

Tully Barnett
Flinders University

Abstract

As a reading environment, the screen offers diverse experiences. Reading documents on screen both preserves the markers of textuality and radically changes them. While at first electronic forms of books unbound the book by removing material accoutrements and metaphorical paraphernalia, more recently e-book platforms have adopted the imagery of the material book. This, coupled with the new possibilities for social reading in an online environment, prompts a rethink about reading. Often seen as a private act, reading has changed as a result the social web. However, a successful and enduring mobile framework to combine, rival or extend the functions offered by these early examples has so far proved elusive to design, implement and/or monetize. This emphasizes not only the enduring power of print but also the connections readers tend to have with the markers of the material on and beyond the page.

Keywords:

Reading apps; Ebooks; Text digitization

Tully Barnett is a Research Fellow in the School of Humanities and Creative Arts at Flinders University, South Australia. Email: tully.barnett@flinders.edu.au .

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Discussions of the social life of books frequently point to the role the private bookshelf plays in identity negotiations (i.e., that the kinds of books we keep on the shelf make a statement about who we are) and to the circulation of texts and literary opinion within various kinds of communities with taste-making and social capital functions (Bhabha, 1995; Manguel, 1996; Price, 2011). Technologies of textual dissemination and reception in the digital age open up possibilities for social reading in new ways. The term “social reading” has developed significant online presence in the last few years, as every aspect of our lives takes on some kind of social dimension through Web 2.0 and its subsequent practices. Reading, often seen as a private act, has become inflected by the social Web, and reading habits and associations are changing as a result, through tools such as Goodreads and services such as Facebook, which urge users to nominate their favourite books, music, movies, and television shows and then display them visibly on their profiles as markers of identity. Social reading allows online friends, acquaintances, and strangers to co-inhabit a book with the reader and can co-construct a reading with more layers and nuances than was available for the printed book.

Amazon Kindle’s social highlighting function is one enduring platform for social reading, and there is a range of new and altered reading behaviours occurring in that platform (Barnett, 2014). Attention has also been paid to Goodreads as a platform that offers some functions for sharing responses to texts within a social network (Nakamura, 2013). However, a successful and enduring mobile framework to combine, rival, or extend the functions offered by these early examples has so far proved elusive to design, implement, and/or monetize. There have been some significant attempts to do so. Readmill was touted as an example of an elegant and flexible reading platform built on a foundation of social reading, offering partnerships with e-book retailers so that users could import purchased e-books directly into the social reading framework. Its increasing popularity and clever solutions for social networking and online annotating saw it snapped up by Dropbox in March 2014. Readmill closed its doors a few months later with the statement that the service had “failed to create a sustainable platform for reading” (Readmill, 2013). Meanwhile, several recent patents by Microsoft and Google indicate an attempt to create augmented reading environments that emphasize embodiment, location, and co-location (Chen, 2014; Peevers, Tang, Gok, Venolia, Quinn, Khanna, Longbottom, & Thywissen, 2013). However, these platforms for reading are operating in an environment dominated by established e-readers such as the Kindle, Kobo, or Sony eReader; in a space where Google Books has colonized so much of the conceptual framework for digitizing projects and at great documented cost, creating a sense of unease about the legal and moral legitimacy of digitizing projects and the degree of connection between the missions of readers, corporations such as Google, and libraries and archives.

Considering the commercial and innovative reading environments emerging and/or failing and the behaviours at work within them opens up questions about the future of reading in a moment where reading and its attendant qualities of attention span and critical thinking are said to be in decline or in danger (Bauerlein 2008; Birkerts 2006). That is, concerns about the demise of the book became concerns about the demise of the reading of long-form text in an age of distraction. New tools and spaces for digital reading – among which are Google’s book scanning program, Amazon Kindle’s social

highlighting function, the Goodreads website, online reading platforms, and literature-based apps – offer ways of thinking about the place of the book and its reception and use, circulation and affordances in the digital era. Experiments at building social networking into the unbound book both reveal reading behaviours and complicate reception, even as they promote the reading of long-form fiction as a practice relevant to and valued in digital environments. The human traces of marginalia, underlining, and institutional records in books and the scan errors that appear in Google Books affect how we read and relate to the texts contained in the digital database. Similarly, the faint underlines on the Kindle screen indicating the presence of other readers inside the text affect how we relate to it, and ultimately, how we read and understand the text. Looking at the traces of the reading experience left in the versions of texts in Google Books scans (as opposed to “born digital” texts), in the Kindle social highlighting records, and in other reading platforms provides a means of examining what happens to the literary archive as it is incorporated into these new frames. These and a plethora of other Web and mobile apps, sites and tools have, I contend, rebound the book, adding in non-textual and para-textual elements that approximate the experience of reading a material book as closely as possible while capitalizing on social media tools and trends to develop a social framework for reading on and offline. This article considers key moments in the book’s initial unbinding from the material in the formation of immaterial electronic books and its subsequent metaphorical re-binding as e-book platforms increasingly take on the imagery of the material book in the delivery of reading platforms in digital spaces. It considers the key reading platforms in play; the gradual re-incorporation of signifiers of material reading and social dimensions within those platforms; and the various motivating factors informing reading platforms including aesthetic, functional, and commercial factors.

Increasingly industry professionals and scholars are talking about “books,” “texts,” “written,” and even “print” in ways that emphasize these words’ lack of stability. They refer to the physical bound book printed on paper, but print and even ink have digital equivalents and the words are beginning to be used interchangeably. This is complicated further when laptop computers become books (e.g., powerbook, ultrabook) (Kirschenbaum, 2008) and readers become devices (e.g., Kindle, Sony e-reader, Kobo) or RSS feed services (e.g., the short-lived Google Reader). Some commentators, however, conceive of e-books as something other than books in the traditional sense. This is more common among those who have a long-held view that reading is at risk in a digital environment. Sven Birkerts (2009), for example, has argued that:

I see in the turning of literal pages—pages bound in literal books—a compelling larger value, and perceive in the move away from the book a move away from a certain kind of cultural understanding ... these structures evolved over centuries in ways that map our collective endeavor to understand and express our world. The book is part of a system. And that system stands for the labor and taxonomy of human understanding, and to touch a book is to touch that system, however lightly.

The electronic book, on the other hand, represents—and furthers—a circuitry of instant access, which giveth (information) as it taketh away (the great clarifying context, the order).

But Birkerts, with his history of cantankerous concern over the fate of the book, is not alone in insisting on the separation of the book from the e-book. Matthew Kirschenbaum (2008) argues that “books on the screen are not books; they are models of books” (n.p.). Similarly, Naomi Baron (2013) asks whether “our growing dependence on reading on screen contribute[s] to a redefinition of what it means to read” (p. 193).

The immateriality of electronic reading has been the focus of thinking through the ramifications of digital culture in its early years. It serves to conceptualize the ideas and content of a text (the soul) released from the material constraint (the body) of a book. In 1990, Mark Poster argued that

[c]ompared to the pen, the typewriter or the printing press, the computer dematerializes the written trace. As inputs are made to the computer through the keyboard, pixels of phosphor are illuminated on the screen, pixels that are formed into letters. Since these letters are no more than representations of ASCII codes contained in Random Access Memory, they are alterable practically at the speed of light. The writer encounters his or her words in a form that is evanescent, instantly transformable, in short, immaterial. By comparison, the inertial trace of ink scratched by hand or pounded by typewriter keys on to a page is difficult to change or erase. (p. 111)

Poster’s view – published prior to the rise of the World Wide Web – of the immateriality of electronic text and what happens to the concept of writing when digital tools are added to a long tradition, is typical of the early days of the Web, when the equation of the material text with the material body and the digitization of both into the information substrate was celebrated by some and decried by others (Hayles, 1999). However, much of this specifically relates to the process of writing and much less attention has been paid to the immateriality of reading. More recently, Alan Galey (2012) has argued that

[a]s textual scholars, we have the rare opportunity of watching the history of this book unfold right now, with the print and digital forms developing more or less simultaneously. These conditions enable us to test one of the assumptions driving the media controversy ... that readers of the print and of e-book versions are reading the same novel. (p. 211)

Questions about what kind of object the e-book is and its relationship to the printed book continue to haunt scholars (Drucker 2013; Liu 2013; Mangen 2008; Vandendorpe 2011).

It is the convenience of e-reading and its potential for prompting a renewal of enthusiasm in reading that has teachers across the levels of education excited; and how students and teachers are taking up e-reading tells us something – though not everything – about the potential for the format. Recent studies about the efficacy of e-readers in learning make the point that digital texts reduce structural damage caused by students carrying large volumes, may increase engagement for students, and offers a range of tools that assist reading, comprehension, and writing about reading, such as highlighting and annotation tools (Kirscher, O’Donnell, Marwick, Fitzpatrick, Cassuto,

& Palfrey, 2010; Lederman, 2009). Natalie Houston (2012) reflects on her experience teaching literature topics to students with an open device policy in the classroom. She claims that, "Some of my strongest students this semester were those who were using one or multiple e-devices" (n.p.). However, there are also concerns that the digital reading environment will undermine reading quality. Writing for the *New York Times*, Julie Bosman and Matt Richtel (2012) argue that, "People who read e-books on tablets like the iPad are realizing that while a book in print or on a black-and-white Kindle is straightforward and immersive, a tablet offers a menu of distractions that can fragment the reading experience, or stop it in its tracks." However, as Christian Vandendorpe (2011) points out, there is a long history of distracted reading, and distracted reading seen as a positive trait. He connects what some have considered to be distracted or shallow reading with a behaviour of wide reading alluded to by scholars in the past, citing Roland Barthes' habit of halting the reading of a book to pursue his own thinking and Jean-Jacques Rousseau's habit of ceasing the reading of a book to seek out background knowledge on the matter at hand. In this way, Vandendorpe (2011) argues, "Rousseau was a hypertext reader well before the invention of the computer" (n.p.). Where Bosman and Richtel separate reading on the Kindle from reading on the iPad as two very different experiences due to the networked and media-rich nature of the iPad and the opportunities it offers for distraction, others conflate the two and suggest that screen reading is all the same.

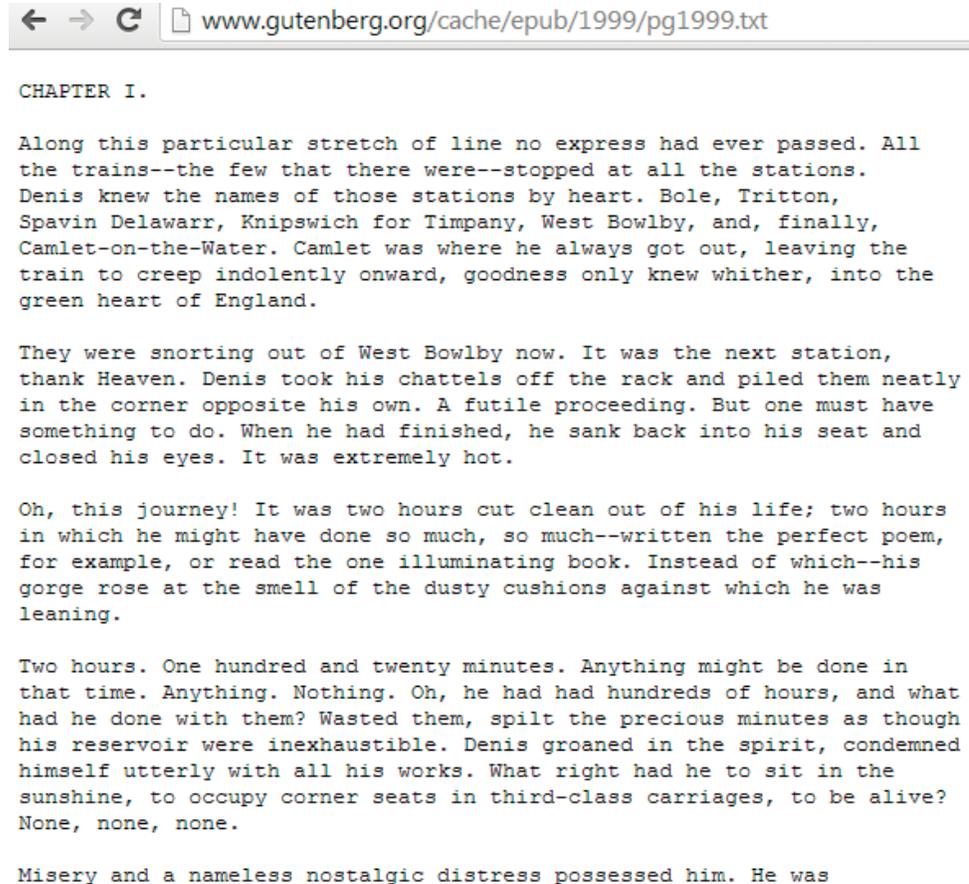
The screen as a reading environment is a diversity of spaces. The electronic book, of course, has a much longer history than the social reading projects of the late Web 2.0 era, with Project Gutenberg creating electronic texts as early as 1971 (Manley & Holley, 2012). These electronic editions of out-of-copyright texts are completely unbound from the material conditions and markers of their original state.

Figure 1 shows Aldous Huxley's 1921 novel, *Crome Yellow*, as a text file in Project Gutenberg, completely unbound from its material format. The text is rendered as one long slab without pages or chapters, though the chapter divisions are retained through headings. The text frame is the size of the box the user sets the window to, allowing control by the user in establishing the frame but discarding many of the other material elements of reading. Users also have control over font type and size. Other features of the typesetting are removed and/or adjustable by the reader. There are no indents. The reader cannot gain the same sense of making progress through the book as he or she does by turning pages in a material book. The chapter divisions are maintained and this and the scroll bar become the dominant geographies of reading in this environment. Although the scroll bar goes some way toward marking a reader's progress through a Web page or electronic document, readers tend to value the paratextual components such as page numbers. This is evident in the way Amazon inserted a page number capability into later Kindle devices that gives readers the choice for orientation between percentage read and page reached. However, it must also be noted that these unbound texts were more portable and exportable, providing access for people with disabilities and opportunities for artistic making and remaking.

Another early contributor to the e-books movement was the Internet Archive, which began in 1996 as a way of preserving in a static format Web pages that, because of the

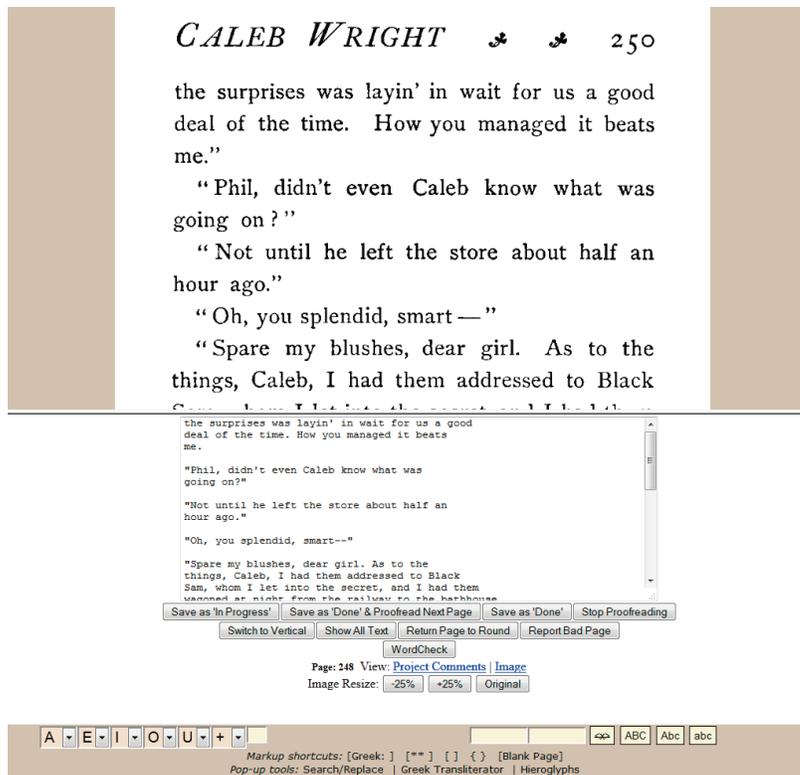
nature of the medium, are so amenable to flux and alteration. This archive became available online as the WayBack Machine in 2001. The remit of the Internet Archive, however, continued to grow and as of 2015, it, in connection with Open Library, houses over 8,000,000 e-books, having itself digitized 2.1 million.

Figure 1: Aldous Huxley's *Crome Yellow* in Project Gutenberg



So while Project Gutenberg and the Internet Archive predate Google Books, they now rely heavily, though not exclusively, on Google's scanning. This is evident through the trail of origins of texts found in their repositories. Of course, much of the digitizing of significant works of literature was completed prior to the Google Books project's commencement in 2004. *Caleb Wright: A Story of the West* (circa 1901) is an example of a text that came to the Internet Archive via a different way. The metadata for the book's entry in the Internet Archive indicates that it came from the University of Toronto Library and that its "digitizing sponsor" is "MSN," that is, Microsoft (Internet Archive, 1996a). Following these links reveals that, "Microsoft has sponsored the digitization of books from several libraries to help build the Microsoft Book Search service" (Internet Archive, 1996b). Whereas Google's role in book scanning is widely known, due to the popularity of Google's search engine, its Google Scholar search engine, and the news coverage that legal action has generated, Microsoft's role in scanning books is not as widely known.

Figure 2: Distributed Proofreaders interface



The Distributed Proofreaders project was established in 2000 to create a platform for mass collaboration to correct errors in an Optical Character Recognition (OCR) scan program (Reagle, 2010). Checks are built into the platform and its system of deploying volunteers to ensure quality control. As can be seen in Figure 2, the original image scan appears in the top half of the screen and the OCR text version appears below. The proofreader can check for scan errors and amend any problems. Formatting can also be fixed. While these projects are designed to provide access to out-of-copyright material, it is true that practices of digital reading have also been influenced by pirated texts and other copyright violating texts. As part of the evolutionary history of e-books, the proliferation of pirated texts as digital files in the 1990s and 2000s created a network and market for the creation and consumption of digital texts. These were frequently circulated as Microsoft Word files, copied and pasted from OCR scans or typed by fans. For example, in the days before the official release of *Harry Potter and the Half-Blood Prince* in 2005, a large group of fans worked to digitize a copy that had been accessed despite the strict embargo conditions imposed on booksellers. The group of fans coordinated their efforts via Internet Relay Chat, using hashtags such as #potterwork to distribute the labour involved in scanning, applying software, and proofreading to fix the OCR glitches that plague scanned text. Fans even made unauthorized audiobooks, in some cases splitting the work of recording the reading of chapters among a team of readers, which also speeds up the process. This coordinated effort is similar to the Distributed Proofreaders project where volunteers provide the labour to create searchable full text out of the book image page scans available to the public through Project Gutenberg and Internet Archive.

The guidelines and policy of the Distributed Proofreaders emphasize the importance of maintaining the original work, even if that means the maintenance of typographical errors or errors of fact or omissions (Distributed Proofreaders, n.d.). The Internet Archive has evolved its means of representing texts in the archive toward re-binding the book by archiving, using, and providing access to the original image scan of the book page. There is significant voluntary editorial care taken to ensure an e-book is a more authentic reproduction of the original text, including being as close as possible in the formatting. This makes the reading experience significantly different to that encountered with a text file. Figures 3 and 4 show texts in the Internet Archive as unbound slabs of text (Figure 3) and as page scans (Figure 4) with very different reading experiences provided by each. Project Gutenberg, however, maintains the plain text approach to e-books (see Figure 5), focussing instead on export formats for different e-reader technologies.

Figure 3: *Crome Yellow* in the Internet Archive as a free text file

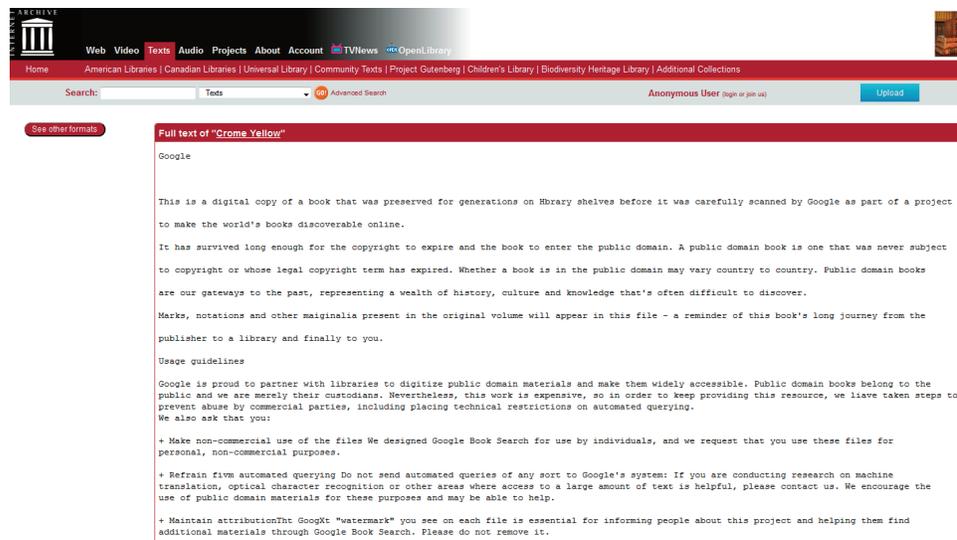


Figure 4: *Caleb Wright* in the Internet Archive in a completely different format with much of its material appearance preserved.

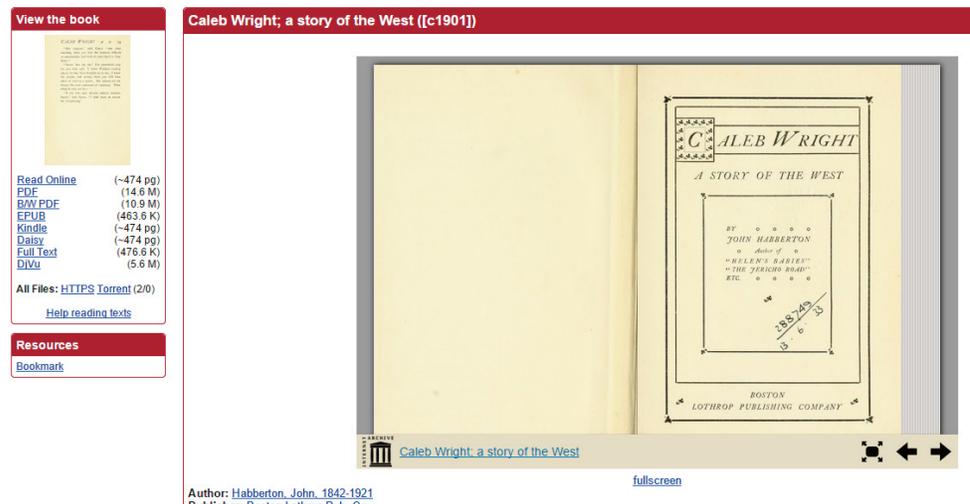
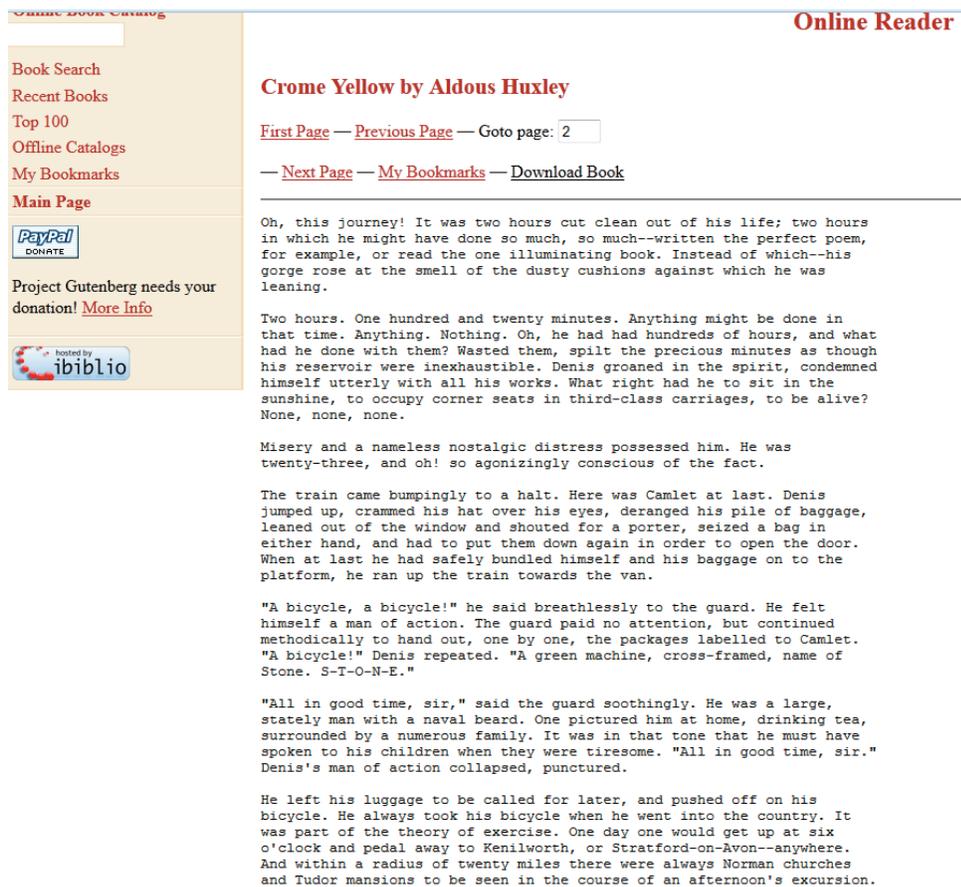


Figure 5: *Crome Yellow* in the Project Gutenberg Online Reader format. Note the use of “pages” and “bookmarks” as affordances of the material book re-introduced to the reading experience online.



The Google Books project reinstated a material framing for the book. That is, the digitizing process was aimed at scanning works and making both the scanned page image and the digitized, and therefore searchable, OCR text available. This emphasizes the material and printed origins of the work. However, while intellectual and ethical concerns about the enterprise are valid, Google Books has brought back the bound framing of the book in the digital environment by maintaining the image of the scan, in addition to the searchable text derived through Optical Character Recognition. This re-binds the book, giving it a visual frame that is consistent with the experience of reading the material book.

Figure 6 shows one of the editions of *Crome Yellow* in the Google Books archive with a preview available. The scanned image here shows the double page spread with the hallmarks of copying evident in the discolouring down the centre. This gives a traditional, if non-physical, binding, impacting the relationship between the reader and the text by incorporating the symbolic charges of material books. The “View Ebook” button invites readers to purchase the e-book for AUD\$3.25 in addition to ratings data and reviews gleaned from the Goodreads website. Figure 7 is a two-page spread from the same Google Books file, but with a very different appearance.

Figure 6: *Crome Yellow* in the Google Books archive

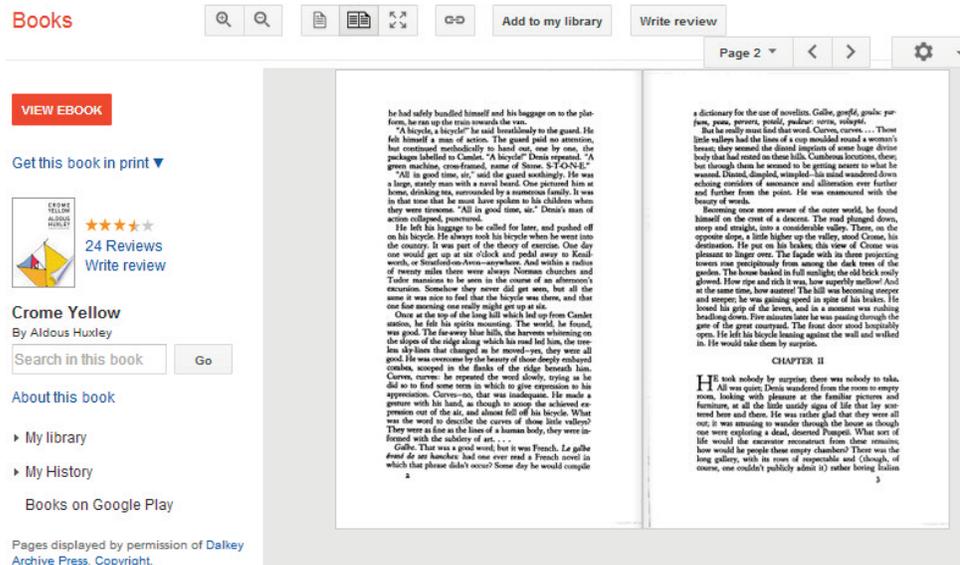
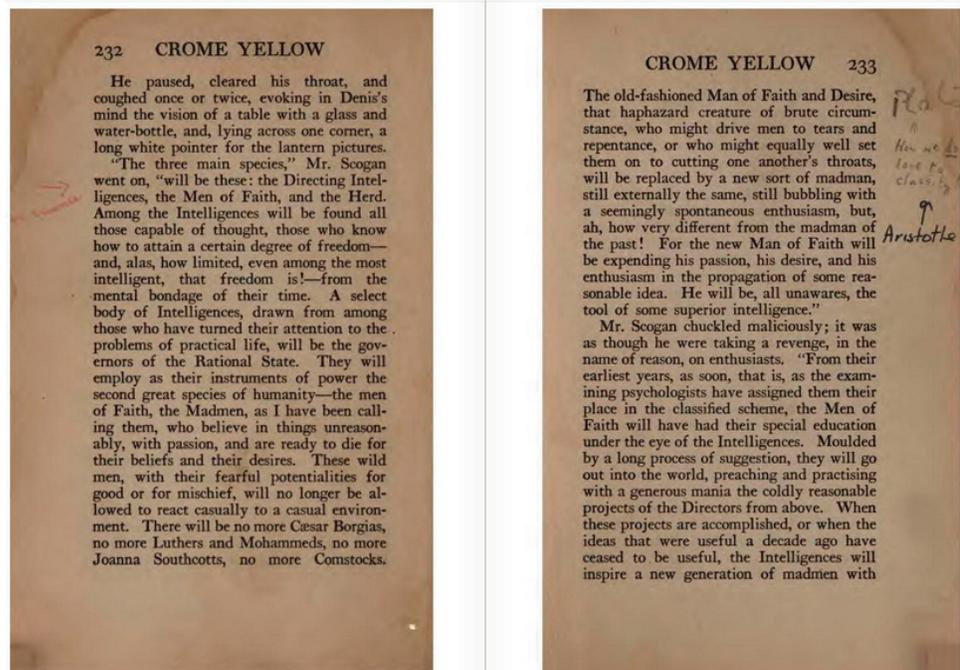


Figure 7: Google Books preview of *Crome Yellow* with stained, yellow pages and annotations in the margins. The dispute here is about whether it is Plato or Aristotle that is of relevance to the text.



This interface is a hybrid of new and older forms. The scan retains the imagery of its original material format. The aged, stained, and marked paper now contained within a digital frame heightens the disjunction created by the merging of formats. Rather than scrolling through a long slab of text, the reader observes the notion of pages and the act of turning them.

Google Books texts are preserved like a mosquito in amber: the material book is preserved in stasis but with a range of variables. These variables can obscure content (due to errors in scanning where hands or pages in motion are captured). They open up interpretive and intertextual possibilities (such as annotations and notes made by readers) or close interpretive possibilities (where the passive reader may adopt the interpretation of the note-taker as authoritative due to its permanence in the scanned volume, or the active reader is unable to talk back to the permanently recorded evidence of another active reader's response to the text).

However, there is occasionally a sociability in the margins of a text that needs to be accounted for. Subsequent readers write back to earlier readers, building on or disputing their readings. Figure 8, for example, shows a range of different readers in the margins of a text as housed in the Internet Archive. Figure 9 shows a degree of underlining of the text in the scanned work included in the Hathi Trust file of *Crome Yellow*. Meanwhile Figure 10 shows the considerable annotations of a reader contributing a great deal of content to an early American cookbook.

Figure 8: A scan from *Crome Yellow* housed in the Internet Archive showing a range of different commentators in the marginalia. "Poignant," someone has noted in the upper right margin, though it is unclear whether it is the printed text that is poignant or someone else's commentary in the margin.

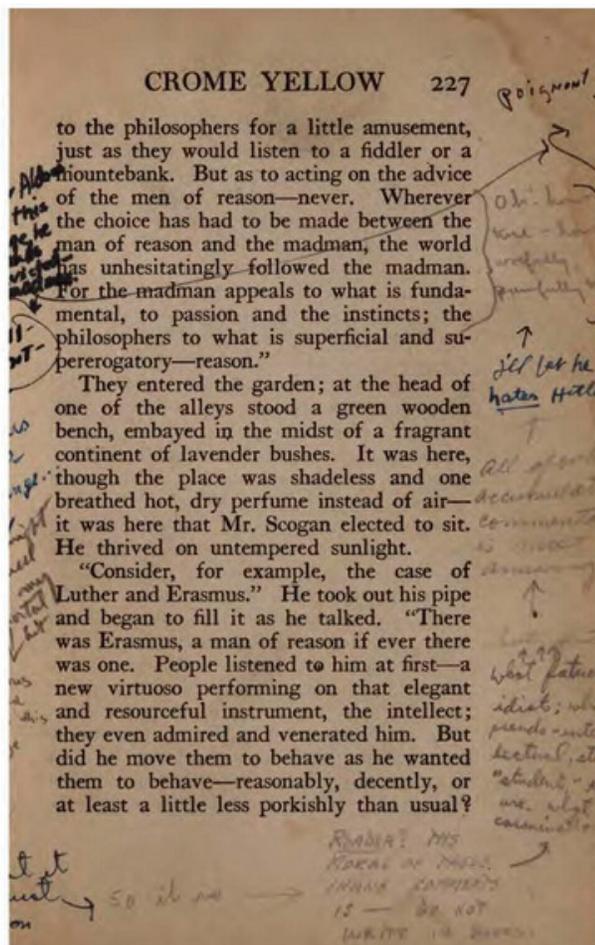


Figure 9: *Crome Yellow* in the Hathi Trust

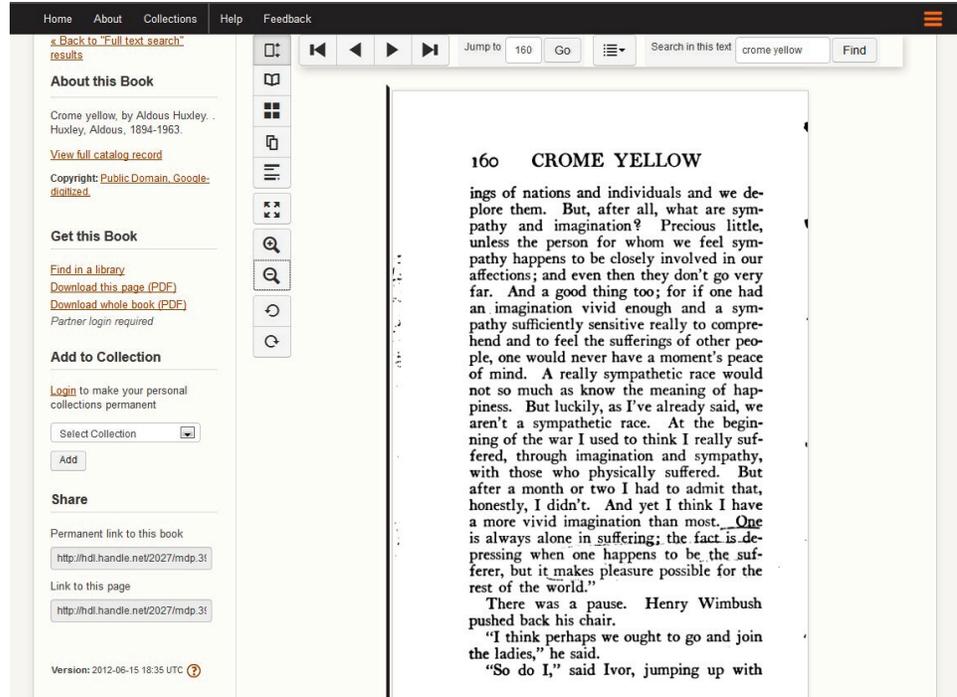
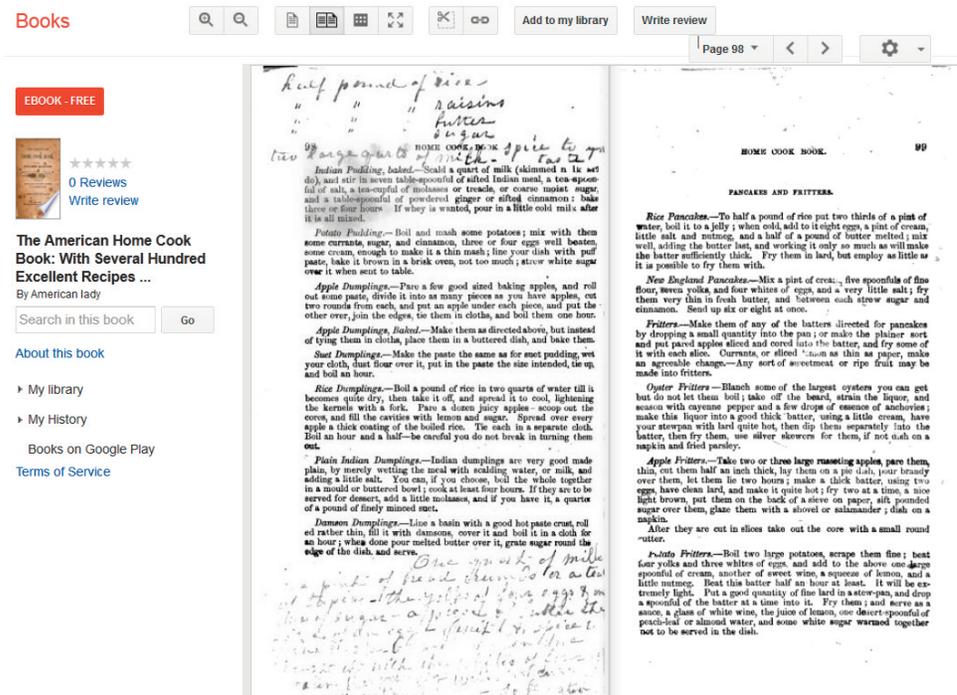


Figure 10: This shows considerable annotations by a reader in the margins of an early American cookbook.

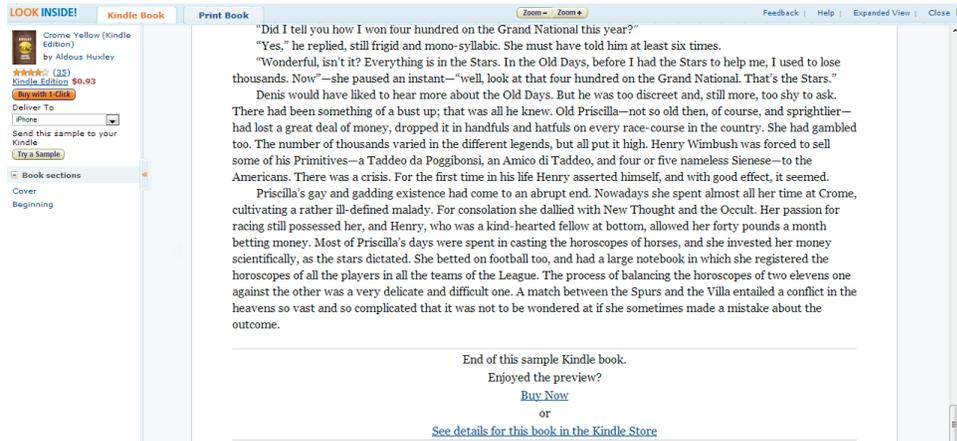


As online projects such as Project Gutenberg and Internet Archive sought to provide free access to the world's knowledge – for whatever reason, altruistic or not – e-commerce offered opportunities for monetizing it. Amazon.com was launched in 1995 in the U.S. as an online bookstore but quickly went on to sell a range of items and

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spawn separate websites for international arms. Its Kindle was first released in 2007. The Kindle rebinds a book by providing a material frame to the digital text. Note that Kindle's protective covers frequently reference the material book by using elements of the material book in their design. I will return to the Kindle below. In addition to selling retail books through its website, Amazon also sells print versions of free online content including Project Gutenberg Books and Wikipedia articles. While this is legal under the Creative Commons licenses attributed to the source material, this practice is widely condemned. Amazon joined the social media trail very early, allowing its users to review books and to create lists of books based on any criteria. This generated activity among a community of readers. The emphasis here is on integrating value-added content and, significant for the bottom line, user-generated content. Amazon populates its books' pages with bibliographic data, metadata, sales rankings information, more specific sales data such as "people who bought this book also bought ..." user-generated content in the form of reviews, lists of books, and forums where people post discussions beyond the one-way review. Readers can also respond to reviews and rate them with a star system. Amazon's integration of this content has seen it add value to the bland screen of a book purchase option that might otherwise be limited to a blurb and a buy-now link. The "see-inside" function, too, emulates a bricks-and-mortar store where readers can flip through the pages of a book to weigh their purchase options. In this way Amazon integrates the traits of both on and off line book retailing. Here the book is completely unbound, with a scrolling slab of text providing the prospective buyer the opportunity to read a couple of chapters of the book before purchasing, as seen in Figure 11.

Figure 11: Amazon's short preview of *Crome Yellow*



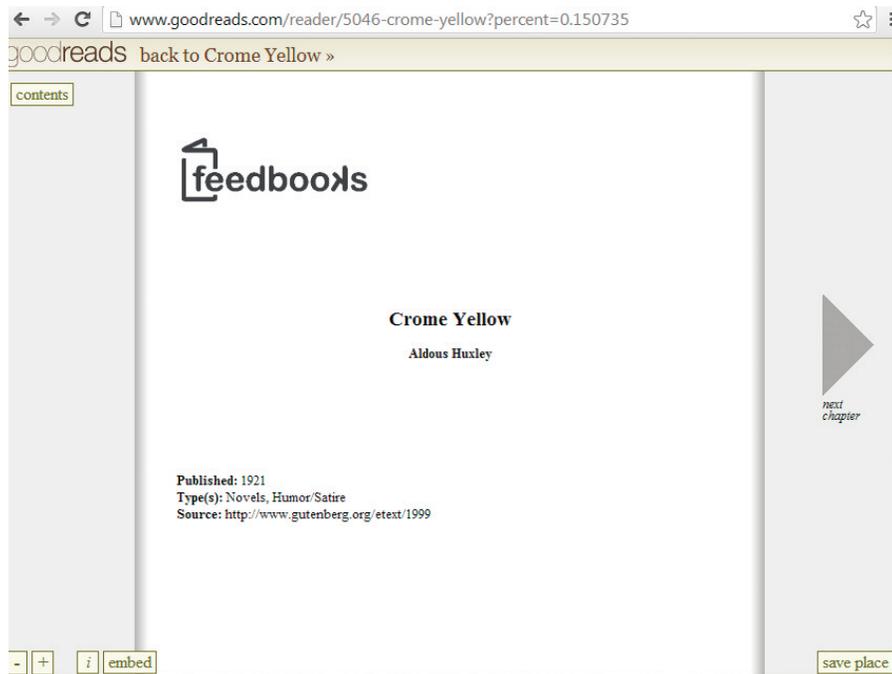
Amazon has gradually increased its social media activity, ultimately purchasing the sites and platforms that perform this function best rather than trying to compete with them. Two of the organizations incorporated into the Amazon family are Goodreads and Shelfari. The Goodreads website was launched in 2007 with a mission to "help people find and share books they love" (Goodreads, 2015). The service connects with Facebook and allows friends to share book recommendations, follow each other's reading habits, and generate book recommendation based on their book likes and dislikes. In March of 2013, Amazon announced its purchase of Goodreads for an undisclosed price, widely reported to be U.S.\$150 million in cash and stock, and in

September of 2013, Amazon launched a version of its popular Kindle e-reader with Goodreads integration. Similarly, in 2008 Amazon purchased Shelfari, a “social cataloguing website” and “community-powered encyclopedia for book lovers” that allows users to “create a virtual bookshelf” (Shelfari, 2006-2013). Shelfari and Goodreads, in providing virtual bookshelves where readers and friends can catalogue and display the books they like and share their lists with each other, simulate the physical shelf of the book aficionado. In addition, they provide metadata and reviews for books, and collect books together in lists.

Figure 12: *Crome Yellow* as it appears in Goodreads



Figure 13: *Crome Yellow* as it can be read inside the Goodreads service, provided by Feedbooks, an online e-book seller that focuses on providing e-books for mobile devices, but also provides free public domain e-books for mobile readers.



Goodreads connects a social network of users around particular book interests and creates new social networks based on reading preferences and experiences. Looking at the options in the listing for *Crome Yellow* (see Figure 12), the frame offers a range of features that are familiar to Web users and social media users. The service lets users know, for example, that none of their friends have commented on the book yet. Goodreads also doubles as a reading platform for out-of-copyright works. Inside the book, accessed by clicking the “read book” button, the affordances of the material book are highlighted (see Figure 13).

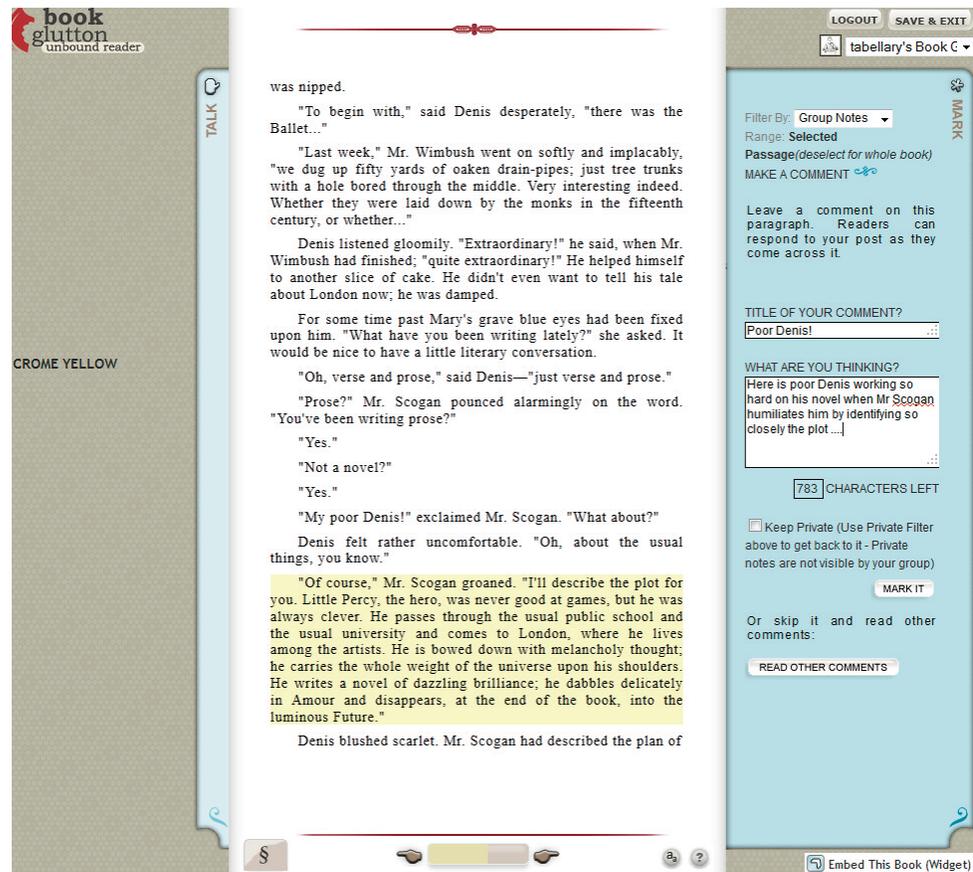
Unlike Shelfari and Goodreads, BookGlutton (2007-2013) provided a platform for reading out-of-copyright books as well as talking about them. BookGlutton’s website indicated that the project “set out to create a better way to read on-line” and to “build an experience that is simultaneously a book group, a computer, and a book” (BookGlutton, 2008). It ceased operations on September 7, 2013, and the website ceased to function by the end of September 2013.¹ One of BookGlutton’s taglines was “unbound reader,” signalling the interest of the tool in releasing the reader from the shackles and bindings of traditional reading, but the interface for digital reading through their platform was based heavily on the material experience of reading printed books. They used many of the affordances of material reading, including both the image of the material page and the concept of turning pages through the book. The focus of BookGlutton, however, was emphasizing the social experience of reading. Another tagline was “Books are conversations,” and the company insists:

We believe firmly that people want to read, annotate and discuss, right there, immersed in the text. That’s the best time to talk about a book. We also respect the solitary side to reading: people should have the chance to tune out the community. We wanted it to be attractive, too; to be an experience. It was designed for the laptops, tablets and phones people carry to their coffee shops, and meant for the network, not the desktop. Finally, it had to be something we’d want to use. (BookGlutton, 2013).

BookGlutton, then, sought to create synchronic moments of reading in the way that book groups do, but take it further by creating opportunities for people to express responses to a book in the moment that they have them. The absence of reflection in this process may or may not cause concern when considering the value of social reading (BookGlutton, 2013).

Before its closure, BookGlutton’s page for *Crome Yellow* showed it had 912 opens and 2,151 views (see Figure 14). It invited users to download the e-pub digital version of the text or add the book to a group. Users could annotate the text by selecting a section of the text to highlight and then adding a comment in a box on the side of the screen. The framework allowed users to choose a title for their comment and then asked, “What are you thinking?” It provided a text box that allowed roughly 900 characters of commentary on the selected section. This comment could be kept private or made public to the user’s reading group or public to everyone using BookGlutton.

Figure 14: *Crome Yellow* in the BookGlutton framework,
including the highlighting and notes functions.



One of BookGlutton's founders, Travis Alber, has gone on to create ReadSocial, a free service application that connects reading across devices and content. According to the ReadSocial team, "[b]y grabbing a few lines of code and dropping it into your iPad app or website, you can offer groups and shared comments, right on top of your content, no matter where it is" (ReadSocial, n.d.). The team has also created the concept of ReadUps, a service aimed at post-secondary students allowing them to swap information and notes and to chat inside texts in real time (Twitter style) or in asynchronous formats. Evidence of the company's attempt to garner critical mass is apparent through its collaboration with HarperCollins – it combines the Application Protocol Interfaces (APIs) of HarperCollins Open Book with ReadUps.²

Another short-lived but promising reading app was Readmill, a Berlin-based operation. Readmill began operating in 2011 and launched iPad and iPhone apps that allowed readers to use various formats, including Adobe Digital Rights Management (DRM) and Portable Document Format (PDF), to read books within a social platform. Books purchased on Google Play, Kobo stores, and Feedbooks, among other partner stores, could be imported to Readmill for reading, social reading, and annotating experiences (see Figures 15, 16, and 17). There was a darker side to Readmill, however. The site's FAQ stated, "We're in the business of supplying publishers with reading data. What people read, for how long, where they read, what their favourite passages are etc"

(Readmill, 2013). This speaks to the commercialization of digital reading and raises privacy concerns for users (Bangeman 2010; Gross & Acquisti 2005). Certainly Amazon, too, collects data from its social reading tools and Kindle readers. Data collection concerns not only what books people buy but what they do with them after they are purchased: how much of the book is read and where the reader might stop reading. This data is sold back to the publishers who, one speculates, use it in publishing and marketing decision-making.

Figure 15: Readmill highlight and note function

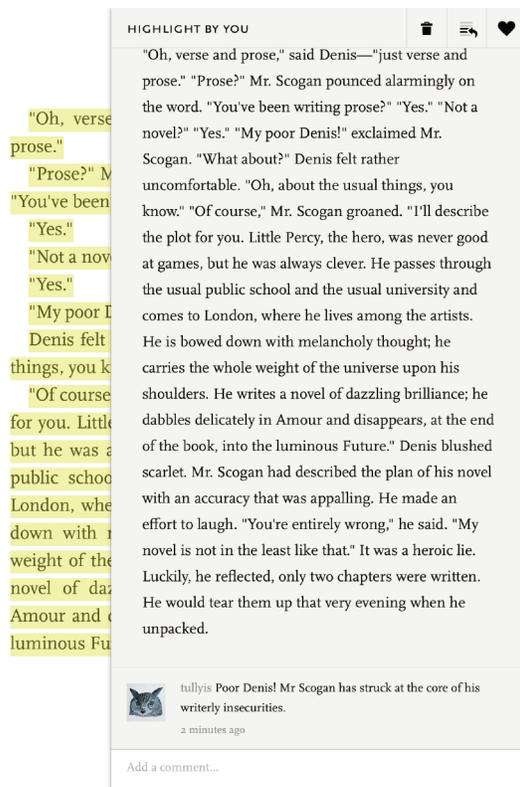
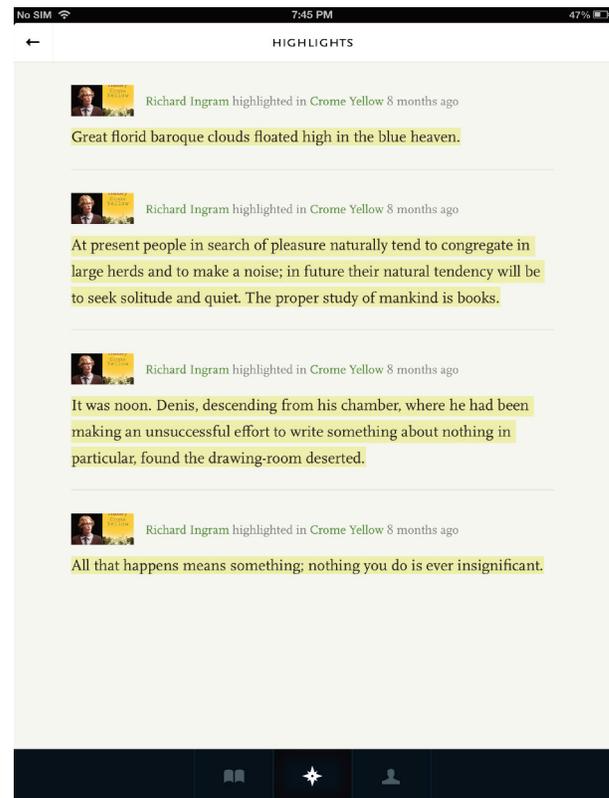


Figure 16: Readmill on the iPad

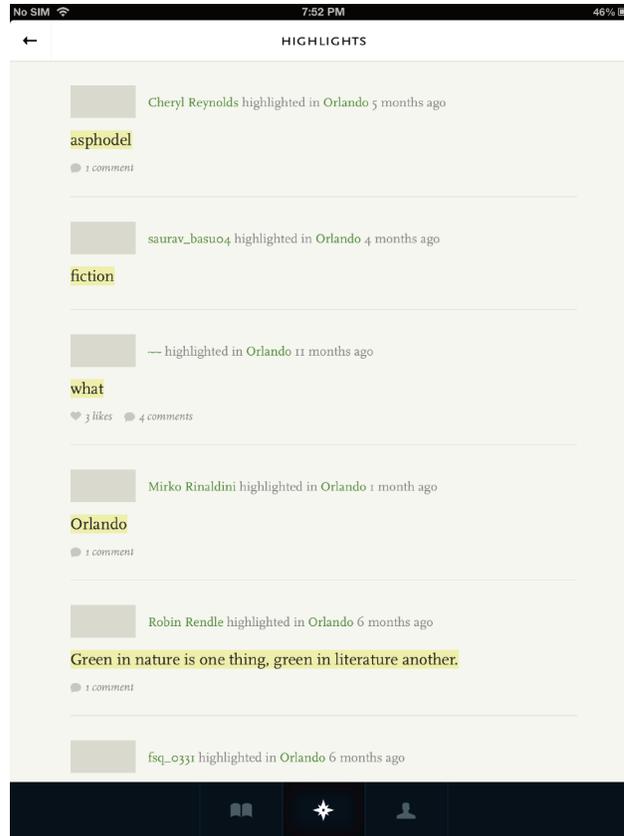


In March of 2014 Readmill was sold to Dropbox for U.S.\$8 million in stock and cash, as a “talent acquisition” with key staff moving to Dropbox. Readmill’s “epilogue” statement of closure argues that:

Many challenges in the world of ebooks remain unsolved, and we failed to create a sustainable platform for reading. For this, we’re deeply sorry. We considered every option before making the difficult decision to end the product that brought us together ...

Our team will be joining Dropbox, where our expertise in reading, collaboration and syncing across devices finds a fitting home. Millions of people use Dropbox to store and share their digital lives, and we believe it’s a strong foundation on which to build the future of reading. We’re delighted to work alongside this talented team and imagine new ways to read together. (Readmill, 2013)

Figure 17: Highlights in Readmill



Readmill, with all its affordances, could not find enough success in the market to trump the offer from Dropbox. In calling its closing statement an “epilogue,” Readmill drew upon literary conventions that further underscore the connections it was trying to draw between print and electronic reading platforms.

Other reading apps include Subtext, a free app aimed at the Kindergarten to Grade 12 “21st century classroom.” This education-based app allows teachers to construct reading communities inside and outside of the classroom and the book. Another app, Copia (Copia, 2009-2013), invites users to “Read.Learn.Share” and to “Live in the Margins.” Copia, launched in November 2010, has desktop, smartphone, and tablet readers to deliver “social eReading on any platform.” Windows app “Social Reads” integrates with the GoodReads client for Windows computers, tablets, and phones, but is not an e-reader itself.

These apps and platforms are the current stage in a long trail of the digitizing of the text, and they return many of the affordances of the material text to the digital reading experience and environment. While the early electronic texts in .txt files and similar emphasized access to information, knowledge, and culture through the project of digitizing literature, the reading of the texts was hampered by their unbound state. Slabs of text with endless scrolling make for difficult reading and this has been recognized in the next generation of reading environments, mobile reading frameworks, and social reading tools.

Whether it be the Google Books website, a dedicated e-reader, or a reading app on mobile device, framing a book within a reading platform changes the relationship between the reader and the object being read. It emphasizes the extent to which the physical printed-on-paper book is itself a container with an interface. This is something I developed a sense of while working as a bibliographer for AustLit: The Australian Literature Resource. AustLit uses the Functional Requirements for Bibliographic Records (FRBR) model to index and classify the works held in its database (Kilner, 2005). The FRBR model is a conceptual framework to help conceive of the elements associated with a work. FRBR uses four classes or levels of entity in the description of a bibliographic item: works, expressions, manifestations, and items. The item is the singular object or example of the manifestation, such as the book on the shelf; the manifestation is the physical reality or embodiment of the object in the world (an edition, say); the expression is the form the work may appear in, often called the realization; and the work is the immaterial concept of the book, the intellectual or artistic creation, which could be rendered in multiple expressions, manifestations, and, especially, items.

The digitization process and the creation of digital texts offer us a useful framework to help us think through the relationship between different objects, material or otherwise, that make up new conceptions of textuality. Digital texts, then, begin to constitute a useful object to help us think about the relationship between a work and its physical realization, and what stages it might go through on its journey there. Little work has been done on the way FRBR might be used to understand the value of the unique material item in understanding textuality. Jerome McDonough, Matthew Kirschenbaum, Doug Reside, Neil Fraistat, and Dennis Jerz (2010) attempted to apply the FRBR model to cataloguing computer games but found the model not quite applicable to the form. This bibliographic system might be useful in thinking about what is lost in Google Books. In the digitization of projects, the item comes to stand in for the work because only one copy of the work is granted the transformative power of digitization and thereby an electronic afterlife. In actual fact, several copies of each work are digitized, largely because of the way the book-scanning project occurs across different sites. However, the fact remains that many items of a work are conflated into one in the Google Books archive. The materiality of the book, emphasized through the scanning technology, obscures the flattening of the idea of the work that occurs through this transaction.

Similarly, and following on from the idea of a textual work as an immaterial object within some kind of container, these examples of digital reading must all take into account the notions of interface. For Johanna Drucker (2011), who advocates for a humanities approach to the interface, the theory of the subject is crucial to understanding the workings between humans and reading frames. Drucker's focus is on environments for literary scholarship; however, her work is just as relevant to environments for active reading (the idea of reading with a pen in one's hand or making interventions in the text) and for social reading. Drucker (2011) argues that, "We do not read content independent of interface on a screen any more than we do when we read the newspaper" (p. 9). Amazon Kindle's ability to sync a reading across platforms so that a reading may start on a mobile phone, continue on a desktop and

tablet, and finish on a dedicated e-reader, then, requires thinking through. Readers may intersperse reading from the printed book in conjunction with these digital frames in what Drucker calls “frame jumping” (p. 9). Perhaps this creates a sense of “frame lag” as readers try to navigate the various layers in operation in the text. Clearly there is more work to be done here.

Conclusion

The Kindle and other mobile e-reading devices represent another stage in the binding and unbinding of the book in its journey through media forms. The transition from reading a bound material book to reading a completely unbound digitized text file to reading an electronic book with affordances of the material book, in the form of framings and tools, which evoke the more traditional experience of reading, is a trajectory that requires further scrutiny. Whether this tells us that the affordances of the printed and bound book are closely tied with the experience, value, and process of reading long-form texts or whether humans require a longer period of time to transition from the bound book to unbound textuality, it is difficult to say. Amazon’s ever-growing set of social tools indicates the extent to which social reading and social consuming are inseparable. The reintroduction of affordances of the material book frame electronic reading in a way that is more consistent with the history of reading. The unbound book continues to need bindings. The Kindle’s emulation of the bound book and bounded page, while still allowing for flexibility and accessibility in controlling the reading environment, builds on the history of material reading in designing reading interfaces to be successful with large groups of readers. This highlights the importance of designing interfaces for reading that take into account the habits and psychology of the reading experience. Reading infrastructure may break away from the affordances of the material book in order to be able to incorporate the knowledge environments available in digital culture, not by providing slabs of unbound text but by looking to the affordances of social networking and linked open data. I argue that experiments of building social networking into the unbound book reveal reading behaviours and complicate reception, even as they promote the reading of long-form fiction as a digital-relevant practice. The human traces of marginalia, underlining, and scan errors that appear in Google Books impact how we read and relate to the texts contained in the digital database. Similarly, the faint underlines on the Kindle screen indicating the presence of other readers inside the text impact how we relate to the text. The frames that digital designers and entrepreneurs create to enable social reading on computers, tablets, and mobiles are finding it difficult to compete with the established colonizers of digital reading in the form of Amazon Kindle and its equivalents, Kobo and Sony e-reader. These key moments in the attempt to unbind the book from the material print and paper format illustrate the struggle readers, publishers, and book marketers have in understanding what the book is in the present day. The initial complete unbinding of the book as it was rendered in Plain Vanilla ASCII allowed for increased access to texts for the visually impaired and for artistic reuse of text, but subsequent rebinding of the book through the adoption of indicators of the material in online digitized archives and reading apps shows the connections readers tend to have with the markers of the material.

Notes

1. The BookGlutton website reads: “From 2007-2013, BookGlutton delivered an innovative social reading experience. For many years, it was the only way people could discuss a book right from the page. Shared commenting was always a core part of the experience, including the ability to leave comments on paragraphs and chat inside chapters. The site represented a great innovation in reading and publishing, and we’ve seen it inspire other entrepreneurs and visionaries” (BookGlutton, 2008).
2. See, for example, the attempt to get HarperCollins readers using ReadUps through a Wayne Dyer self-help book title. The ReadSocial Flickr account shows many of these interactions (Flickr, n.d.).

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