an acknowledged master of the marginal art form, was a copious annotator whose friends would loan him books with the specific wish that he would enrich them with his opinions (Jackson, 2001). Jackson helped compile "8,000 of Coleridge's notes from 450 titles (700 volumes) by 325 authors" (p. 150).

Marginalia provide a uniquely intimate glimpse into the reader's mind in the process of reacting to a text. There is something very personal about seeing someone else's words in their own handwriting. "Turning the pages of the books that [John] Adams marked, we feel that we are reading over his shoulder, sharing an experience with him" (Jackson, 2010, p. 15).

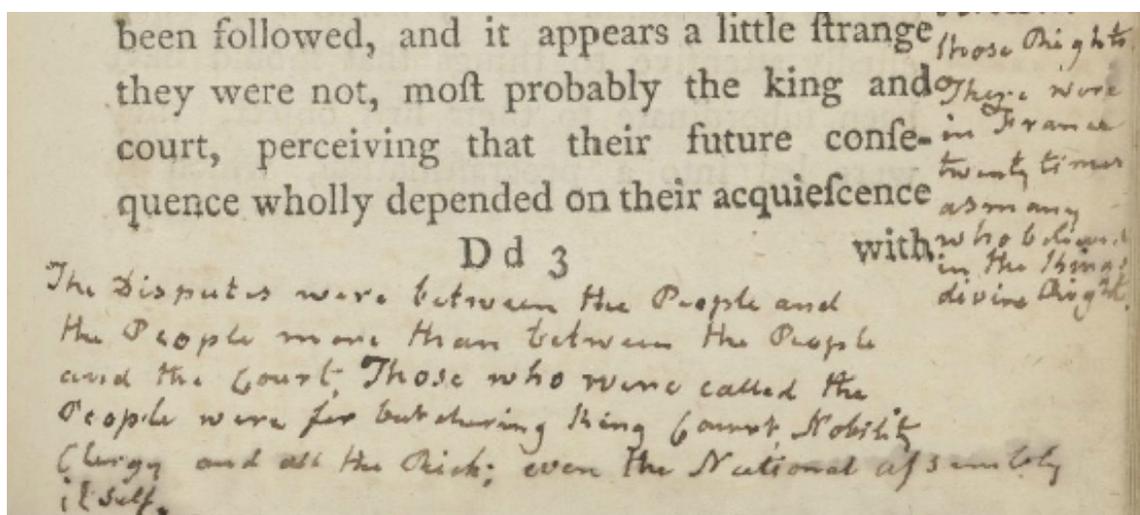


Figure 1. Marginalia inscribed by John Adams on page 405 of Mary Wollstonecraft's *An historical and moral view of the origin and progress of the French Revolution: and the effect it has produced in Europe* (Adams, n.d.).

The belief that marginalia provide access to the reader's inner life appears even in fiction, as when a visitor of Dr. Jekyll's discovers blasphemous marginalia penned by his Hyde-controlled hand (Jackson, 2001, p. 87).

Fascinating examples of historical marginalia abound. Figure 1 shows an example of John Adams's annotations of Mary Wollstonecraft's book *An historical and moral view of the origin and progress of the French Revolution*. This was the most heavily annotated book in his library, which was digitized by the Boston Public Library for anyone to peruse. Figure 2 presents annotations by Sir Isaac Newton on a copy of his own book on optics, likewise made available by the Open Library. Pierre de Fermat famously claimed in a marginal note that he had the proof for an important arithmetic claim, but that the margin was too small for him to share it (Jackson, 2001). In this section, I describe what kinds of marginalia people have written, why they wrote it, and how others have benefited.

Manifestations of and Motives for Marginalia

Prior to the advent of e-books, the shape, format, and kinds of of marginalia were fundamentally tied to the physical format of books and their margins (Jackson, 2001). Inside covers and flyleaves accumulated autographs from the author, inscriptions from a friend, and owners' names. Front and endpapers were used by many to record a personal summary of the book's contents or an index to pages with personally relevant content. Within the body of the book, readers used highlighting and underlining to mark important words, phrases, sentences, and excerpts. Finally, the book's margins acquired a range of marks, lines, scribbles, definitions, and commentary; crucially, these were all confined to a limited space. As a result, abbreviations were common and terse expression was prized. Some readers, especially students, subverted the cramped marginal space doled out by publishers and instead bound their own copies of books with a blank page inserted between each original page. These "interleaved" copies provided ample room for commentary. Some books were even deliberately interleaved by the author in hopes of encouraging reader feedback or corrections.

Historically, why have people written in their books? Jackson listed several motives.

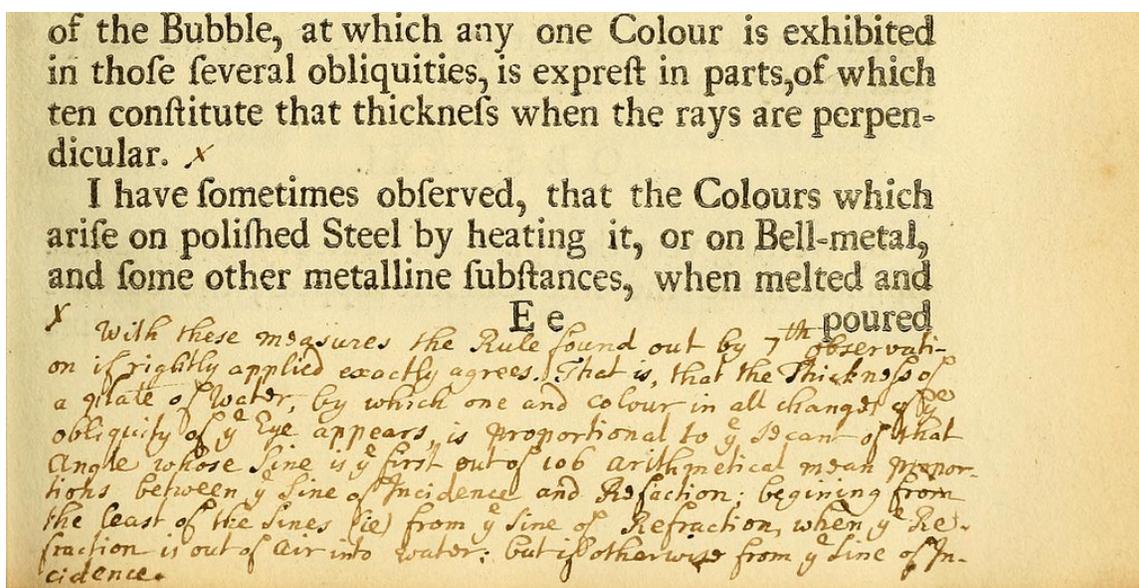


Figure 2. Marginalia attributed to Sir Isaac Newton on page 25 of book 2 of his book *Opticks: or, A treatise of the reflexions, refractions, inflexions and colours of light* (Newton, n.d.).

First, she stated that “ownership marks are far and away the commonest form of annotation” (p. 19), although she provided no quantitative data to support this claim. In addition to recording their name and perhaps the date of acquisition or when the book was read, some owners have added anathemas, or “book curses,” to warn others not to damage or steal their books. Drogin (1983) compiled an extensive collection of medieval book curses and laid out the historical context for their use: in medieval times, books were rare in ways we cannot begin to imagine today. Simply producing a copy of an existing book took months or years of manual labor, and a typical library consisted of five to ten volumes. The loss of any single book was a devastating blow. Threatening potential book thieves with death, damnation, or excommunication arose from quite serious concerns, not frivolous amusement. One of Drogin’s examples, from a scribe in the year 1172, stated: “If anyone take away this book, let him die the death; let him be fried in a pan; let the falling sickness and fever seize him; let him be broken on the wheel, and hanged. Amen” (p. 88).

Second, there is a long-recognized pedagogical benefit for students, or anyone seeking to learn from a text, from marking or commenting while reading. The process forces the reader to slow down and encourages “independence” from the author’s voice (Jackson, 2001, p. 87). Porter-O’Donnell (2004), a high school teacher, noted that student readers use marginalia to “make predictions, ask questions, state opinions, analyze author’s craft, make connections, and reflect on the content or their reading process” (p. 82).

Third, there are several motives that arise from social or emotional concerns. Readers in the 19th and early 20th centuries commonly filled a favorite book with marginal comments before gifting it to a friend because, Jackson (2001) noted, “reading was more often than not a *social* activity” (p. 65). These comments often alternated between objective commentary on the book and personal comments directed at the recipient. Coleridge even marked up multiple copies of the same book in different ways (e.g., personal use, critical commentary, and editing for publication). Sometimes the recipient would augment the book with additional comments and then return it to the original owner. This kind of shared, social reading seems to have faded out in the 20th century. However, I will discuss later how similar behaviors are beginning to

manifest with e-books. Marginalia has also been used for revenge or as “a cheap and convenient form of therapy” (p. 92).

Marginal commentary may be directed at the author, the reader for future reference, a friend, an unknown future descendant or historian, or all of the above. Samuel Clemens implicitly addressed marginalia to the author of a translation of Tacitus as well as any future reader when he wrote “This book’s English is the rottenest that was ever puked upon paper” (Jackson, 2001, p. 91), but he also used marginalia for personal reasons, to mark up favorite poems by Robert Browning for reading them aloud to an audience (Gribben, 1978). John Adams’s marginalia evolved over time from simple notes for personal benefit to critical, responsive arguments composed with deliberate consciousness of later readers (Jackson, 2010).

Considered as an art form, can we rate and compare the quality of different marginalia? Jackson (2001) proposed criteria that include intelligibility, relevance, honesty, certification (sources credited, names signed), fit with the author’s style, economy, wit, independent voice, spontaneity, passionate expression, and “signs of mental life” (p. 210). Effectively, she views it as a sub-genre of literature. Not everyone agrees.

Attitudes toward Marginalia

Current attitudes towards the practice of marking books in one’s personal library range from the very negative to the very positive. Jackson observed that “in Western society today there is a strong prejudice against writing in books,” but “we make an exception for notes written by famous people, which have association value and hence inspire awe in the exhibition hall, besides attracting large sums in the salerooms” (2010, p. 59). Certainly, not all marginalia are equally informative or worth preserving, just as not all books have equal value. Yet if the value of marginalia emerges only decades or centuries after the author lived, the preservation decision may come too late to be of use.

Researchers have, indeed, mined unique insights about historical figures from their marginalia; some of these examples have already been discussed. Likewise, Coffman, Jr. (1986) traced Coleridge’s reading history through his copious annotations, discovering his propensity for marking up even library books, signed with his initials. Ryback (2008) conducted a thorough examination of books from Adolf Hitler’s private library. Hitler’s marginalia consisted almost exclusively of underlining, marginal bars, and the occasional question or exclamation mark; marginal comments were rare. Yet Ryback was able to weave this sparse evidence of what Hitler read and found worthy of marking into a historical narrative of Hitler’s development as a reader and thinker. Passages Hitler marked while reading resonate in his own later writing for speeches, essays, and books.

Mortimer Adler advocated the practice of marginalia for its benefits to the annotator, regardless of later fame, and dismissed those who argue for the maintenance of pristine pages. “Confusion about what it means to ‘own’ a book leads people to a false reverence for paper, binding, and type—a respect for the physical thing—the craft of the printer rather than the genius of the author” (1941, p. 11). This critical insight about the separation between the message and its medium can extend to position marginalia as a third independent component of any particular copy of a book.

One demographic that has consistently objected to the practice of (modern) readers annotating books is that of the librarian. However, these books are not owned by the reader and so the practice is quite different than that of writing in one’s personal book collection. Librarians simultaneously face the challenge of cataloguing books that arrive with pre-existing marginalia, some of which may increase the book’s value or interest. In a survey of 35 members

of the Association of Research Libraries, Nicholson (2010) found that 91% had a process for indicating the presence of marginalia in a given book, but they lacked a field-wide consistent process for doing so. Jackson presented a different view of *public* libraries that is plausible, although unsupported by data:

Public libraries understandably prohibit the writing of notes in books. It would seem counterproductive to make a rule and then to celebrate the breaking of it, so, by and large, libraries do not encourage annotators by drawing attention to the manuscript annotations in their collections. (Jackson, 2001, pp. 8–9)

High school teachers have experimented with annotation assignments as a way to inspire active reading in their students. Porter-O'Donnell (2004) described how to train students to effectively mark texts while reading and reported students' reflections on the benefits of this practice. Brown (2007) instructed students to first brainstorm marginal comments directly in the text, then revise and formalize them into a set of footnotes using complete sentences and correct grammar. These annotations are a combination of objective notes modeled after the explanatory notes provided by publishers or editors, mixed with personal commentary by the student reader showing how they connected the book's content to their own lives. Writing in 2007, Brown speculated about how students might instead use hyperlinked webpages to associate their annotations with the (duplicated) text. When considering marginalia created by today's readers, we naturally transition into a discussion of e-books and their support for annotation.

Annotations in Electronic Books

In electronic works, reader modifications are generally referred to as “annotations” rather than “marginalia” because there is no “margin” in which to write. The terminology change may also be due to the scholarly connotations of the term marginalia, since today's digital annotators are too recent to have attracted the eye of historical scholars. Annotation features for e-books are not standardized, but they commonly include the ability to highlight text, insert bookmarks, and add location-specific comments. Electronic annotations, unlike print marginalia, can be automatically time-stamped, easily searched, aggregated, filtered, copied, pasted, and shared (Wolfe, 2002). They can even be used as input for automated meta-data extraction such as keyword and abstract generation. Amazon's Kindle stores all reader annotations on its servers and displays within a book the number of people who've highlighted certain passages (Alter, 2012).

The visual format of these annotations is still in flux. Pearson, Buchanan, Thimbleby, and Jones (2012) developed the Digital Reading Desk in response to complaints about the relative difficulty of annotating electronic texts. This desktop software is a PDF viewer that allows users to add “Post-its” by dragging them from an inexhaustible virtual stack, instead of navigating a menu to insert a comment. These annotations can include text or serve simply as colored bookmarks to indicate pages of interest. In a user study, Pearson et al. found that readers were three times as likely to use these virtual Post-its as they were to use annotations in a traditional PDF viewer. Notably, Pearson et al.'s metaphor for annotation is an impermanent, easily erased one; notes are not written on the “page,” but instead on a removable, relocatable Post-it. They did not report how frequently readers erased or moved their Post-its, so it is not clear how important these features are, but they do seem more flexible than inking a comment into the physical margin of a book.

Similarly, Liesaputra and Witten (2012) created the Realistic Books software for digital reading that employs features of physical books such as animated page turning, visual location cues, bookmarks, and annotations to improve the user experience. In a user study, they found that “many users preferred Realistic Books over physical ones because they could move, edit and search the annotations” but that “40% preferred physical books because they are more familiar and feel more comfortable—particularly with regard to the fluidity of scribbling” (p. 606). Given these conflicting anecdotal preferences and opinions, it is useful to ask more specifically how the electronic format affects annotation and what reader attitudes are.

Changes in Reading and Annotation Habits

Studies have found that the process of reading is different for electronic and print books. People “use rather than read” electronic books; that is, they search or skim for discrete bits of information rather than reading the book in a linear fashion (Staiger, 2012). Evidence suggests that annotation habits also differ. Marshall and Brush (2004) instructed 11 students to first read and annotate a print copy and then add their comments to an electronic version visible to the entire class. They found that students wrote only one-fourth as many electronic annotations as print marginalia (379 versus 1535). Reasons for the reduced volume could include (a) real or perceived additional effort needed to add electronic annotations, (b) comfort sharing in personal versus public venues, or (c) instinctive quality-control filtering of first-blush print marginalia for sharing in the online forum. Marshall and Brush also found that the electronic notes were twice as likely to contain semantic content (in contrast to underlines, highlighting, asterisks, etc.) and that they were more likely to employ complete sentences and correct grammar.

Indeed, the act of typing a comment seems somehow different from scribbling in a margin, and the experience of reading an electronic comment is different from reading a handwritten one. Some of the intimacy and personality is lost. Yet as we will see in the next section, electronic books pave the way for entirely new modes of annotation and functions one can perform upon them.

Attitudes toward Electronic Annotations

The electronic format of e-books encourages us to reconsider our attitudes towards marginalia. While marking in a book that was borrowed (from a friend or a library) is generally frowned upon, should that same attitude apply to annotating an e-book, which is non-destructive and easily reversed?

While the pedagogical benefits of annotations, in print or electronic form, are widely acknowledged, negative librarian attitudes towards marking in books appear to persist for electronic books (Sheppard, 2009). E-book readers loaned out by libraries provide readers with the ability to highlight and annotate books that they have checked out. Sheppard complained that “marking texts has the potential to be the bane of circulation personnel” because they must “re-set the book to pristine condition” when it is returned (p. 7). She further recommended levying fines or training patrons to remove their own marks. These policies were asserted without any discussion about whether existing attitudes about print marginalia necessarily apply in the electronic setting.

Electronic annotations are viewed somewhat more positively in academic libraries. Jantz (2001) assumed that student annotations of textbooks and other course materials are essential for learning, while likewise noting a need to erase such annotations when the e-book is returned. “The student . . . should be able to annotate and selectively print [electronic materials]” (p. 107). He also praised e-books for their support of “damage-free annotation” (p. 107). Other

educators have noted that electronic annotations allow the instructor to provide unique benefits to students, such as creating a custom version of the e-book with the instructor's highlights, comments, quiz questions, reading guides, summaries, and specialized dictionaries (Cavanaugh, 2002).

The Future of Marginalia

In 2001, Jackson lamented that "writing in books is on the wane and we are at risk of losing both the art and the artifacts" (p. 259). She recommended that more scholars hunt down marginalia, that cataloguing be improved, and that readers continue to put pen to page. Yet she has shown no cognizance of nor interest in marginalia's electronic sibling, either in 2001 or in later publications and interviews.

The continued expansion of the e-book market cannot be ignored, constituting \$282 million in sales compared to \$230 million for adult hardcover books in just the first quarter of 2012 (Alter, 2012). While e-books may never entirely replace printed books, their creation, publication, and consumption are likely to continue increasing. What role will reader annotations play? While e-book annotation features may superficially appear similar to the means of annotating print books, issues of privacy, ownership, and preservation must be discussed lest they end up decided for us. First, I examine some of today's cutting-edge manifestations in the evolution of marginalia, then address these important associated issues.

New Capabilities: Social Reading

As noted earlier, social interaction was historically a strong motive for print marginalia. Friends exchanged books annotated with the recipient in mind. Today, "social reading" is being rediscovered and reconceived as a hybrid offspring of e-books and social media. Unlike the sharing of annotated print books, social marginalia are mediated by the Internet (Braun, 2011).

Internet users today are already very comfortable with commenting on blog posts or news articles; in fact, they expect to be given the space to do so. The very prevalence of the "comment" feature may itself indicate how the desire to annotate and respond has followed us into e-space. CommentPress offers a step up in comment interactivity. It is a plugin for the popular WordPress blogging engine that "allows readers to comment paragraph by paragraph in the margins of a text . . . turning a document into a conversation" (CommentPress, 2012). Unlike most online comment structures, which position reader comments in a block at the bottom of the page, CommentPress places them in a scrolling sidebar that aligns with the original text currently being viewed. Readers can interact directly without having to quote or link to the portion of text under comment. Figure 3 shows an example of CommentPress in action.

The next step in this progression is to enable interaction for the traditionally solitary act of reading an entire book. Subtext is an iPad application designed to support collaborative reading groups (e.g., classrooms, book clubs). Their promotional text says, "Our Book Blog feature prompts students to add a rating and comment at the end of each chapter" (Subtext Media, 2012). Readers can add highlights, marginal comments, and even marginal emoticons. Everyone in the group sees the rest of the group's activity, which is marked with profile icons in the margin. Readers can browse a book timeline that shows what page every other reader has reached. BookGlutton expands the available social circle by allowing readers to "create virtual reading groups inside web-based books" (BookGlutton, 2012). Account holders are invited to

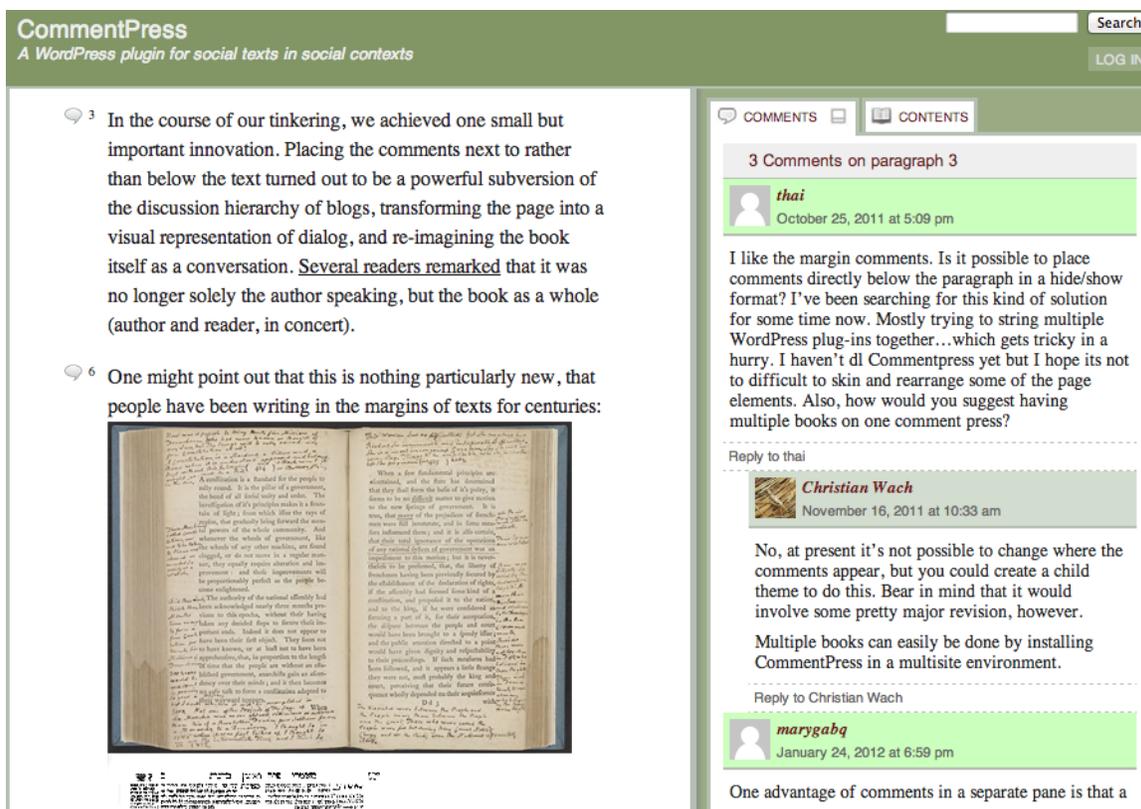


Figure 3. A screen shot of CommentPress in action (CommentPress, 2012). Comments can be associated with individual paragraphs and appear in the right margin alongside the text, instead of being relegated to a comment region at the end of the full document.

comment inside the book and receive notifications when others in the group respond. Distracted by activity and alerts, might readers find it difficult to carve out time for reading?

The creators of Findings (Borthwick et al., 2012) have taken the electronic annotation concept to its logical extreme. Their scope includes not just books or blog posts or news articles but, in fact, the entire Internet. Users can “clip” quotes from inside their web browsers, optionally annotate them with a comment, and then share them with friends in their social networks. Clips are automatically linked to their original sources, so the full context is only one click away. Findings is the modern equivalent of the “commonplace book,” which historically was a personal collection of quotes a reader copied down for later reference, separate from the books in which they originated. John Locke published a book on his own method for how to create, maintain, and index a commonplace book for maximum utility (Jackson, 2001). Today we are reinventing the same ideas, in a digital format, because they serve the same basic human desires.

The digital format of e-books and the connectivity of the Internet promise that innovation in new reading and annotation capabilities will continue. These same attributes raise important concerns about reader privacy, which I discuss next.

Privacy

The question of the importance and extent of reader privacy has gained a lot of attention with the growth of e-books, but it pertains also to printed marginalia. Scholars of marginalia

have studied and shared reader commentary of the most personal nature, sometimes simultaneously noting that the reader clearly intended it to be private. One example is T.H. White's marginalia in a copy of Carl Jung's *Essays on Psychology*, as reported by Jackson (2001). White filled one of the end-leaf papers with a free-association exercise that explores his conflicted sexuality and "unresolved Oedipal complex" (p. 142) and which Jackson repeated in full and then dissected, quite unabashedly. More generally, Jackson argued that marginalia were intentionally composed by self-conscious writers aware that their books, and any annotations, were likely to persist even after their owners' departures. While it is patently true that anything written into a book's margin becomes theoretically public unless later erased, it is not at all clear that all writers of marginalia intended their posthumous exposure. Adler (1941), a strong proponent of marking one's books, also considered those markings quite personal: "You won't want to lend [those books] because a marked copy is kind of an intellectual diary, and lending it is almost like giving your mind away" (p. 12).

Most e-book reading devices collect information about their readers' demographics and reading activity (Alter, 2012). However, this information has traditionally been deemed strictly private by librarians. Article III of the ALA Code of Ethics states that "we protect each library user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired or transmitted" (American Library Association, 2008). In 2011, California passed the Reader Privacy Act (2011) which prohibits commercial "book service" providers from disclosing personal user information and reading activity records unless a court order is procured. Reader annotations constitute a part of these user records.

Some e-readers such as Copia and Inking let users control the visibility of their electronic annotations (Braun, 2011), but there is no industry-wide consensus about how much privacy and control users should have. Concerned readers have developed statements such as the Readers' Bill of Rights for Digital Books (Sellie & Goins, n.d.) which asserts an even stricter requirement that "reader information will remain private (what, when and how we read will not be stored, sold or marketed)" (item 5). I am not aware of any e-book sellers who have agreed to this Bill of Rights. More generally, reader privacy will likely only be preserved to the extent that consumers, or the law, demand it.

Ownership and Preservation

Other important questions raised by the transition to e-books center around preservation. Printed marginalia, once inscribed, remain in the book unless erased, but electronic annotations require an ongoing commitment to storage and accessibility. Just as there are no consistent standards about the privacy of electronic annotations, likewise there are no standards for where, by what method, and for how long electronic annotations will persist. Should they be stored on the e-reading device, or on the service provider's server? When electronic formats change, is there an obligation to convert existing annotations to be compatible, and if so, whose responsibility is it? These concerns also intersect with the privacy issues discussed earlier.

Open Bookmarks is a project aimed at addressing these issues. The project's website provides a Checklist that focuses on making social reading "easy, personal, and open" where "personal" means "the reading experience belongs to the reader and nobody else" (i.e., private) and "open" means that "bookmarks must be shareable, saveable and persistent" (Bridle, 2012, left sidebar). The goal is to raise awareness of these issues with readers, publishers, and developers so that e-books will provide as many features offered by physical books as possible, plus more.

Further, it is not clear what should happen to electronic annotations when the reader who

wrote them passes away. Inheritance rights associated with e-books have not yet been tested in the courts. Since the current e-book purchase model is more like a lease with an undefined end date than an acquisition, it is not clear that anything associated with that purchase propagates to one's heirs. Similarly, it would currently be difficult for heirs to donate a deceased person's e-book collection, and their marginalia, to a library as they might with a physical collection. Effectively, purchasing an e-book is treated more like paying for a service than for a good. Under this model, any annotations generated in the process of reading the book are part of the service and therefore only available to the person currently enjoying the service. This interpretation is strikingly at odds with the physical book model, and further discussion is needed to reach consensus.

Recommendations

Given the preceding tour of historical marginalia, the first examples of its evolution in the digital era, and some of the associated unresolved questions, I have two major recommendations for future research.

First, we should conduct a statistical survey of today's reader attitudes and practices with respect to annotations, both print and electronic. Anecdotal examples of readers writing in books abound, but we have no data about how common this practice is nor how valuable it may be to readers. This information can guide efforts for supporting digital annotations (if it is common and highly valued) or devoting development efforts to other features (if it is not). There is an open question about whether and how the e-book format will change how we read and annotate. Early evidence suggests that current technology reshapes those practices (Marshall & Brush, 2004; Wolfe, 2002) and that making an e-reading experience more like reading a physical book increases annotation activity (Liesaputra & Witten, 2012; Pearson et al., 2012). However, unless we obtain broad statistics on user activities now, while physical books are still common, we may never be able to characterize the amount of change quantitatively.

The marginalia survey would begin with demographic questions, including age, gender, ethnicity, education level, as well as profession and level of reading activity, to facilitate later analysis of the responses. The body of the survey would focus on characterizing reader attitudes towards marginalia (e.g., In your view, does it have any value? To whom?) and actual reader practices (e.g., frequency of annotations, type of reading that inspires annotations), in both print and electronic books. For readers who annotate their books, the survey will probe to find out what their motivations are. For readers who do not, the survey will instead seek to find out why not; are barriers philosophical, ethical, aesthetic, or technical? Identifying any differences in practice between print and electronic books will be of particular interest. Further, the same survey can be conducted periodically to track any changes in reader habits and attitudes over time.

Second, we as readers and information science professionals should actively participate in discussions about e-book features and issues such as privacy and preservation. Our input can help identify answers before the formats and features are solidified, lest capabilities of value be unsupported or lost. We can also encourage readers we encounter to voice their opinions and influence the process.

Conclusions

This paper began by asking whether the practice of annotating books would die out or whether it might evolve into entirely new capabilities on an electronic platform. Marginalia has provided a panoply of benefits for readers, recipients of inscribed books, and later students and

historians. The advent of e-books has raised many questions about how reading and annotation habits may change, and it has inspired several innovative advances such as new social reading capabilities.

To identify which features are important to readers, statistical survey data should be collected on reader attitudes and practices, both in print and in e-books. This survey would constitute the first study of marginalia that goes beyond anecdotal evidence to determine how readers use marginalia, how often, and whether the electronic format will influence their practices. If, as seems likely, electronic books will support or encourage or dictate a change in reader marginalia, this survey data can help it happen in a conscious fashion, influenced directly by actual reader desires and needs.

Finally, we would do well to pay attention and voice concerns about support for important features and to help figure out issues like privacy, ownership, and preservation. Today, the array of features offered by electronic readers or apps is driven by economic concerns. Device and software providers may employ market research, focus groups, or other methods to assess what will sell. Readers should be made aware of these issues so their views can influence the outcome. Likewise, academic researchers may wish to weigh in to enable future researchers to mine the digital activities of today's readers. This paper seeks to alert both communities to the need for their participation.

I close with a quote that sums up the overall message of this paper:

Among all the gifts of the electronic age, one of the most paradoxical might be to illuminate something we are beginning to trade away: the particular history, visible and invisible, that can be passed down through the vessel of an old book, inscribed by the hands and the minds of readers who are gone. (Katz, 2012, para. 15)

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