

Read in Browser: Reading platforms, frames, interfaces, and infrastructure

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Abstract:

The endless debates over the future of the book and of reading have obscured the fact that the infrastructures in which we read are changing how we read. What goes on around the text as a result of the platformization of textuality influences the reading experience. It therefore becomes crucial to better understand the effects of digitalization, and the frames and architectures that house it, on reading and the literary experience, beyond the procedural concerns towards the cultural implications. This paper uses scholarship from the growing intersection of new media studies, digital humanities, literary studies, reading studies, and critical infrastructure studies to consider the complex interweaving of material and digital objects in literary culture, and the diverse networks that serve both as portals of access and containment. The paper asks what these interactions mean for the complex experience that is immersive and long-form reading. It proposes the concept of hyperparatextuality to think through the new reading environments in which books are accessed now. The infrastructures of digital reading include new and more intrusive, more hypertextual and more paratextual frames and this affects the reading experience and therefore the meaning we make out of texts.

Keywords: reading, infrastructure, digitization, digital reading, ebooks, born digital, digital humanities

Krissy Wilson's project 'The Art of Google Books' first appeared as a curated Tumblr account in 2011 posting oddities found in the Google Books site: fingers and hands of digitizers, pages caught mid-turn in the act of scanning, folded pages not folded out for the scanning, rips, tears and stains, the annotations of readers, and the markings of library ownership and borrowing history are just some of these (Barnett 2016). A community sprung up around the seeking out and circulation of these strange occurrences inside the Google Books project. Serving as a repository for all of the ways that digitization disrupts our notions of what is a

book, the 'Art of Google Books' project invites us to reconsider what it is we are doing when we create, access, use or immerse ourselves in digitization projects. It asks us to reconsider what is the mediated platform of our textual encounters and what it is that digitization does. When the project appeared in 2011, Google was embroiled in an enduring legal case over copyright regarding their vision for all the world's books stored in one place, a vision that had stemmed from the earliest days of the company. Larry Page and Sergey Brin had caused a stir by announcing the project, then called Google Print, at the Frankfurt Book Fair in 2004, beginning with partnerships with a number of libraries, mostly university libraries, in the US as well as the British Library. It wasn't long before the Authors Guild responded to the project in the strongest possible terms – commencing legal action in 2005 that was not resolved until the courts found in favour of Google in 2013 and again on appeal in 2015. In the wake of the legal wrangling, there has been a lot of discussion about what digitization means for publishing and authorship and what it means for libraries and information management but there has been much less attention to what it means for the physical objects of literary culture or what it means for immersive reading experiences (though Bonnie Mak (2014) and Nanna Bonde Thylstrup (2019) are among those who have attempted to do so).

Collectively, the eruptions inside the Google Books database – those torn pages, the stains, the annotations and other markings of readers and institutions, the presence of the people undertaking the scanning labour – remind us that books have an infrastructure that gets disrupted even as it is highlighted when we transform texts from one format to another. That is, digitization creates an object that is neither a material text nor a digital work, and as readers and scholars we need ways of unpacking this phenomenon. Much of the work being done in the field of digital textuality focusses on the born-digital (ebooks, fan fiction, Goodreads and the like), but this is only one half of what I am calling the Read in Browser phenomena. The unique conditions of digitization as the transmutation of a literary object from one form to another needs some unpacking. This paper uses scholarship from the growing intersection of new media studies, digital humanities, literary studies, reading studies, and critical infrastructure studies to highlight the complex interweaving of digitization and the born-digital, and the diverse networks that serve both as portals of access and of containment. In transforming a material book into a digital object, the technical process of digitization is creative and generative. It creates a hybrid textuality that influences every aspect of literary culture in the digital age with implications both for maintaining the literary record as well as for the immersive reading experience. We read so much text inside new frames. These Read in Browser environments, as spaces through which literary and cultural texts are increasingly accessed, demand new forms of attention that require readers to integrate frame analysis skills in ways not needed for the traditional printed book reading page. A digital reading frame encompasses so much more information, choices and pathways, and demands upon attention, and therefore cognitive processing, with all of the paratextual components that are invoked within the reading frame.

Jerome McGann challenges scholars ‘to surveille and monitor this process of digitization’ (2013, p. 276) in order to understand its influence on reading and textual and literary culture. This monitoring must take into account the broader systems and infrastructures within which digitization occurs, the policy and commercial factors, the labour conditions of people involved in the digitization process, the assumptions bound up in the platforms in which the digitized objects are packaged for consumption. These are questions that require an interdisciplinary perspective. I explore the usefulness of the emerging field of critical infrastructure studies (Smithies 2017; Liu 2016; Drucker and Svensson 2016) to understanding the place of digitization in literary cultures and argue that it offers a lens through which to question the foundations upon which these knowledge production and translation processes rest. In doing so, this paper responds to McGann’s call by considering the hybridity of the digitized literary object within a developing cultural history of mass digitization projects and critical infrastructure studies.

The fractious debate about the end of the book has metamorphosed into worry about the end of long form text immersion, or literary reading, and to an interest in how the production, distribution and reception of texts will develop in the networked future (Birkerts 1994; Carr 2008). This has mostly been in relation to born-digital literary objects, such as Kindle editions of books (Barnett 2014). Current practice in the development of electronic textuality – such as Google Books, Amazon’s Kindle device and web- and app-based reading platforms, Goodreads, and app adaptations of literary objects – provide useful nodes in rethinking literature and its meaning in a changing world (the world is always changing). Embedding social networking functionality inside electronic books assists scholars, teachers, parents and the curious to observe reading behaviours even as they complicate that behaviour, change it, render it anew (Mangen 2008; Barnett 2014). The traces that readers leave in material books that then become part of the digital (digitized) object in the form of marginalia, underlinings, and scan errors in Google Books or the Hathi Trust have an influence on our reading experience, they become part of the textual frame and have to be navigated by readers, accounted for, as part of the meaning making process. The Kindle function of making public highlights and notes, too, changes the reading experience (Barnett 2014; Rowberry 2016).¹ These are all new or newly platformized elements of reading. Erika Ortega et al use the term ‘reading traces’ to refer to the evidence of reading in digital texts (2014). This is an interesting term that is picked up in a range of contexts. Andrew Stauffer’s project ‘Book Traces’ which looks for the evidence of reading in material books housed, for example, in public universities libraries and, to a lesser extent, private collections, uses the term. Elsewhere I have used the term ‘the human trace in Google Books’ to think about these material inflections in digitized books (2016). And Rita Felski examines the use of archaeological and geological metaphors in understanding reading in her book *The Limits of Critique*. These examples reveal a tendency to look to haptic and material concepts such as layers, touch and access when reconceiving digital reading, and also they reveal an interest in thinking about the place of the material text and material reading histories and experiences. They connect up with work in media

archaeology (Parikka and Richterich 2015; Mattern 2017) that uses metaphors of layers, traces, and other geological conceits.

In emphasising the material elements, these approaches provide an opportunity to see elements of the communications project that has been opaque. Matt Hayler argues that ‘a work’s embodiment always plays a structuring role in our reception of the text’ (2016, p. 17). Ika Willis takes this a step further in pointing out that ‘what the contrast between the Roman scroll and the contemporary Kindle makes clear is that reading technologies are not simply neutral carriers of information. Rather, the technical, material, physical and physiological aspects of reading form part of a broad sociocultural system’ (2017, p. 134). For Deb Verhoeven, too, infrastructure is not ‘neutral.’ Rather than existing as a ‘passive conduit’, she argues, cultural infrastructure ‘catalyzes for better or worse. In that sense, it is a technology that holds a social promise, not just a technical one’ (2016, n.p.). Johanna Drucker also calls attention to the influential presence of the invisible platforms, drawing on Goffman’s work on frame analysis to articulate the effects on cognition and interpretation of environments in which readers are ‘constantly confronted with the need to figure out what type of information is being offered and what tasks, behaviors or possibilities it offers’ (2011, p. 6). Thus, Read in Browser environments tend to offer more complicated reading and thinking frames than do traditionally printed works, for the most part. The hypertextual links, authorial and publication information, the presence of other readers in the forms of comments, ratings and reviews, or marginalia or other markings, the increased search capacities within the reading frame, offering the opportunity to search in text rather than read it, all combine to create a different kind of reading environment. In the printed work, competing frames and paratextual elements are most often limited to front and end matter rather than competing for attention within the frame. When we read online are we looking at, looking through or looking with these interface, platforms and frames?

Like McGann’s call for scholarly attention to be paid to digitization, Rita Felski calls for a practice of reading that pays attention to the object. In her influential *Limits of Critique*, Felski argues that ‘a skillful suspicious reading is... also a close reading, requiring intimate knowledge of its object’ (2015, p. 112). Object is an unstable word when we factor in digitality – if it was ever stable. The object-ness of the digital/digitized text is different to the object-ness of the original material object (which is itself unstable and built on other objects). Such work must take into account the material form of the textual object, which is changed by digitization and by the specific characteristics of the platforms and infrastructure in which they exist. Katherine Hayles reminds us that ‘we think through, with, and alongside media’ (2012, p. 1). Hayles and Jessica Pressman develop this further in the introduction to their collection *Comparative Textual Media* when they say that this approach ‘recognizes that print is itself a medium, an obvious fact that tends to be obscured by its long dominance within Western culture’ (2013, p. vii). Thus Hayles’ view that ‘electronic textuality presents us with an unparalleled opportunity to re-formulate fundamental ideas about texts and, in the process, to see print as well as electronic texts

with fresh eyes' (2005, pp. 89-90) proves complicated, as she herself acknowledges, due to the stickiness of the print medium and its less visible or less apparent entanglements.

In addition to the importance of acknowledging 'the specific epistemological, methodological, theoretical and rhetorical issues' raised by new digital and digitized literary environments and the quantitative and qualitative methods that might be used to understand them (Bode 2012, p. 172), we must also pay attention to the specifics of infrastructure: the devices we read on, who is controlling the software and reading processes we use, how the visual design and display of information direct our reading experience. A task at hand now is to develop a concrete framework for understanding these issues and their interplay across scholarship, policy and practice, across device, platform and reading experience, and across the chasm of database to interior literary engagement. And it is incumbent on those of us engaged in these activities to never lose sight of the reader in the mix.

The question of digitisation and digitalization of literature has attracted considerations of access (Reed 2014), resource provision (Holley 2010), copyright and legal statuses (Rimmer 2017), and educational differences (Baron 2015; Mangen 2017) but these approaches, all fine contributions to a complex problem, do not go far enough. While the framework of preservation pays attention to the material object, and the framework of access account for the characteristics of the digitalized text, neither concept understands digitization at that broader conceptual level. To do this requires a notion of textuality across forms and platforms. Ryan Cordell argues that:

large scale, digitized historical archives offer an opportunity for scholars to thicken our understanding of the media they represent and our continually evolving relationships of reading and remediation toward the analog and digital archive. When we treat the digitized object primarily as a surrogate for its analog original, we jettison the most compelling qualities of both media. (2017, p. 193)

Cordell's notion of digital surrogacy gives us information about the way we scaffold the born-digital. But it tells us something, too, about how we conceptualize the digital literary object. Where a media studies approach can (not always) separate the textual object from its long history and labour conditions and where book history can (but not always or not necessarily) reify the printed book as the ultimate technology, with a materiality and specificity, neither fully account for the network of material, social, software, and human interactions that a critical infrastructure approach opens up. And where media archaeology approaches, in the rush to resist the hagiography of much of media history, can divorce the media objects from the people who directly or indirectly created them, a critical infrastructure studies approach brings together a range of approaches and methods and makes visible many of the characteristics beneath the immediate surface.

Critiquing the technical

Analysis of the set of networks, conditions and interfaces within which the digitized object is housed, preserved, accessed and interpreted – in short, read – requires a nuanced set of approaches in order to consider the complex interweaving of digitization and the born-digital, and the diverse networks that serve both as portals of access and containment. Critical infrastructure studies can bring a useful set of questions to this. Key thinkers working in critical infrastructure studies at the moment include Alan Liu (literary studies and digital humanities), James Smithies (digital humanities), Shannon Mattern (anthropology), and Deb Verhoeven (cinema studies). In the work they describe as concerning media infrastructure, Lisa Parks and Nicole Starosielski argue that:

a focus on infrastructure brings into relief the unique *materialities* of media distribution – the resources, technologies, labour, and relations that are required to shape, energise and sustain the distribution of audio-visual signal traffic on global, national, and local scales. (2015, p. 5)

To audio-visual, we can easily add textual, literary and informational. This approach provides space to talk about the interrelation of things, people and labour within a sociocultural and political context. James Smithies emphasizes the relationality of infrastructure when he talks about ‘material culture, knowledge and practice’ (2017, p. 114) operating in a relational context. Smithies cites Dourish and Bell who argue that ‘[i]nfrastructure itself is a relational property; it describes a relationship between technology, people, and practice’ (Dourish and Bell, 2011, p. 28; Smithies 2017, p.114). And Jennifer Edmond highlights the interrelation between people and infrastructure in and beyond the digital humanities, arguing that people are at the centre of the knowledge infrastructure upon which successful research and DH infrastructure rests (2015). It is this significant space given to relationality and to people and the work they do that make the critical infrastructure studies approach so useful to drawing out what digitization means for reading as a cultural practice.

Drawing from work in new materialisms and feminist science and technology studies, critical infrastructure studies sets out to understand the materiality of things, sites, people, and processes and locate media distribution, including textual and literary distribution, within systems of power (Gitelman 2014; Manoff 2006; Shep 2016). Meanwhile beneath the layer of project infrastructure that separates Google Books from its comparators, there is the functioning of the interface located both within and beside the screen. For Johanna Drucker:

The surface of the screen is not merely a portal for access to something that lies beyond or behind this display. Intellectual content and activities do not exist independent of these embodied representations. Interface, like any other component of computational systems, is an artifact of complex processes and

protocols, a zone in which our behaviors and actions take place. Interface *is what we read and how we read* combined through engagement. Interface is a provocation to cognitive experience. (2011, p. 9)

Drucker's argument here calls us to attend to that which we are always looking through: we slip past infrastructure into content as we are transported into immersion in creative work. But one does not exist without the other.

So accounting for the Read in Browser reading environments, or the many reading platforms that seek to create competition for Amazon and its device-based approach to reading ebooks, requires attendance to the characteristics of the digital interface, the visual display of information including icons, buttons, hyperlinks, etc; the metadata that is either displayed in frames co-located with digitized object or hidden behind the scenes; the politics of copyright, grant funding, project maintenance (Galey and Ruecker, 2010; Kilner and Osborne 2011) occurring behind the scenes; the labour conditions involved in the digitisation process (McGregor 2014; Barnett 2016) that include formal and informal volunteers and text correctors, the formal process of groups like the Distributed Proofreaders. For Matthew Kirschenbaum it is the affordance of the concept of forensics that helps us to think through 'electronic texts as artifacts' in the 2008 *Mechanisms* and the role of word processing in the production of the literary in the 2016 *Track Changes*. Through these ideas we can begin to get at the notion of a burgeoning critical infrastructure studies.

The notion of infrastructure is not uncomplicated, however. Alan Liu argues that:

critique at the level of, and articulated through, infrastructure—where 'infrastructure,' the social-cum-technological milieu that at once enables the fulfillment of human experience and enforces constraints on that experience, today has much of the same scale, complexity, and general cultural impact as the idea of 'culture' itself. (2016, n.p.)

Meanwhile, in his 2017 book on the digital modern, James Smithies argues that:

We need to accept that infrastructures are dynamic and socio-politically contested ... [and] present an additional layer of interpretative complexity because of their combination of technical as well as socio-political (and perhaps aesthetic) complexity that leads to deep inscrutability. (2017, p. 113)

Ryan Cordell's work on dirty OCR leads him to argue that 'all digitizations comprise layers of interface, image, and text that can offer unique bibliographic clues. Scholars should come to the digitized archive primed to analyze the interactions and tensions among a single digitization's editions and impressions' (2017, p. 214). This aligns with Bonnie Mak's work on 'The Archaeology of a Digitization' in which she argues that a 'digitization emerges as an interface of differing and often opposing narratives and temporalities; consequently, it

embodies and stimulates a wide variety of performances in the making of meaning' (2014, p. 1522).

One of these performances is that of reading. How does reading occur inside large scale, complex, dynamic and contested spaces characterized by inscrutability? Reading the platform and reading on the platform entail more than just thinking about the role of digitization in preservation or access, and more than thinking about the relationship between the component parts of the platform and the role it plays in experience. Where the printed book effaced its collaborations, its crowdedness, behind the illusion of a flat printed page, numerous figures crowd the digitized and digitalized reading frame. The affordances of social reading platforms provide the capacity for friends and strangers to cohabitate with the reader inside the book's frames and even pages, and to collaborate on a reading. Amazon's Kindle device/ online reading platform provides a highlighting function that has endured when many apparently revolutionary reading environments have launched and quickly disappeared, in large part because of Amazon's significant stake in customer satisfaction in reading environments (Barnett 2015). Goodreads is another platform that has endured, even after its purchase by Amazon in 2013, but Goodreads is not exactly a reading platform; rather, it is a platform about reading (Nakamura 2013), a paratext with a sticky entanglement that reaches out to and embroils the literary object as well as its readers into a new kind of relationship. Reading platforms, which seem to be doomed to short shelf lives, but that have attempted to extend this entanglement include Readmill and Book Glutton. Book Glutton (2007-2013) provided a platform within which readers could read out-of-copyright books as well as communicate about them with other readers. Book Glutton's website says they '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'. They ceased operations on 7 September 2013. And when Readmill closed its own metaphorical doors, also in 2013, it indicated that it had 'failed to create a sustainable platform for reading' (Readmill, 2013). This is code, of course, for failing to monetize. In the absence of independent (or independentish) reading platforms, the commercial players run the game. The tension between device and platform continues, but some players – Amazon, for example – have colonized both domains. We can read Kindle books on Kindle devices, certainly, but we can also read them on mobile phones, tablets and desktop computers. As Daniel Allington and Stephen Pihlaja remind us:

It matters that the most familiar tools and venues for reading and interpretation in the internet age are owned and shaped by commercial organisations seeking monopoly status: corporations such as Google (the world's premier text discovery system, and the owner of YouTube, Google Books, and Blogger, as well as the developer of Android, the world's most popular smartphone and tablet operating system), Apple (with iBooks, iPad, and iTunesU), and Amazon (with websites and warehouses and market-leading Kindle), as well as those behind the host of 'social' platforms (from Facebook

and Twitter to Tumblr and Academia.edu) beholden to shareholders and venture capitalists. (2016, p. 206)

At the other end of the commodity spectrum, but no less controversial, the Internet Archive and Project Gutenberg offer Read in Browser environments that are shaped by corporate infrastructure. The reading environment offered by the Internet Archive has changed much in recent years whereas that offered by Project Gutenberg has seen little change, almost since its inception in the 1970s when Michael Hart typed out the first ebook onto the big supercomputer of the University of Illinois (Hart). This project has continued to separate the words of the literary object from its material page. Novels in Project Gutenberg become multiformat .txt files – you can scroll down the screen from the first word to the last. Google Books is an entirely scan-based project, so that even the newly published works obtained from publishers via computer file are rendered to look like scans in their maintaining of the double page spreads (if not the human and institutional traces of the older works). Now newly published works are uploaded to Google Books via the partner program (so much for the Authors Guild protests). So while Google Books scans out-of-copyright texts and uses Optical Character Recognition (OCR) in order to be able to provide both the original material context of the work and a searchable digitized copy, the Internet Archive contains all such approaches in the one project. Other players, providing layers in the digitization process include the often crowdsourced and volunteer labour for OCR text correction (for example the Distributed Proofreaders and the National Library of Australia's Trove volunteers program). Different elements emerge that further our understanding of how the work influences reading as these stories about large and small digitization projects build. The story of digitization projects of diverse size and scale is needed to be able to account for the way we read now and the way we look after what we read, and the way we share the Read in Browser environment with others, knowingly or unknowingly.

When Andrew Norman Wilson stood outside Google's digitization service building at its Mountain View California headquarters, filming what would become the 11 minute 'Workers Leaving the Googleplex', he was following an instinct that something really interesting was happening at the intersection of the corporate organisation of labour and the cultural and literary object in its grip. Wilson says:

I came to realize that it was the same group of workers, mostly black and Latino, on a campus of mostly white and Asian employees, walking out of the exit like a factory bell had just gone off. Sequestered at the outer limits of campus, they would all get into their own cars: not Google shuttles like the rest of us. Hanging from their belts were yellow badges, a color I had not noticed before amongst the white badges of full-timers, the red badges of contractors, and the green badges of the interns.

I started to obsess a little. I mined all the information about the yellow badges that I could from Google's intranet, which led me to the internal name for the team—ScanOps. This class of workers, who left the building much like the industrial proletariat of a bygone era, actually performed the Fordist labor of digitization for Google Books—'scanning' printed matter from the area's university libraries page by page on V-shaped tables with two DSLR cameras mounted overhead. I found some vague meeting notes, probably left visible by accident, about how they would be excluded from all standard privileges like cafes, bikes, shuttles, and even access to other buildings. This was a fairly commonplace result of hierarchical organization at a corporate multinational, but why was this class of workers denied the privileges that even the kitchen and custodial staff had access to, and why did it seem so secretive? (Wilson 2016)

The next day he was fired (Wilson 2016). The labour conditions that underpin the Google Books mass digitization project are built on secrecy and exploitation, on different classes of worker. And these tensions are a big part of what makes it to the surface in the arresting hand scans in Krissy Wilson's 'The Art of Google Books'.

That surface is itself in tension. When Sven Birkerts asks rhetorically in *The Gutenberg Elegies* 'where am I when I am involved in a book?' and proceeds to chart the features of this transportation as dematerialized (1994, p. 79) and Kevin Kelly responds to this in a debate series in a group in *Harpers* 'You're in cyberspace' (Tough 1995), they are both enacting this fantasy of disembodiment. Scholars like Hayles and Haraway have worked to explode this myth and Jussi Parikka has acknowledged the role of the work of material feminism in inspiring media archaeology's emphasis on the material object (see for example Parikka and Richterich 2015). But it is a critical infrastructure studies approach that can more deftly intertwine the weight of the material object with the pull of the digital interface and the resistance to the neoliberal tendency to efface the messy conditions provided by products and services under platform capitalism and its preceding epochs.

The act of reading, then, frequently so solitary and silent an activity, cannot be separated from the lived experiences of people working in digitization projects whether they be corporate-controlled projects on a mass scale or small projects at local libraries. The platforms, be they proprietary or open access, the hyperlinks, the contextual information, the institutional tensions, the skeuomorphism that abounds in the design of e-reading underpin the appearance of print in digital environments (Rowberry 2017) all require us to rethink the notion of the paratextual to be more fit for service for busy Read in Browser environments.

Conclusion

So as I have argued, central to the future of textual scholarship and the digital humanities has to be a more detailed understanding of digitization given the significance of this project

for humanities scholarship into the future. This means a better understanding of the story of digitization, its history and nuances, its adoption of particular features of the historical documentary record and the print literary object and its discarding of others, its contribution to (and perhaps in some instances detraction from) immersive literary experiences. The infrastructures of digital reading include new and more intrusive, more hypertextual and more paratextual frames for reading – perhaps a notion of hyperparatextuality is called for here, a concept that takes into account all of these features that compete for attention. The object rendered by digitization, then, cannot be said to be entirely electronic nor entirely print. Rather we have to understand it, instead, as a hybrid object displaying elements of both. This is illuminated in fruitful ways through the relational contexts of digitization, to use Smithies' notion of material object, people and practice (2017, p. 114). And the Read in Browser environments that are built for digitization and for born digital literary objects need to understand this hybridity better.

Notions like comparative textual media, critical infrastructure studies, media archaeology, and so on, are all evidence of our need for and attempts to account for the qualities of reading and digitization, to answer the question of what is this practice we are engaging in when we think about reading and writing in digital environments, both rendered digital and born digital.

My argument is that we need to think about digitization as a cultural practice. To understand infrastructure as cultural, and to cease to separate the technical function from the realm of the cultural and creative. We need to generate a set of concepts for and ways of thinking about reading and its infrastructures to enable us to get outside of technical functionalism or the access/preservation debate and understand digitization within a different register. This will enable us to make decisions about digitization and to account for textual work that appears in and around the digital environment that takes into account their specificity, to not see the digital as a binary of material or digital but as a more nuanced set of conditions, recognising that all digital is not the same. To this end, critical infrastructure studies offers the opportunity to rethink the technical as cultural and to lay foundations for new ways of thinking about textuality and the reading experience – and the reader – at the centre of the digitization practice as we move forward into a more hybridized, more digitized experience of culture.

But, ultimately, digitization is another part of the reading story and looms so large precisely because it exists in the world as a set of tangible or semi-tangible things, as things that can be touched or at least pointed to, invoked with some solidity and certainty. Meanwhile, reading itself remains invisible, largely unexaminable, except in the by-products it leaves in writing, in digital paratextual platforms such as Goodreads and in the metadata. Perhaps hyperparatextuality will provide the integration that will allow us to see reading in action in new ways.

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Note:

¹ Readers of Tully's article may also be interested in Rowberry's piece in this Themed Section in which he cautions us to question our understanding of reading practices because of Kindle's data-collection processes.