Digital Reading: Genre Awareness as a Tool for Reading Comprehension

Tanya K. Rodrigue

Digital Reading

Genre Awareness as a Tool for Reading Comprehension

Tanya K. Rodrigue

In 2007, Rebecca Moore Howard, Tricia Serviss, and I coded and analyzed undergraduate student research papers and made important discoveries about how students work with sources.[1] We concluded that students superficially engage with sources possibly because they do not understand what they are reading. The research papers revealed a noticeable dearth of summary, which suggests that students have difficulty comprehending sources, holistically engaging with texts, and/or working with ideas and language beyond the sentence level. In "Writing from Sources, Writing from Sentences" (Howard, Serviss, and Rodrigue 2010), we call for compositionists to teach students critical reading practices in efforts to help them avoid plagiarism.[2]

For nearly a decade, I, unsurprisingly, have heeded our advice and incorporated much of what we learned from our research into my writing pedagogy. For example, I spend a considerable amount of time teaching summary in first-year writing courses to help students acquire strong reading comprehension abilities and, in turn, work with sources in an ethical way. Yet I have come to realize that the teaching of summary and critical reading practices is much more complex than I ever imagined, and teaching students how to read and comprehend print texts is only one skill they need to succeed in college. The reason: our students live, write, and read in the digital age. Print reading is no longer the norm. Students read multimodal texts on screens—computers, smart phones, and e-readers—which demand different

reading approaches and comprehension abilities than does print reading. They then use these digital texts as sources in research-based writing. Teaching critical reading practices in college writing courses now involves teaching critical *digital* reading practices.

As educators, we must recognize that technology has drastically changed reading habits, practices, processes, and strategies, and we must teach the digital critical reading strategies that are essential to acquiring twenty-first-century literacies as well as treating sources ethically in source-based writing. In this article, I seek to inform educators about the importance and challenge of teaching students digital reading practices and to provide teachers with pedagogical practices they can use in the classroom. I situate myself in conversations about print and screen reading and contribute to theories of digital reading and the expanding toolbox of digital reading strategies that scholars have recently brought forth.

I argue that screen reading is best positioned as a *design-oriented activity*, a meaning-making process that involves engagement with multimodal genres. Readers of digital texts are *text designers*, those who construct meaning for the purpose of comprehension. Instructors can aid students in their development as digital text designers by teaching genre awareness. Drawing on several genre theories, I define *genre awareness* as an understanding of the way genres function in four distinct ways: (1) genres are multimodal, (2) genres invite recurring reading practices (Paré and Smart 1994), (3) genres invite engagement with other genres (Miller 1984), and (4) genres are rhetorical (Devitt 2008).[3] Genre awareness, I claim, has strong potential to help students formulate a customized digital reading plan that invites the kind of comprehension needed for strong engagement with digital texts.

Shedding Light on Student Reading Habits

To teach digital reading effectively, we need to start with a very basic question: how do students read? My experience teaching an undergraduate digital writing course in 2011 provides some insight. All of my course readings were digital—either PDFs or web texts. I made them digitally accessible for two logical, or what I thought were logical, reasons. First, students would not have to print the readings, so they would save time and money. Second, students, I assumed, read online a lot of the time, and thus screen reading is a natural, normal activity, one that they were both accustomed to and comfortable with.

Boy, was I wrong. On the second day of class, students revealed some of their reading habits. When I asked students to "pull up" the texts they read

for homework on whatever device they brought to class, nearly all of them retrieved paper from their backpacks. When I asked why they printed out the articles, students responded in various ways: "I can't read anything for school on a computer"; "I can't read on the computer, period"; "I had to print it out because I get too distracted when I read on the computer"; "I end up checking my Facebook page a million times and I lose concentration." Wow, I thought to myself. There was a complete disconnect between my expectations, ideas, and assumptions about how students engage with the screen and the reality of how some really do.

Then I realized my students' preference for reading print is not unique. Several studies conducted over the past decade have reported similar findings among undergraduate and graduate students, and those findings are often linked to comprehension abilities. In 2003, researchers from the National Autonomous University of Mexico surveyed 687 students. Eighty percent of those surveyed preferred reading print, claiming it was more conducive for understanding "with clarity" (Ramirez Leyva 2003: 154). Five years later, Arlene Nicholas and John Lewis (2008) conducted a small study on students from the "millennial generation" (born 1981–99) at a small, private New England college. While millennials are described as "high-tech" and "highly networked" individuals, engaging with technology in numerous ways on a daily basis, the study concludes: "When it comes to reading a book even they prefer good old-fashioned print" (90). A study conducted in 2011 found that most graduate students surveyed at National Taiwan University preferred print to digital, again citing comprehension as the deciding factor (Wu and Chen 2011). Similarly, researchers found that of seventy-two tenth graders studied in Norway, those who read the same text on the screen fared worse in comprehension tests than those who read print (Mangen, Walgermo, and Bronnick 2013).

The similar findings between my students' reading habits and this body of research on student reading practices around the world led me to ask several questions: What is it about the screen that repels reading, particularly in school settings? Is it generational? Why, aside from distraction and Internet reading habits, do students have difficulty reading on the screen? Is it because of the nature of digital texts? Do they have difficulty negotiating hyperlinks and multimodal texts? When my students said they "can't read" on the screen, do they mean they cannot comprehend what they are reading?

I initially surmised that my students' preference for print over digital had more to do with the act of reading itself rather than the medium with which they were engaging. Several scholars confirmed that this indeed could

be the answer—that students have difficulty reading, period. Although print reading and digital reading were not differentiated, several studies reveal that people read less and, in turn, have more difficulty understanding what they read. The National Endowment for the Arts report *To Read or Not to Read* (2007) states, "Americans are spending less time reading [and] reading comprehension skills are eroding" (5). Based on ACT data, students lack preparation for reading at the college level (ACT, Inc. 2006: 1). David Joliffe and Allison Harl's 2008 study on college student readers suggests the same findings as the ACT report.

Yet students' difficulty with reading on the screen may in part be attributed to the mode of reading that the screen invites. In "Reading on Screen: The New Media Sphere" (2008) Christian Vandendorpe claims the screen invites *browsing* (skimming to find information of interest) and *hunting* (searching for specific information), both of which resist the *grazing* mode, the kind of deep continuous reading that is associated with comprehension.[4] Vandendorpe argues that the history of the screen makes it easy to understand why mostly the browsing and hunting modes are used when readers engage with the screen: "The browsing mode was the first to define the activity of reading on the screen: it is so well adapted to the screen that the interface created for the web was aptly named a '*browser.*'" In the same vein, the creation of search engines like Google and Yahoo, according to Vandendorpe, invites a hunting mode of reading. Further, he notes that screen reading is strenuous on the eyes; factors such as font size and scrolling capabilities contribute to an environment that may not be ideal for continuous reading.

The lack of physicality may also have something to do with people's preference for print reading, as well as the challenges that come with screen reading. Stephen Payne and William Reader (2006) have discovered that readers create a mental representation of a text within a structure. Due to its physicality, a print text can be visualized by readers in its entirety; readers have a very clear sense of how they started (first page) and ended (last page) and can perhaps remember around what page something happened. Screen reading impedes this kind of navigational sense, which may explain why comprehension is easier when reading print than on the screen (Mangen et al. 2013).

In an attempt to mirror a print book and eradicate some of the challenges of screen reading, several devices—e-readers, notebook computers, and tablets—have emerged in the marketplace. The size and dimension of these devices are similar to many paperback and hard-cover print books; they thus provide the kind of physicality that print readers are used to. These devices

also provide readers with navigational tools to ground the reading experience in the same way as a book: readers can "flip" and dog-ear pages, as well as highlight passages and take notes. Creators of these devices have also attempted to ease the rigidity of the screen by eradicating a backlight—again, making the screen look much like a print text. These devices are strong examples of how mediums and genres invite particular kinds of reading: the e-reader is like a book and thus should be read like a book.

These book-like devices may seem to be the answer to helping students more fully engage with screen reading, yet a recent study reveals they are not. The same Norway researchers who studied tenth-grade digital readers conducted a study in 2014 asking twenty-five people to read a short story on a Kindle e-reader and twenty-five people to read the same short story in paperback. The findings: Kindle readers had significantly more difficulty remembering particular events in the story than did paperback readers (Flood 2014). While the e-reader is like a book and is meant to be read like a book, it is really a device with a screen and invites associated reading modes, hunting and browsing, both of which repel long-term memory and comprehension.

In "Is Google Making Us Stupid?" (2008), Nicholas Carr claims digital readers (including himself) are so used to browsing and skimming that they are unable to engage in deep and continuous reading on the screen. My students, and likely many other students, aren't any different. After reading Vandendorpe's article, several students, writing on their class blogs, discussed their online reading habits and how these habits have shaped their everyday reading practices. One student wrote, "The majority of reading and writing that I perform tends to be done through screens and tends to be of the browsing or hunting modes. Since performing these modes more often, I find it somewhat difficult and almost foreign to convince my mind to graze a novel or long article, as I once was able to do more easily." Andrew, another student,[5] wrote nearly the same thing: "I find myself using the browsing method or the hunting method most when I am using the computer. However, for me, this style of reading has come at a cost. I now find it very difficult to switch into grazing mode when I need to read chapters from a book."

And, of course, distraction or the need to move away from the task at hand is a topic that regularly arises in discussions of reading on the screen. One student explained, "I personally enjoy reading on screens more than regular books, but the main downside is the distraction from browsing the Internet at the same time. It has caused me to sub-consciously turn to Facebook a paragraph into whatever I am reading." And this magnetic force of

distraction does not happen to just teens or college students. Cory Doctorow, in "You *Do* Like Reading Off a Computer Screen" (2007), describes Internet distraction best when he writes, "In the ten minutes since I typed the first word in the paragraph above, I've checked my mail, deleted two spams, checked an image-sharing community I like, downloaded a YouTube clip of Stephen Colbert complaining about the iPhone (pausing my MP3 player first), cleared out my RSS reader, and then returned to write this paragraph." This experience may sound all too familiar, even to those who may consider themselves focused readers.

Interestingly, neuroscience helps explain why people multitask with technology. Technology—particularly devices where people receive social information such as e-mail, Facebook, instant messaging, and text messages—excites people. People don't know what they will find when they check devices, so they continuously do so and eventually become addicted to the act. As neuroscientist Russell Poldrack explains, these "unexpected novel events cause a release of dopamine in the brain. . . . If we are doing something when dopamine is released, then we are more likely to do that same thing in the future." He continues, "We see that jokes like referring to the Blackberry as 'crackberry' are really reflective of a biological reality: The brain systems that drive us to habitually check our devices and crave new messages are exactly the same ones that drive drug abusers to wreck their lives in search of the next hit" (quoted in Project Information Literacy 2011). The consequences of multitasking include *information overload*, when people become completely overwhelmed and thus have difficulty navigating and retaining information. People also tend to be more distracted by irrelevant information or information not needed for the task at hand. Distraction, according to Poldrack, also prevents the formation of strong memories, which are associated with comprehension.

Craving distraction seemingly carries over into other activities. Interestingly, Andrew, from my digital writing class, claims that reading print chapters from a book, which technically calls for deep reading, isn't distracting enough. He writes, "[When I read chapters from a book,] I get easily distracted and my mind wanders off because what I'm reading isn't changing or moving around like on the Internet." On the one hand, we have students who are distracted when reading on the screen, and on the other hand, we have students distracted when reading in print. Distraction, in itself, has seemingly become part of the reading process. Yet distraction is known to be disruptive to deep reading, and deep reading is known to be essential for comprehension. One student astutely questioned whether deep reading—or,

in Vandendorpe's terms, grazing—"in the future will exist as a mode of reading at all." If this is in fact a real possibility for many people, there must be a shift in thinking about how we can best comprehend what we read.

So now I'm back where I started. The screen largely invites modes of reading that do not call for the kind of comprehension that we want our students to gain when engaging with texts on the screen for school-based learning or research. Yet the deep reading that we expect from our students may not even be possible in the digital age. So the question now remains, what are some ways that teachers might help students engage with the screen and increase their chances of strong comprehension?

Digital Reading Pedagogical Approaches, Tools, and Strategies

Several scholars have offered various pedagogical strategies for teaching critical digital reading practices. The New Literacies Collaborative presents the Internet reciprocal teaching method (Leu et al. 2008), a series of steps to help students build reading skills through stages of scaffolded inquiry. Both Julie Coiro (2005) and Kevin Hodgson (2010) look to website design and aesthetics for digital reading strategies. Coiro claims previewing a web page before engaging with it can help digital readers more productively engage with the screen, while Hodgson (2010) suggests online software can help digital readers deal with cognitive overload. Matthew Kirschenbaum (2007), who draws on Franco Moretti's concept of "distant reading," suggests the use of visual classification and prediction systems as tools for digital reading. N. Katherine Hayles (2010) argues for a "repertoire" of reading strategies, close, hyper-, and machine reading, that students can use in isolation or in combination to help them comprehend both print and digital reading. (See appendix 1 for specific information about various pedagogical approaches, digital reading tools and strategies, and their purposes.)

As a one-size-fits-all deep reading method does not exist, I, like Hayles, imagine reading strategies as tools in a toolbox. Students may draw on one or more of these tools to accomplish goals. All of the tools scholars have presented may be helpful for students as they engage with the screen. Here I contribute to this rich toolbox by offering genre awareness as an effective tool for digital reading. In this section, I first explain the theoretical underpinnings of the tool and then describe how my students learned and used it to approach reading on the screen.

My digital reading tool, genre awareness, is theoretically informed by the characterization of reading and reading comprehension as a meaning-making process. The Commission on Reading of the National Council on

the Teaching of English defines *reading* as "a complex, purposeful, social and cognitive process in which readers simultaneously use their knowledge of spoken and written language, their knowledge of the topic of the text, and their knowledge of their culture to construct meaning" (2004), while the RAND Reading Study Group defines *reading comprehension* as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (2002: 11). In "Thoughts on Digital Reading" (2011), Troy Hicks also defines digital reading as a meaning-making process: "Reading is changing in so many ways, yet—at its heart—still remains a process of creating meaning from words and images."

According to these experts, readers (and humans in general) are meaning makers. Comprehension depends on a dialogical relationship between three sites of meaning: the meaning the reader brings to the text, the meaning embedded in the text, and the meaning the reader makes from interaction and engagement with the text. Meaning making and the triad of meaning interaction are fluid and recursive; new meaning is continuously made as the reader engages with the text. Digital and print readers construct meaning from a text by selecting and choosing information that builds comprehension. Digital and print reading, therefore, can be understood as similar to writing: we compose a reading much like we compose a text; we write to make meaning, and we read to make meaning.

Drawing on semiotics and genre theory, I propose we teach students that reading on the screen is a design-oriented activity that calls for readers to act as text designers. The definition of *designer* by the New London Group (2000) informs my designation of digital readers as text designers. *Designer* signifies both the process of meaning construction and the meaning that is ultimately made. The New London Group identifies stages in knowledge construction and elements of meaning making, demonstrating that "meaning-making is an active and dynamic process, and not governed by static rules" (20). Meaning makers journey through three recursive stages: drawing on "available designs" (or existing semiotic systems, e.g., visuals and audio); "designing," that is, "shaping emergent meaning"; and "redesign[ing]," or producing new meaning (20–23). The New London Group positions design and designing in terms of various semiotic systems or modalities, including linguistic, spatial, audio, visual, gestural, or combinations of some or all.

I propose we situate these semiotic systems within the larger framework of genre and draw on the stages of the meaning-making process to define digital reading and the digital reader. Digital reading is a *design-orientated activity* that demands genre awareness, and digital readers are *text designers*

of multimodal genres. Such a proposal demands a close explanation of the four aspects that comprise a definition of *genre awareness* most appropriate for discussing digital reading practices, as cited above: an understanding that (1) genres are multimodal, (2) genres have recurring reading practices, (3) genres interact with other genres, and (4) genres are rhetorical.

Digital texts are multimodal in that they comprise various combinations of alphabetic writing, still images, moving images, and sounds. All modes, or what Gunther Kress refers to as "socially and culturally given resources for making meaning" (2009: 54), in their own right are channels of communication. They encompass meaning and demand engagement and an understanding of the meaning being conveyed. When reading on the screen, students need to be equipped with multimodal awareness—an understanding that modes are meaning-making systems—and, equally as important, the ability to access and construct meaning within and among modalities.

An understanding of genres as multimodal is essential for the development of the unique set of comprehension abilities needed for digital reading. Donald J. Leu, Charles Kinzer, and Julie Coiro, members of the New Literacies Collaborative, describe these comprehension abilities: "In an electronic environment, decoding for comprehension includes decoding the strategic use of color; various clues that indicate hyperlinked texts and graphics; the possible actions of meaning-bearing icons and animations; and pictures, maps, charts, and graphs that are not static, but that can change to address questions that an interactive reader can pose to informational text during the reading act" (2004: 1582). This description reveals three bodies of interconnected knowledge needed for digital reading comprehension: (1) an understanding of multimodality and modes; (2) an understanding of the rhetorical elements needed for meaning construction within modes, such as hyperlinks and color; and (3) an awareness of multimodal genres, such as maps and graphs, and how they function.

In addition to understanding genres as multimodal, students need an understanding of the unique relationship between genres and reading practices. In "Observing Genres in Action: Towards a Research Methodology" (1994), Anthony Paré and Graham Smart highlight the role genres play in how we read and interact with texts. They characterize genres as a "distinctive profile of regularities across four dimensions: a set of texts, the composing processes involved in creating these texts, the reading practices used to interpret them, and the social roles performed by writers and readers" (147). Genres, they claim, have recurrent reading processes; they invite certain ways to read, directing readers as to how to approach a text, how to negotiate

their way through a text, how to gain meaning from the text, and what to do with the meaning gained. Paré and Smart contend, "To a significant degree, [recurrent reading practices] conventionalize the highly idiosyncratic act of reading" (153).

A genre does not just invite engagement between writer and reader; a genre, according to Carolyn R. Miller, also invites engagement with other genres. Genres interact, and thus many genres are what Miller would identify as "complex rhetorical hybrids" (1984: 164): they form out of other genres, sets of genres, or features of genres. Many web genres emerge from antecedent print genres. For example, online newspapers and magazines emerged from print newspapers and magazines, e-mails emerged from letters and personal notes, and blogs emerged from diaries and anthologies. Because rhetorical conventions carry over from print to the web, so do reading practices. Students who have an understanding of the nature of genres as interconnected, fluid entities that have recurrent reading practices may be better equipped to approach reading on the screen in a productive way. Students may draw on antecedent recurring reading practices and experiment with how these practices may or may not help them comprehend digital texts. The dialogical engagement between these recurring reading processes and writer/reader transactions is precisely where text design may begin.

Not all reading practices are directly transportable because of the social and rhetorical nature of genres. As social situations and relations change, so do genres and reading approaches. Genres also invite individual reading processes because of each reader's unique rhetorical situation. The way students may approach a reading task depends on several factors, such as their purpose and the task they seek to achieve. Of course, students' cognitive abilities and reading habits also play a role in how they engage with the genre. In the simplest terms, each person's reading processes and practices are unique and depend on the particular situation at hand.

Teaching genre awareness helps students understand that there are similarities and differences among texts in the same multimodal genre, and knowing both can help them determine how to best approach a text. An understanding of the similarities of a genre—its patterns and conventions—acts as a guide for students, and identifying recurrent reading practices, or the way the multimodal genre invites the reader to approach, navigate, and make meaning of the text, provides them with the first step in determining a reading plan. An understanding of the differences among digital texts in the same multimodal genre helps students recognize that they might not be able to read digital texts the exact same way every time; each digital text may

require different reading methods at different times, based on students' writing and/or research situations.

Using Genre Awareness as a Tool for Digital Reading

Although each teacher will have a different approach to teaching genre awareness as a tool for reading comprehension, here I share the approach I used in an undergraduate 200-level digital writing course. This approach would also work well in first-year or advanced writing courses. For those interested in adopting or adapting the approach I describe below, please look to the text box for guidance on what should be considered when using my approach. I first introduced the idea of texts as multimodal, guiding students in understanding *writing* as an umbrella term that embodies all communicative acts. Drawing on Daniel Keller's pedagogical recommendations in "Thinking Rhetorically" (2007), I showed students a short video twice: with the sound turned on and then with the sound turned off. After the first viewing, we discussed the way texts, visuals, and moving images worked to construct meaning, and after the second viewing, we talked about the role of audio in the messages being conveyed. This exercise transitioned nicely into a discussion about modality affordances and constraints, or in other words, the unique capabilities and limitations of modes. We collectively created a chart to identify the affordances and constraints of individual modes: alphabetic writing, speech, moving images (video), still images (pictures), and audio. The students then looked closely at a digital text, conducting an analysis of how the modes work individually and collectively to convey meaning on the screen. In a low-stakes writing activity, students explained how they accessed and constructed meaning within and across modes, including the strategies they used for understanding the multimodal texts. They later shared their ideas with the class. This activity gave students the foundational knowledge to approach "reading" and "comprehending" various modalities on the screen.[6]

After learning about multimodality and multimodal texts, my students read several texts related to online reading (Vandendorpe 2008), screen reading and cognition (Carr 2008), hypertext (Landow 1992), and genre (Dirk 2010) over the next couple weeks.[7] We engaged in continuous discussion about these texts. I designed heuristics for students to explore individual and recurring reading practices in a number of print and online genres. For example, I divided students into pairs and gave them the following prompt: "Read similar versions of a text in two different mediums. Describe your experience reading the text, explaining how the design, layout, font, and controllability/flow of text, physicality, genre, and medium play a role in how

you read. Identify the mode of reading you used and why. Compare/contrast your reading experiences with these two different mediums. Explain how and why your reading experiences may have been similar and different, and the advantages and disadvantages of reading in each medium." For this prompt, I created several scenarios that invited students to engage with print and online genres, for example, "Your English professor assigned students to read a novel. You are expected to participate in a class discussion about the text. You'll also write an analysis of the book a couple of weeks after the class discussion. Read a portion of the novel in print and on an e-book. Follow the assignment prompt." Other scenarios invited students to engage with various online genres, for example, "You wonder what your best friend is up to today. You wrote her an e-mail earlier in the day and also posted on her Facebook page. You just got an e-mail and a notification that she commented on your FB post. You read the e-mail on your laptop and the comment on your smart phone. Follow the assignment prompt."[8]

After students reflected on their writing experiences, I introduced genre awareness as a tool for digital reading by defamiliarizing the act of online reading. I asked students to read a genre that all but one of them had never previously engaged with: *hyperfiction*, online fiction with hyperlinks that resembles a "choose your own adventure" story. The piece I assigned was Shelley Jackson's *My Body* (1997), a hypertext that uses body parts as a way to discuss life experiences. Because students were unfamiliar with the genre regularities of hyperfiction, and specifically the recurrent reading processes of the genre, they did not already possess a way to approach reading and comprehending it and thus may not have understood that genre awareness could assist them in their reading approach. The activity simulated the act of reading online for the first time and hence constrained some online reading habits. If I had asked students to engage with a familiar genre, such as an online newspaper article, they would have already had a sense of how to approach reading and understanding it. Engagement with a foreign genre defamiliarized the reading act; therefore, students had more clarity in understanding what the process of reading entails and demands, as well as how genre awareness may aid in reading and reading comprehension.

After defamiliarizing the act of reading, I asked students to draw on their genre knowledge and determine how it might help them approach reading hyperfiction. They deduced that hyperfiction is an antecedent genre of print fiction or, in other words, that the hyperfiction genre developed out of the print fiction genre. As many of my students were English majors, we had a lively conversation about print fiction—what it looks like, why they enjoy

Using Genre Awareness as a Tool for Reading Comprehension

Instructors who wish to adopt or adapt this approach may consider the following:

- How much explicit explanation (via course readings and instruction) students need about the various aspects of genre awareness: multimodality, recurrent reading practices, and the interactive and rhetorical nature of genres
- How much class time to devote to teaching various aspects of genre awareness
- How much students need to practice their online navigational sense regarding scrolling, hypertext, page layout and design, icons, identifying digital genres, and so forth
- Whether to teach other digital reading tools and strategies (see appendix 1)
- Which course readings related to aspects of genre awareness and digital reading are most appropriate for course learning goals and objectives
- The kinds of homework assignments that may supplement and reinforce the learning that takes place in class
- How teaching genre awareness as a tool of digital reading may help students achieve other course learning goals and objectives
- The multimodal genre that will work best to defamiliarize the act of reading for students

it, what it does, how they read it, and strategies they use to understand it. After this discussion, students, without any explicit direction on how to do so, read the hypertext. They wrote about their experiences on their blogs following this prompt: "Describe how you went about reading the hypertext story. Describe your process, and the challenges, surprises, annoyances, and pleasures you encountered while reading it. Explain how it was different than reading a piece of fiction without hyperlinks."

The hyperlinks in Jackson's *My Body* do not look like traditional hyperlinks; there are no visible indications, such as a difference in text color or a recognizable icon that indicates what to click on. On first glance, the title page (fig. 1) simply looks like a sketch or drawing. Accessing previous knowledge about digital texts and the genre of print fiction, the reader is directed to click somewhere; it turns out the entire image on the first page is one large hyperlink. After clicking on the hyperlink, the reader is directed to what can be compared to a table of contents page in a print genre (fig. 2). Once again,
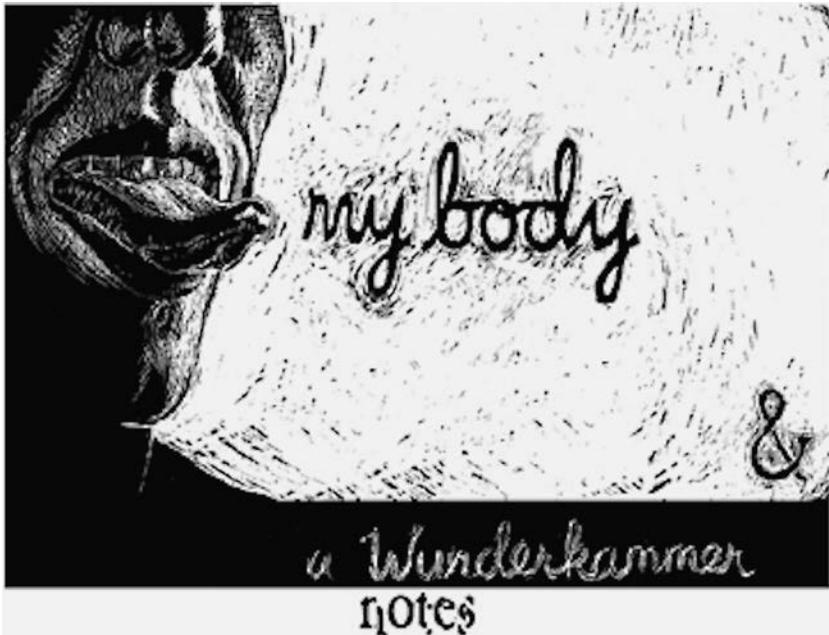
Figure 1. The title page of Shelley Jackson's My Body

upon hovering the mouse over the image, the entire page is seemingly one large hyperlink, yet a digital reader soon finds out this is not the case. There are many invisible individual links on the page that connect to pages with traditional hyperlinks, indicated by a color change in text; in contrast to the first and second pages, the images are not hyperlinks. Figures 3 and 4 give examples of what these embedded pages look like.

Students drew on their knowledge of print fiction to read this web text. On her blog, Susan wrote, "I started by reading each body part's story one by one in a vertical fashion working downward from the brain. I decided to ignore the hyperlinks at first (not the best plan, considering it was a hypertext story) and just focus on the meat of each individual anecdote." She soon discovered reading in a linear fashion did not work for hyperfiction. She continued, "This became dull by the time I made it down to the elbows, so I decided to try clicking on the links scattered throughout the text." Several other students discussed their reading process in a similar way.

From their blog responses, I discovered that students, through trial and error, customized their reading process once they activated their genre awareness. More specifically, students united antecedent print genre knowledge and corresponding recurrent reading processes, and recurrent reading
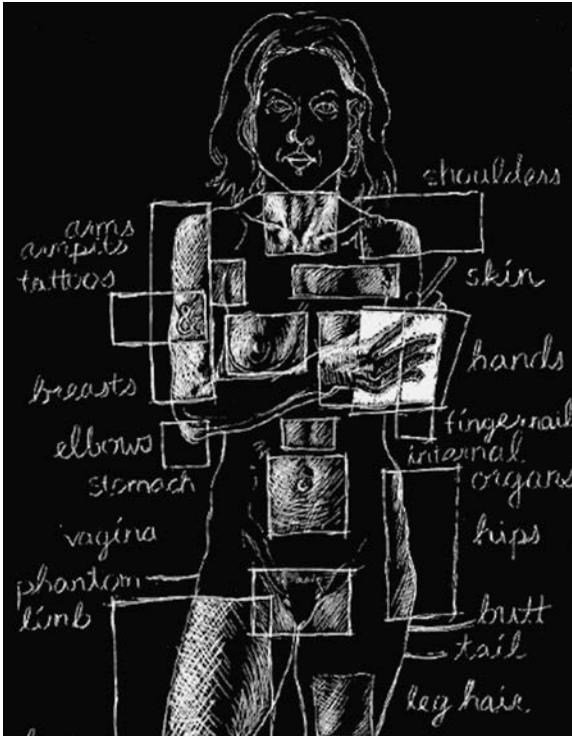
Figure 2. The second page (similar to a table of contents) in Shelley Jackson's My Body. *Each body part functions as a hyperlink.*

Figure 3. An example of a webpage in Shelley Jackson's My Body

Figure 4. An example of a webpage in Shelley Jackson's My Body

processes of a hypertext and the unique features of this particular hypertext within the genre of hyperfiction. Susan explained that, once she figured out the patterns in the story, she created a "personal map" to guide the rest of her reading process. Equipped with his map, Susan "became more invested with each section as [she] began to understand Jackson's very unique method of storytelling."

Another student, Jason, the only person in the class who had previously read hyperfiction, explained on his blog how genre awareness helped him approach reading Jackson's piece, which still demanded a particular reading plan. He wrote, "After already having read an e-literature story like this, reading this particular story was a bit easier—but still difficult." He continued to describe the plan he formulated to navigate and comprehend the site. Jason used Jackson's drawing of the body with its invisible hyperlinks, which he likened to a print table of contents page, as his "main reference point." He explained: "Any time that I thought I was getting, or was about to get lost, I would return to this main page and reflect on what I read and which body part this corresponded." Another student reflected on the effectiveness of his strategy: "This was a good strategy because it turned reading something that could potentially become confusing into something that was more clear and concise. Even though I did struggle following the hyperlinks and their significance to a particular part of the body, the systematic approach I took facilitated a proficient understanding. . . . If I had not 'pre-read' it before clicking the hyperlinks, I would have been lost." Jason reinforced the value of customizing a reading approach that is appropriate for his needs, the genre, and the particular text within the genre—in other words, his rhetori-

cal context. Other students described different ways of reading the piece of hyperfiction. One student said she clicked on every hyperlink, keeping each page open in her window on individual tabs and reading across the tabs, like a print book.[9] Another student said she used color to navigate her reading process. She determined what she had and hadn't yet read based on the color of the hypertext: blue if she hadn't clicked on it and purple if she had.

Although my students were confident that they comprehended what they read, it was important to discuss exactly what it was they understood about the story to informally assess their comprehension. Although the postmodern nature of hyperfiction truly invites readers to create their own stories, other texts that students will engage with for research-based writing will have less of an interpretive quality. Similar exercises using digital multimodal texts that they may actually use as sources in a research essay are necessary. Continuously alluding to the piece of hyperfiction as they work will be a helpful reminder of how they might determine how to approach reading digital texts as possible sources in a research-based essay.

Concluding Remarks

In this article, I seek to promote the teaching of digital reading practices to equip students with twenty-first-century literacies and provide them with the ability to engage with sources and use them ethically in their writing. As a one-size-fits-all reading approach does not exist, educators need to teach a toolbox of reading strategies. My contribution to the existing toolbox is genre awareness as a tool for online reading. This tool, I argue, helps students learn that (1) the screen requires a different reading process from print, yet print reading practices may be helpful in determining an online reading plan; (2) the conventions of digital genres invite recurring reading practices, yet each web text within a particular genre invites a particular reading process based on the writer's and reader's rhetorical situations; and (3) genres are multimodal, and thus an understanding of how to make meaning from various semiotic channels is important for reading comprehension. Although the online reading strategies I and other scholars propose will not solve the problem of poor reading comprehension, they are at least something we can provide to help our students become text designers who can read and make meaning from and with digital texts.

Appendix 1: Digital Reading Toolbox Chart

Source	Pedagogical Approach	Digital Reading Tools and Strategies	Purpose
Leu et al. 2008	Internet reciprocal teaching	Students (1) watch teachers model various strategies to navigate the Internet and comprehend digital texts; (2) work in groups to find information to solve a problem and then present on the sources and strategies they used to do so and discuss what they learned; and (3) take what they learned from their teachers and peers and embark on an individual project, later reflecting on the reading strategies they used.	This scaffolded pedagogical approach slowly helps students build reading skills over time.
Coiro 2005	Teach students how to preview a digital text before screen engagement	Students (1) read title of page and website; (2) scan menu choices without clicking on anything; (3) make predictions about where each link goes; (4) explore interactive features, pop-up menus, and scroll bars that may reveal additional information about the site; (5) identify the site creator; (6) try out any electronic supports on the site, such as an internal search engine; (7) and make a judgment about whether to explore the site further and, if so, where to begin.	These digital reading tools help students engage and understand the unique aspects of screen reading, as well as the particular comprehension abilities and knowledge needed for screen reading.
Hodgson 2010	Advocate use of online software to ease cognitive over-load, teach specific digital reading skills	Recommendations: (1) install online software to prevent distraction (e.g., Readability, Adblock Plus), (2) summarize information into "meaningful chunks," (3) scan for keywords and phrases, (4) contemplate hyperlinks before clicking on them, and (5) determine a logical and clear navigational path.	The online software removes parts of digital text that may distract readers and transforms it into something that looks more like print—the less distraction, the more likely comprehension will be stronger.

Appendix 1 (*continued*)

Source	Pedagogical Approach	Digital Reading Tools and Strategies	Purpose
			Digital reading skills help students gain knowledge about unique properties of digital texts and how to engage with them for strong comprehension.
Hayles 2010	Teach three reading strategies that assist in print and screen reading	*Close reading*: (1) work with textual passages, looking closely at language and meaning; and (2) interpret texts. *Hyperreading* ("reader-directed, screen-based, computer assisted reading"; Sosnoski 1999: 72): (1) filter by keywords; (2) skim; (3) peck (pull out a few items from a larger text); (4) juxtapose (engage with several open windows at once; and (5) scan (read quickly to identify items of interest). *Machine reading* (informed by Moretti's concept of "distant reading"): use online software (e.g., Wordle word clouds that display word-frequency graphics) to identify patterns in texts.	These three strategies offer students a range of reading practices that often overlap and can be used together.
Kirsch-enbaum 2007	Use visual classification software (e.g., NORA) and prediction systems	Students install online software and use it to identify patterns in digital text	Teaching students how to "not read" is essential in the digital world; the software lets readers look at something in its entirety and identity

(continued)

Appendix 1: Digital Reading Toolbox Chart (*continued*)

Source	Pedagogical Approach	Digital Reading Tools and Strategies	Purpose
			patterns, which leads to comprehension.
Rodrigue (as outlined in this article)	Teach genre awareness	Students learn to draw on genre awareness (an understanding of multimodality, recurrent reading practices, and the nature of genres as interactive and rhetorical) when engaging with a digital text	This approach helps students create customized digital reading plans that have strong potential to strengthen comprehension of digital texts.

Notes

1. This research was the pilot study for what has come to be known as the Citation Project, a large-scale qualitative research project that explores how college students use sources at various institutions around the country.

2. We are not the only researchers that have noted the possible connection between reading practices and plagiarism. In "Reading across the Curriculum as the Key to Student Success" (2007), Alice Horning writes, "I believe that true plagiarism is fundamentally a reading problem, not a writing problem or a problem of morals or ethics. . . . Plagiarism is essentially a by-product of students' inability to read."

3. Genre theorists have provided various definitions of *genre awareness*. The definition I provide here, I argue, is most productive when thinking about genre awareness in relation to digital reading practices.

4. Vandendorpe 2008 draws on Marc Heyer's (1986) definition of three reading modes: grazing, browsing, and hunting.

5. All student names have been changed to protect their identity.

6. Because the concept of multimodality is complex, instructors should not expect students to master it in one to two course periods. The analysis and production of multimodal texts should reoccur often throughout the course.

7. The exploration of what hyperlinks do, why they are used, and how they function in a digital text is valuable for not only helping students comprehend what they are reading but also helping them understand themselves as text designers of meaning. Guiding students in understanding the function of hyperlinks within various genres enables them to sharpen important comprehension abilities for screen reading, including

prediction, inference, and synthesis. Hyperlink knowledge also helps readers determine whether or not they want to engage with the hyperlinks to understand the digital text.

8. For the first part of this activity, I asked students to read an e-mail that I had written and sent them prior to class. For the second part, I asked them to read a friend's comment on any post on their personal Facebook page.

9. Hayles would identify this strategy as "juxtaposing" (2010: 66).

References

ACT, Inc. 2006. *Reading between the Lines: What the ACT Reveals about College Readiness in Reading.* www.act.org/research/policymakers/pdf/reading_report.pdf.

Carr, Nicholas. 2008. "Is Google Making Us Stupid?" *Atlantic*, July/August. www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/.

Coiro, Julie. 2005. "Making Sense of Online Text." *Reading Comprehension* 63, no. 3: 30–35.

Devitt, Amy J. 2008. *Writing Genres.* Carbondale: Southern Illinois University Press.

Dirk, Kerry. 2010. "Navigating Genres." *Writing Spaces: Readings on Writing* 1: 249–62.

Doctorow, Cory. 2007. "You *Do* Like Reading Off a Computer Screen." *Locus Magazine*, March. www.locusmag.com/Features/2007/03/cory-doctorow-you-do-like-reading-off.html.

Flood, Alison. 2014. "Readers Absorb Less on Kindles Than on Paper, Study Finds." *Guardian*, 19 August. www.theguardian.com/books/2014/aug/19/readers-absorb-less-kindles-paper-study-plot-ereader-digitisation.

Hayles, N. Katherine. 2010. "How We Read: Close, Hyper, Machine." *ADE Bulletin* 150: 62–79.

Heyer, Marc. 1986. "The Creative Challenge of CD-ROM." In *CD-ROM the New Papyrus: The Current and Future State of the Art*, ed. Steve Lambert and Suzanne Ropiequet, 347–57. Redmond, WA: Microsoft Press.

Hicks, Troy. 2011. "Thoughts on Digital Reading." *Digital Writing, Digital Teaching: Integrating New Literacies into the Teaching of Writing*, 6 October. hickstro.org/2011/10/06/some-thoughts-on-digital-reading/.

Hodgson, Kevin. 2010. "Strategies for Online Reading Comprehension." *Instructify*, 29 November. www.learnnc.org/lp/pages/6958?ref=instructify.

Horning, Alice. 2007. "Reading across the Curriculum as the Key to Student Success." *Across the Disciplines* 4. wac.colostate.edu/atd/articles/horning2007.cfm.

Howard, Rebecca Moore, Tricia Serviss, and Tanya K. Rodrigue. 2010. "Writing from Sources, Writing from Sentences." *Writing & Pedagogy* 2, no. 2: 177–92.

Jackson, Shelley. 1997. *My Body—a Wunderkammer.* www.altx.com/thebody/.

Joliffe, David, and Allison Harl. 2008. "Texts of Our Institutional Lives: Studying the 'Reading Transition' from High School to College: What Are Our Students Reading and Why?" *College English* 70, no. 6: 599–617.

Keller, Daniel. 2007. "Thinking Rhetorically." In *Multimodal Composition: Resources for Teachers*, ed. Cynthia L. Selfe, 49–64. Cresswell, NJ: Hampton Press.

Kirschenbaum, Mathew. 2007. "The Remaking of Reading: Data Mining and the Digital Humanities." Paper presented at the National Science Foundation Symposium on Next Generation of Data Mining and Cyber-Enabled Discovery for Innovation, University of Maryland, Baltimore, October. www.csee.umbc.edu/~hillol/NGDM07 /abstracts/talks/MKirschenbaum.pdf.

Kress, Gunther. 2009. "What Is a Mode?" In *The Routledge Handbook of Multimodal Analysis*, ed. Carey Jewitt, 54–67. New York: Routledge.

Landow, George. 1992. *Hypertext 2.0.* Baltimore: Johns Hopkins University Press.

Leu, Donald J., Julie Coiro, Jill Castek, Douglas K. Hartman, Laurie A. Henry, and David Reinking. 2008. "Research on Instruction and Assessment in the New Literacies of Online Reading Comprehension." In *Comprehension Instruction: Research-Based Best Practice*, 2nd ed., ed. Cathy Collins Block and Sherri Parris, 321–46. New York: Guilford Press.

Leu, Donald J., Charles Kinzer, and Julie Coiro. 2004. "Toward a Theory of New Literacies Emerging from the Internet and Other Information and Communication Technologies." In *Theoretical Models and Processes of Reading*, 5th ed., ed. Robert Ruddell and Norman Unrau, 1568–1611. Newark, DE: International Reading Association.

Mangen, Anne, Bente R. Walgermo, and Kolbjorn Bronnick. 2013. "Reading Linear Texts on Paper versus Computer Screen: Effects on Reading Comprehension." *International Journal of Educational Research* 58: 61–68.

Miller, Carolyn R. 1984. "Genre as Social Action." *Quarterly Journal of Speech* 70: 151–67.

Ming-der, Wu, and Shih-chuan Chen. 2011. "Graduate Students' Usage of and Attitudes towards E-Books: Experiences from Taiwan." *Program* 45, no. 3: 294–307.

Moretti, Franco. 2005. *Graphs, Maps, Trees: Abstract Models for Literary Theory.* New York: Verso.

National Council on the Teaching of English, Commission on Reading. 2004. "A Call to Action: What We Know about Adolescent Literacy and Ways to Support Teachers in Meeting Students' Needs." www.ncte.org/positions/statements/adolescentliteracy.

National Endowment for the Arts. 2007. *To Read or Not to Read: A Question of National Consequence.* arts.gov/sites/default/files/ToRead.pdf.

New London Group. 2000. "A Pedagogy of Multiliteracies: Designing Social Futures." In *Multiliteracies: Literacy Learning and the Design of Social Futures*, ed. Bill Cope and Mary Kalantzis, 9–38. London: Routledge.

Nicholas, Arlene, and John Lewis. 2008. "Millennial Attitudes toward Books and E-books." *International Journal of the Book* 5, no. 2: 81–92.

Paré, Anthony, and Graham Smart. 1994. "Observing Genres in Action: Towards a Research Methodology." In *Genre and the New Rhetoric*, ed. Aviva Freedman and Peter Medway, 146–54. London: Taylor and Francis.

Payne, Stephen, and William Reader. 2006. "Constructing Structure Maps of Multiple On-line Texts." *International Journal of Human-Computer Studies* 64, no. 5: 461–74.

Project Information Literacy. 2011. "Russ Poldrack: May I Have Your Attention? The Brain, Multitasking, and Information Overload." *Smart Talks*, 12 October. projectinfolit.org /smart-talks/item/109-russell-poldrack.

Ramirez Leyva, Elsa Margarita. 2003. "The Impact on the Internet on the Reading and Information Practices of a University Student Community: The Case of UNAM." *New Review of Libraries and Lifelong Learning* 4, no. 1: 137–57.

RAND Reading Study Group. 2002. *Reading for Understanding: Toward an R&D Program in Reading Comprehension*. www.rand.org/content/dam/rand/pubs/monograph _reports/2005/MR1465.pdf.

Sosnoski, James. 1999. "Hyper-readers and Their Reading Engines." In *Passions, Pedagogies, and Twenty-First Century Technologies*, ed. Gail E. Hawisher and Cynthia L. Self, 161–77. Logan: Utah State University Press.

Vandendorpe, Christian. 2008. "Reading on Screen: The New Media Sphere." In *A Companion to Digital Literary Studies*, ed. Susan Schreibman and Ray Siemens. Oxford: Blackwell. www.digitalhumanities.org/companion/view?docId=blackwell /9781405148641/9781405148641.xml&chunk.id=ss1-5-4.

Wu, Ming-der, and Shih-chuan Chen. 2011. "Graduate Students' Usage of and Attitudes towards E-books: Experiences from Taiwan." *Program: Electronic Library and Information Systems* 45, no. 3: 294–307.