

**Note: This material comes from a larger project that investigates how students read across media, at home and at school, during the transition from high school to college. The students in this chapter were interviewed and observed at school in earlier chapters of the book. The interviews and observations in this chapter address reading at home.**

## **Chapter 4**

### **Directing Attention: Multitasking, Foraging, Oscillating.**

David has a multimedia coffee table. On the couch, he's within reach of a cell phone, iPod, Superman comic, *Car and Driver* magazine, the newspaper, John Grisham's *Bleachers*, an Xbox wireless controller, and the remote to the big-screen TV. I can barely see the glass top of the table underneath the layers of media. As we talk about his reading practices, ESPN mutely flashes text and statistics and talking heads on TV, his cell phone vibrates on the glass countertop three times with text messages from friends, and he plays the Internet game *Fish Eat Fish* on his laptop, which has web browsers open for Addicting Games, eBay, and ESPN. David tells me that *Fish Eat Fish* can be played in a few minutes and does not require any significant investment, so he can abandon it at any time to restore eBay's screen for the latest bid or ESPN's screen for more information on anything the television broadcast failed to provide. He had turned off the Instant Messenger (IM) screens upon my arrival, saying that they would have been too distracting during our interview.

Looking at his room, I noticed that David has nearly every conceivable medium at his fingertips. I also noted that these media competed for his attention. In the midst of this media-

saturated room, he alternates his attention from one medium and genre to another, but what happens to information when it arrives in such a tidal flow?

Because of situations like the one I just described, scholars have become interested in “attention economics,” arguing that when information abounds, what is most valuable is attention. In 1971, economist Herbert Simon claimed that “a wealth of information creates a poverty of attention and a need to allocate attention efficiently among the overabundance of information sources that might consume it” (40-1). Of course, Simon made this statement two decades before 24-hour TV news and the World Wide Web, and three decades before 500-channel digital cable, ubiquitous cell phones, and millions of blogs and billions of web pages. More recently, Richard Lanham has argued that all of this information requires better filters, with rhetoric being one of the most effective filters. Lanham claims that rhetoricians have a special place in this attention economy because rhetoric is primarily concerned with gaining and directing attention (xii-xiii). In a similar vein, Colin Lankshear and Michele Knobel explain how new literacy practices can be used to gain attention. In these turns toward attention, however, the issue of how readers direct and spend their attention has been overlooked.

This issue is central to composition classrooms, which tend to value slow, sustained reading. Whether a student is reading a short story or an essay, each text is an unfolding of meaning constructed as the reader carefully attends to each paragraph and page. Classroom discussions typically depend upon this kind of reading; otherwise, silence fills the room after a few students offer a response to the “gist” of the reading. Effective student essays also grow out of that focused reading, with literary and rhetorical analyses depending upon precise attention to detail: shades of meaning, contextual consideration, and connections of parts to whole.

Yet, what are we as teachers leaving out if we see this kind of reading as the only valid one—or simply as the best kind of reading? It seems irresponsible not to think more broadly about many forms of reading and how students could benefit from them. In 1999, after recognizing differences between online and print reading, James Sosnoski wrote that compositionists should pursue a pedagogical praxis for “hyper-reading,” but worried that teachers would resist these new forms of reading because of a perceived lack of “coherence, substance, and depth” (173). Given how little attention digital reading has received in composition, it seems Sosnoski’s fears were justified. In Scott DeWitt’s work on teaching hypertext reading and writing, he observes that his students’ Web reading tended toward a fleeting style that allowed for momentary reflections on texts and hardly any connections between texts (140-45). DeWitt offers a “reflective model” of hypertext reading, which asks students to write reflections on the websites they visit, slowly accumulating summaries and connections. Although the reflective model is one good approach, this book’s argument is that readers need to be more versatile, able to use a repertoire of reading strategies that vary in speed and depth. Slow, fast, shallow, and deep reading—and all of the degrees in between—are shaped by choices of attention.

This chapter focuses on three case studies of attention. David, Tim, and Diana allowed me into their homes, and I observed and interviewed them as they read online. The issue of multitasking comes up with David’s case study; in his room, he switches among various tasks and texts, devoting different degrees of attention to each as he does so. From my observations of David, I develop a pedagogical heuristic for teaching multitasked reading. I also complicate popular notions that multitasking is bad for learning. In turning to Diana and Tim, I am more interested in how they read across websites, using forms of reading that I describe as foraging

and oscillating. As the chapter develops, I also complicate the binaries of attention/distraction and hyper/deep attention, moving toward a more nuanced view.

## **Multitasking**

A significant aspect of modern reading is multitasking, which allows people to manage more than one task simultaneously or through alternate task switching (Lin, Robertson, and Lee). Multitasking isn't a new activity, but what makes it significant today is the degree to which it now happens and the complex technologies that enable and promote it. David's room is a fine example of this, and it may not be that unusual. According to a 2009 Kaiser Family Foundation Study, 8- to 18-year-olds use media 7½ hours in a day, using multiple media simultaneously to allow them to “pack a total of 10 hours and 45 minutes worth of media content into those daily 7½ hours” (Rideout, Foehr, and Roberts 2). In the early 2000s, David's multitasking might have seemed like another example of youthful media wizardry; by 2010, however, an observer might have been concerned about multitasking's negative effects on David's brain.

The popular story about multitasking has changed over the past two decades. Once attached to the computer's ability to perform parallel processing, multitasking became a buzzword describing what humans do with the power of technology. Corporate America embraced it as a vague job skill included in ads and résumés (Rosen). As cell phones, handheld games, and video games became more sophisticated, the word became attached to youths' abilities. The word *multitasking* had and still conveys a sense of power, sounding scientific and mechanical. With *task* buried in the middle, the word exudes the sense of an important achievement. The word creates images of cell phones, shifting screens, and of connected, option-loaded lives. But an alternate view emerged, largely through concerns over cell phones and

distracted driving; most recently, multitasking's distracting nature has been linked to its possible negative effects on how students focus on reading. The connected, option-loaded lives have become distracted, overloaded lives (Carr, "Is," *Shallows*). "The young are so good at multitasking" turned into "No one is very good at multitasking, and it's probably bad for us."

The scientific studies on multitasking seem resolute on this point: people generally don't do well when they do more than one task at a time or alternate between tasks (Dux et al). This general assessment has become part of the cultural conversation about technology use in the classroom, the workplace, and at home. However, multitasking isn't so simple as to deserve a blanket condemnation; one reason is the word *task*: not every task carries the same cognitive load. For instance, we can walk and talk without much difficulty because these tasks are routine; however, simultaneously reading a sentence and listening to a different sentence can be nearly impossible (Salvucci and Taatgen 101). The difficulty of each task influences the cognitive load, and the task's difficulty is influenced by purpose: we might assume that reading a celebrity gossip magazine while watching a sitcom would be less difficult than reading a science magazine while watching a complex drama; however, this assumption becomes complicated if the purpose of reading the gossip magazine is to rhetorically analyze it. We can speak in general terms about how good or bad people are at multitasking, but that does not seem to serve us well when understanding situational, purpose-driven acts of literacy. Our teaching might be better served by realizing that not all multitasking is equal.

Why is this important? As I argued in Chapter 1, if we don't engage with reading research and pedagogy at a more sophisticated level, we might accept popular stories about reading decline and feel helpless as teachers; the same applies to our understanding of reading when it comes to popular conceptions of attention and multitasking. Most of the scholarship on

multitasking bears little relation to our concerns as teachers of reading and writing.<sup>1</sup> And most popular accounts of these studies conflate the many factors involved, leading to simple, generic conclusions that “Multitasking is bad” or that “Digital reading is less effective than print-based reading.”<sup>2</sup> Composition’s investigation into and increased awareness of multitasking is crucial in at least two regards. First, multimodal composition often entails the use of technologies—image editing programs, video software, audio software—that demand a high level of multitasking. My methods of teaching multimodal composition have been improved by the extra attention I’ve given to multitasking. Second, online reading is a daily experience for most students, and it’s a growing part of teaching writing. I generally consider online reading to be a form of multitasking: hyperlinks within the text and within menus offer alternative tasks; pop-ups, animations, and videos redirect attention and purpose; and the web browser that surrounds the text is a complicated text in its own right, with navigational functions being the most obvious tasks.

By observing David’s multitasking, I could tease apart some of the entangled factors within his multitasking and see their relationships. Before I saw his room, I had not planned on studying attention and multitasking. The exploratory nature of this study allowed me to adapt to the situation; although what follows is nowhere near as precise as a planned study under laboratory conditions, it has the value of being closer to a real situation, with David’s purposes for reading being his own. Out of all of the participants, David seemed to be the most comfortable, not changing much about his behavior because of my presence. Instead, as described in the opening scene, he continued various tasks. I took notes and audiorecorded the interview as I observed and asked questions about what he was doing. The home interview with David took over an hour, and he multitasked during all but ten minutes of it.

Reviewing the transcript and my notes, I isolated five significant factors in David's multitasking:

**Task:** specific activity, includes purpose and context

**Tactic:** reading strategy

**Text:** message, includes the genre and medium

**Technology:** device and interface used to access the text; includes search engines and other on-screen interfaces.

**Training:** experience and knowledge of the other four factors.

Why these five? Each is essential to our concerns as teachers of reading and writing, especially with the inclusion of the reading tactic/strategy, which often goes unaddressed in studies of multitasking/hypertext reading (Salmeron et al.). Also, I wanted to create a pedagogical heuristic that would be accurate but flexible. To break down and reduce each category further would turn the heuristic into a cumbersome checklist. This section is meant to be exploratory and suggestive, not exhaustive, of how these factors affected David's reading. From this observation, I have isolated two significant multitasking events, which I describe below with transcript excerpts.

In the first multitasking event, David switched between the online game *Fish Eat Fish* and eBay, where he was checking a bid status. *Fish Eat Fish* filled about one-third of the laptop screen. The game was simple, which David explained to me as he played:

**David:** It's a dumb little game, but it's fun. You play that little fish, and you have to eat the other fish and food pellets, which makes you bigger. The more you eat, the bigger you get. And the bigger fish eat you. Avoid them. And...that's about it.

**Interviewer:** You play this a lot? You also play *World of Warcraft*, right?

**David:** Yeah, like, this is really easy to play. And it doesn't matter if I lose. Like that. [His fish gets eaten; he has two lives left in the game. His next fish/life appears. He switches over to eBay, reads the screen, and switches back to *Fish* in about ten seconds. We both look to the top left corner of the screen to see whether he lost another life in the game while he was on eBay—he didn't. He resumes playing].

**Interviewer:** And *Warcraft* is more demanding. You can't flip between screens with that kind of playing.

**David:** When I play that game [*Warcraft*], then I'm really playing that. You need to focus with that game. I play this when I don't care, if I have other stuff to do. See how big he gets? But I can't eat those bigger ones yet. [His fish still alive and much bigger now, David switches over to eBay and checks on his bid. He's back to the game within ten seconds.]

**Interviewer:** How long on your bid? [I saw the screen, but didn't locate the information on it.]

**David:** About ten minutes. I'm not going to get it, not at the rate others are bidding. Price is getting too high. I have some other bids on some car parts, but I have about thirty minutes and another hour on those.

**Interviewer:** Do you do that often, on eBay?

**David:** For my Dad. I help him restore old cars. He says that I'm better at this [online] stuff, so I do the ordering. I've also bought my own stuff on there, and I'm planning on selling my comic book collection for extra money, for college.

In this event, which continued for seven more minutes, David switched between the text *Fish Eat Fish* and the text eBay. When switching to the *Fish* screen, his task was to locate his fish character, read the status of the character (the life and growth information on the top left and



right of the screen, respectively), and to move the character with the arrow keys. The basic design of the game is similar to other video games, which bolstered David's familiarity with it. When switching to the eBay text, David's task was to figure out the time left and the current bid. David's tactic involved scanning to quickly locate the relevant information, sometimes hitting the refresh button if the information did not look current. These split-second readings and judgments impressed me because I had a hard time keeping up with David, who did it all seamlessly and never faltered during the conversation. Unfamiliar with both the game and eBay, I oriented less quickly with each screen change. David's extensive experience—his training—with the genres, the specific sites, and the interfaces enabled him to do this so well. This observation gains more substance with the next event.

In this event, David's multitasking becomes more complicated. In addition to playing the game and checking bid updates, he looks up information on ESPN.com and a university webpage. He is still playing *Fish* as we discuss his view that he is a "bad reader":

**David:** I don't know if I need tutoring on speed reading or a better vocabulary, but I just don't...I'm not a good reader.

**Interviewer:** What do your teachers say about your reading?

**David:** You know. 'I could do better. Not working to my potential.' That kind of thing. [David looks repeatedly at the silent ESPN on TV and then back at *Fish* during this.]

**Interviewer:** Is it with all reading? That is, do you...?

**David:** Nah, just school reading. I don't do well on tests, and I don't always see the symbolism in English class. [David switches to ESPN.com, looks at the Scorebox at the top of the screen,

which rotates through various game scores. Waiting for the scores to rotate takes about fifteen seconds. He then switches back to *Fish* and has to start over.]

**Interviewer:** Do you go to that site [ESPN] often?

**David:** Not much. Mainly just today. Been waiting for some baseball [scores], but they haven't been on TV, so I check sometimes. Anyway, I don't have a problem reading. I'm not dyslexic or anything like that. I just don't always get it.

**Interviewer:** So, it's not that you can't get through the readings. You just don't understand them for class, for how you're expected to read them?

**David:** I get confused by Shakespeare. He...he confuses me. The way he wrote. Stuff like that. But if it looks even remotely, you know, like today's language, then I don't get confused. But I still don't see a lot of the hidden meanings. [David switches to ESPN.com and scrolls down the page, then back up the page and clicks a Major League Baseball link. He scrolls down that page, but doesn't find the information, and returns to the *Fish* game. Seeing that his fish died, he switches to eBay, checks his bids, and then returns to his game. All of this switching and reading is fluid.]

**Interviewer:** I had trouble with some of the hidden meanings in English, too. [Long dialogue for two minutes; David continues to play the game, intermittently glancing at ESPN on TV and checking eBay bids; at one point, he finds the baseball scores on the ESPN.com. Then, he opens a window for the university website.]

**David:** Yeah, I hope college is different. If not, movies lied to me. [Laughs.] Okay, why...?

[David clicks on a "Financial Aid" link, slowly scrolls down the page. Quickly scrolls to the top

and pauses before clicking a “Loans” link. Scrolls down. He looks at the screen for about a minute.]

**Interviewer:** What are you doing now?

**David:** I’m not sure I understood...[Reads the screen for another minute. Scrolls up, types “financial aid letter help” in the Search box. Scans the results. Returns to the main financial aid page.] That didn’t help. I’ll have to talk to...call somebody about that. [He switches to *Fish*, plays for about a minute, and then switches back to the financial aid page. He reads for about thirty seconds, clicks back to the main portal, and scans the available links. He gives up, returns to the game.] That’s okay. I’ll just call Monday.

**Interviewer:** Was that your first time visiting the school website?

**David:** No, I’ve gone there. Not much. It’s hard to...that search engine sucks.

**Interviewer:** You don’t visit the ESPN site much either. Why was it so easy to navigate?

**David:** [After a brief pause, he points at ESPN on TV.] Because it looks so much like the TV.

It did look like the TV. On SportsCenter, multiple windows of information floated around the center of the screen, scores of games rolled at the bottom of the screen (sometimes at the top), and text and graphics appeared and disappeared—the screen refreshed with new information and dissolved the old. The website and the TV screen resembled each other in numerous ways; this was remediation at work (Bolter and Grusin), creating a sense of familiarity for David as he navigated the ESPN site. This familiarity happens more often than we consciously recognize, I think, because we like to imagine the web as a place of originality and creativity. However, when we easily navigate a new website, it’s not only due to effective design, but also to remediation: we’ve seen something like it before. Most video sites resemble

YouTube; most discussion forums resemble each other; people transitioned from MySpace to Facebook easily because each site uses similar templates. Kristin Arola observes that more of the web is moving toward this kind of easy design with the “rise of the template”; she points to some troubling effects, including the concern that students may pay less critical and rhetorical attention to design issues; Arola has valid concerns, but template websites (like familiar genres) seem to make for easier reading by presenting information in familiar ways. Although David did not visit ESPN.com much, remediation added to his training, his storehouse of experience.

Rapidly switching between tasks, David was multitasking, and he handled it well. He probably would have performed better on the game had he not been switching to other tasks, but that misses the point: he chose the game because it was inconsequential, which reflects an awareness of priorities. He maintained ongoing concerns with eBay bids and baseball scores; with the former, he quickly discerned that the rate of bidding would soon put the item beyond his price range. David stumbled with the university website because he lacked experience with the task and the text. Regarding the task, he didn’t understand why he received less financial aid than expected; the vague nature of the problem and his fuzzy understanding of financial aid hampered his search. As a text, the website offered so much unrelated information that David felt overwhelmed. He did not know how to deploy reading tactics that would help him find the information, so he relied on skimming and scanning; when he seemed to read in a more sustained way, he still did not find a solution. Also, in what I would consider a technological factor, he was unfamiliar with the university search engine, expecting it to be as helpful and as easy to use as Google.

These multitasking events illustrate the importance of training and the value of teaching digital reading. David did well within the range of his usual experiences, but he struggled outside

of that comfort zone; reading the university website was so cognitively challenging that his part of the conversation faltered for the first time. Assumptions that teens have a kind of all-encompassing digital expertise can lead to questionable pedagogies. I have fallen into this trap. For online research, I ask students to switch between multiple websites and to take notes on paper. When I assumed digital expertise among students, I presented research strategies and examples without much context. Students got lost, especially when switching between sites. They didn't understand how to deploy strategies in certain situations. Students failed to develop a systematic way to multitask for research purposes. Frustrated students and a bewildered teacher resulted from these experiences. I later realized that I should have provided more details on how and why library websites and popular search engines work the way they do, especially in the students' specific research contexts; I also should have demonstrated how certain web browser functions can assist their research. I have similarly learned to incorporate more technical aspects into multimodal pedagogy. This teaching of functional literacy, Stuart Selber argues, is necessary in the digital age. Selber states that literacy scholars are right to reject functional literacy as a basic set of skills divorced from social contexts; not only is it bad pedagogy, but the simple view of literacy has tended to reinforce the "economic, cultural, and political status quo" (32). However, he argues that "to paint functional literacy with the broad brush of repression misses the fact that functional literacy is a necessary if not sufficient condition of all other forms of literacy" (33). Helping students understand and use technological resources can influence the uses of other literacies.

The kind of teaching that Selber and I have in mind is not merely technical. For Selber, functional literacy is one part of a "multiliteracies program" that also includes critical and rhetorical literacies (35). The pedagogical strategies I develop in the book's conclusion also

reflect other facets of literacy. More specifically, the five factors of multitasking—task, text, tactic, technology, and training—serve as a heuristic that can help teachers and students multitask in complex digital environments.

### **Controlling Speed and Depth in Reading**

David's multitasking is one lens on how attention is being used. Tim and Diana offer another interesting view of attention, especially in relation to the earlier discussion about the pedagogical value of slow, sustained reading. Most of the reading they do involves skimming and scanning, mixed with some periods of more sustained reading. As they read in these ways, Tim and Diana performed the kinds of moves we want from composition students: reading for invention, analysis, evaluation, and synthesis.

These observations and interviews took place in Diana's home and Tim's home. With the home observations, I wanted to get a "lived-in" sense of their literacy practices. I hoped that the participants would say more about their magazines, books, or computers if those literacy objects were nearby and that they would talk about their literacies differently when outside of the school environment (Pahl and Roswell). As I stated earlier, David was the only participant who seemed comfortable enough to continue his usual habits. Diana and Tim were less comfortable, each leading me to the dining room table for the same kind of interview we did in the school library (see Chapter 2).

Eventually, Tim led me through his house, talking about literacy objects—books in the living room, comic books stored in the basement, the computer in his room—and then demonstrating some of his online reading practices. Diana and I remained in the dining room,

and she brought a laptop to the table. Diana and Tim demonstrated and described specific kinds of online reading, during which I asked questions, recorded audio, and took field notes.

Tim liked playing *World of Warcraft* (WOW). To him, the Massively Multiplayer Online Role-Playing Game (MMORPG) seemed as close as he could get to an interactive version of *Lord of the Rings*. He also enjoyed using paint programs to create images of characters for WOW and other MMORPGs. When Tim wanted to learn more, he visited WOW forum art threads and fantasy art forums, used Google image searches, and played the game (to study the game's art). In this research, Tim was "just getting a sense of what's out there, what other people do." When asked how long he normally spent on these sites, he responded: "Not long, but it depends. Some sites, less than a minute. But if I found cool examples, I would look at them—or interesting critiques—then I would look at that for a long time."

After Tim described his goals for this type of online reading, I asked about some of the specific websites and what he usually types into search engines, which then led to a demonstration on his computer.

**Tim:** Well, I usually play the game for a while, but you probably don't want to see that. It sort of gets me in the right mood and gets me thinking about the artwork. So, say I start paying attention to elves, then I'll do a search for elf art.

**Interviewer:** And how do you do that? What do you type? Are there usual sites...?

**Tim:** Um, yeah. [On Google, types "world warcraft elf art"]. That's just one way to do it. [Scans the search results.] Let's see...

**Interviewer:** What are you thinking now? See anything interesting? And how do you--?

**Tim:** Like this Greywolf site is pretty cool. I've heard of that guy [artist] before. [Clicks on the link, scans the webpage for about one minute, looking at art and descriptions].

Tim then explained that he saw some “awesome paladin art,” which interested him and that “stuff like that sends me on another search.” After Tim found another gallery of paladin art, he looked at the page and talked about the details of particular images.

**Interviewer:** Do you take notes or anything while you’re doing this?

**Tim:** Not really, no. I kind of, like, let it sink in. I just take it in. Same thing when I read people’s critiques of *Warcraft* art. I just take it in. Now, when I go to tip and advice sites about how to do certain things with PhotoShop, then I sometimes take notes. In fact...[goes to Photoshop forum through Google search, skims webpage].

**Interviewer:** What are you doing now? This typical?

**Tim:** Yeah, I’ve seen some of this already. [Scrolls down page]. Seen it. Seen it. [Scrolling down]. Yeah. Knew that stuff.

**Interviewer:** What happens when you see something new?

Tim explained that he sometimes takes notes if the particular advice is complicated and involves multiple steps: “I like doing it while looking at the advice. Window open for the advice, [another] window open for PhotoShop. Then, I go through the steps [from the advice forum]. I learn better by doing, and I don’t have much luck holding on to notes. They get lost.” Tim showed me some *World of Warcraft* art forums and pointed out how detailed some of the responses were to art that others posted. He did this while skimming, scrolling down the page; he said, “I can get fairly deep into this stuff when it gets detailed. I’ll look at the art, then at the critiques, and then see what I think about it all.”

Tim’s reading was filled with stops and starts, with different speeds and depths. Within minutes, he could be skimming across the surface of several different websites, and then be locked onto one webpage, deep and focused. This kind of reading may not be unique to the web,



but it's more likely to be a strategy with web reading. Sosnoski argues as much when he describes the "hyper-reading" characteristic of "filtering," which involves selecting content that fits the reader's goals and experiences (165); although filtering occurs with all reading, he points out that the "inordinate" scale of information we come across online leads to "a higher degree of selectivity than the print based, un-assisted reading we do away from our terminals" (167). When picking up a book, many cues help determine whether it's worth reading—the cover, the table of contents, the index, the preface. The cues from the Web—a brief title and two-line excerpt on a search page, a web address, then the header and title of the site itself—are more difficult to make sense of quickly, especially when a Google search deposits the reader somewhere in the site, away from the home page and authorial information. Online we filter out more unnecessary, irrelevant information. Tim quickly read and dismissed some websites, slowed down for parts of others, and stopped when he came across something interesting or relevant.

This way of reading led to acts of invention for Tim. Sometimes the content of one website generated a research idea, which sent Tim to another website. Also, the details he saw in the art and in the critiques contributed to his own artwork, giving him ideas that he would not have otherwise had. He gathered useful ideas from slow and fast reading:

Sometimes I slow way down if a critique is really thoughtful, but, you know, people can blather and ramble. At that point, I just start skipping through what they say, and I find some good things, some interesting ideas. They just need to edit. That guy! [Stops scrolling. Points at screen, a long forum post]. Huge wall of words, man. I'm sure something's good in there, but he also probably likes to hear himself talk.

When I asked how he found interesting ideas from "skipping through what they say," Tim explained that certain words would indicate who was an experienced member of the community; these words were not set or predictable, but that they usually showed an extensive knowledge of the game or art, or both: "You just know when you see [the words]. They stand out." Tim's

ability to recognize how “insiders” constructed themselves in this community would make him an insider of the community’s discourse, even if he did not contribute that much to the community or read every discussion thoroughly.

Invention also occurred through his studying the discourse of the forum: “You’ve seen stupid people online, right?” Tim asked. “I don’t want to be one of them, so I watch and see what others do. What gets good reactions? What makes you seem like a newb [short for newbie/novice]? Then, I know how to say things right.” Tim noted that he did not contribute that much to the forum, but he wanted to be respectful and careful when he did. He said that, in particular, he paid attention to how people “worded their criticisms in constructive ways” and to how “much jargon they used.” Although he was not interested in the social aspect of the community, Tim put significant thought into creating an effective ethos. From this rhetorical reading, Tim also gathered content ideas about what to critique and the kinds of suggestions to offer.

Although Diana read for different purposes, she used reading strategies similar to Tim’s. Diana wasn’t a news or political enthusiast, yet she tracked news stories across media: “I would go check my Yahoo! mail, and there would be news stories. I’d hear the news on the radio, then again at night on the news.” She noticed subtle differences in coverage, which inspired her to seek out different versions of news stories. Eventually, she visited specific news sites, but she also searched for keywords from a news story to find other news sites covering the story. Some sites would cover a story more than others, and she would gather new keywords from these sites to find other examples of coverage. She did not actively seek the news story on radio or TV—“if it happens, great, but I’m not recording the news or anything”—but she checked the online versions of news magazines.

As we looked at her laptop, she opened up Yahoo! News and clicked on a random news article about the Iraq War. We both skimmed the article.

**Interviewer:** What now?

**Diana:** I might take the headline or some basic major words of the story and do a Google search. I don't know, I'll just type something [Google search for "Iraq War deaths." Scans the results.]

**Interviewer:** When you would look at these results, what do you look for?

**Diana:** Different headlines. Or if the brief description on Google makes it seem like it will be a different take [compared to the first version of the story]. So, this one [clicks on CNN.com] looks pretty long. If it were longer than the first one [on Yahoo!], then I would [scrolls down the page, highlights part of a paragraph] do that.

**Interviewer:** Ah, what are you...?

**Diana:** That [highlighted] part is what's different [compared to the first story]. So, I copy some part of it and do a search on that.

[She then copied and pasted a part of the news article, searched for it on Google, and then scrolled down the page. She looked at the two-line descriptions of the Google hits. She clicked a few links at random, scrolled down them, reading quickly.]

**Diana:** And all of this looks the same. See, it all is like the original. Nothing really different.

**Interviewer:** And what if it did seem different?

**Diana:** Um, then I would think, what site is this? Is there a reason for the difference? You know, is the story really different now? I would read the whole thing [to look] for similarities and differences and what that would imply.

**Interviewer:** How do you know or decide when to click on a particular site that gives a different take on the story?

**Diana:** [Clicks back to Google.] Sometimes the title pages or descriptions on Google [result page] sound different than the first take. And then, I click the one that sounds different, and I just scroll down, looking for similarities and differences. When a difference pops up, then I stop and read.

**Interviewer:** And then what?

**Diana:** It depends. Let's go more in, see the later hits. [On Google search results, clicks the eighth page of results. Scrolls down. Points at Web address]. See, that one is clearly a blogger. If he said something really interesting, I might Google that to see if anyone copied him, if he copied others, or anything like that. Just see where it goes. And it's not always, like, differences between websites. I've picked up on cable news leaving stuff out, really important information that makes a huge difference, and the news on the Internet will sometimes correct that.

**Interviewer:** Does the website point out that it's correcting the TV version?

**Diana:** Not really. I just piece it together. It's fun.

Like Tim's searches for fantasy art, Diana's news searches featured moments of skimming followed by sustained reading. Diana would quickly scan and exit some sites, and then slow down and focus on the next. She briefly did this slower reading in front of me, and she also explained how and when it usually happened.

Diana's reading was analytical and evaluative. She compared texts, examined differences, and sought to understand reasons for the differences. Until she talked about it with me, however, she did not appreciate or even recognize the complexity involved. The ways of reading demonstrated by Diana and Tim were far more complicated than the shallow skimming assumed by critics of online reading (Bauerlein; Carr, *Shallows*).

Tim and Diana enacted two complex forms of reading. The first I am calling *foraging*: a purposeful wandering across texts, evaluating and possibly gathering and using materials along the way. Diana gathered keywords and used them in future searches; Tim gathered art design ideas and references to websites to check out. The Web, hyperlinked and multitask-ready, promotes this kind of connected reading in ways other media do not. Certainly, TV shows, magazines, and books can inspire audiences to seek out other texts, but hyperlinks and an immediate search function make foraging far more likely on the Web.

The second form of reading is a kind of oscillation between levels of depth and rates of speed. Diana and Tim each oscillated between different levels of depth: reading at shallow levels as they quickly skimmed and scanned the screen, sometimes skipping across the surface; and reading deeply, not necessarily the whole text, maybe just a fragment. They also oscillated between rates of speed: reading quickly, then slowly; fast reading could be followed by a focusing stop.

These forms of reading helped to manage information overload. Tim knew that he would never get “to the bottom” of the available resources for his art: “You just never imagine a sign saying ‘You have reached the end of the Internet.’ I love finding new sites and new art to check out, and it seems like new ones are always popping up.” At the same time that he appreciated the endless opportunities for new information, he also found it a bit intimidating: “I do sometimes worry that I’m overlooking really crucial info. Helpful info. That if I overlooked it, I would do something ignorant.” Diana thought her hobby was “fun, but also frustrating.” She was bewildered by “how many versions of facts are out there,” but she was glad that “I at least have some control. Others accept whatever they see on screen.”

## **Hyper and Deep Attention**

What are we to make of the kinds of attention exhibited in this chapter? Katherine Hayles provides a good starting point with her essay “Hyper and Deep Attention,” in which she “explores the hypothesis that we are in the midst of a generational shift in cognitive styles that poses challenges to education at all levels, including colleges and universities” (187). The shift is from “deep” attention to “hyper” attention: deep attention is a single-object focus that is sustained; hyper attention, on the other hand, is characterized by desiring “multiple information streams” and having a “low tolerance for boredom” (187). Hayles does not malign one or hold another as an ideal. Instead, she recognizes situational advantages and disadvantages:

Deep attention is superb for solving complex problems represented in a single medium, but it comes at the price of environmental alertness and flexibility of response. Hyper attention excels at negotiating rapidly changing environments in which multiple foci compete for attention; its disadvantage is impatience with focusing for long periods on a non-interactive object such as a Victorian novel or complicated math problem. (188)

One advantage of Hayles’ depiction of these cognitive styles is that she does not position *distraction* as the opposite of *deep attention*. In response to popular depictions of digital engagement as being “wired for distraction,” Richard Miller wonders, “Am I splitting hairs to say that I see a difference between a state of distraction and mental wandering?” The distinction is useful and accurate. A distraction would involve switching focus to something unrelated to one’s purpose; a mental wandering would be open to new ideas, possibly within the existing purpose or a new one. As these participants foraged through multiple sites and multiple texts, they encountered distractions, but did not give into negative distractions. The participants attended to multiple streams of information, shifting screens and texts with a sense of purpose and a dexterous handling of tasks. They were not getting lost in chains of hyperlinks, clicking away from one idea to a new, unrelated one. Online reading certainly has its share of

distractions, but the relentless depiction of its “distracting nature” only serves to create images of people being constantly deterred from achieving anything, which is inaccurate and unhelpful.

Hayles’ distinction between “hyper” and “deep” attention can be useful, especially if perceived as a matter of degree and not a binary state; that is, hyper and deep may be best understood as polar ends on a continuum. I think the instances of oscillating by Diana and Tim show that they are combining elements from each cognitive mode of reading. Especially impressive was how Diana, familiar enough with the genre and content, could drop in the middle of a website and read critically enough to see one news story’s relation to other stories. Although participants engaged in hyper attention, they did not use it alone. Of course, these students do not represent all students. However, when asked to brainstorm about the various kinds of reading they do, many students in my classes have described a similar kind of oscillation in their reading at home and school. After examining the participants’ reading practices, I noticed it in my reading as well.

Before concluding, I want to take a moment to question a part of Hayles’ justification for the prominence of hyper attention. Hayles points to recent cognitive studies that reveal the brain as plastic, ever-changing and ever-responding, to argue that young people’s brains are simply different from older people’s: “plasticity implies that the brain’s synaptic connections are coevolving with an environment in which media consumption is a dominant factor. Children growing up in media-rich environments literally have brains wired differently from those of people who did not come to maturity under that condition” (192). Hayles is not alone in her concern about prolonged technology use. Nicholas Carr’s popular article “Is Google Making Us Stupid?” has been discussed at conferences and on Composition blogs; the article was expanded

into *The Shallows: What the Internet is Doing to Our Brains*, a book that received a lot of attention in popular venues.

Hayles, Carr, and numerous popular accounts raise concerns about media exposure that seem overstated, and they trouble me as a teacher. For instance, starting at the level of representation, the metaphor of students' brains being "wired differently" seems to pathologize technology use and student behavior: "Why aren't students reading books? Because texting and video games rewired their brains!" At the same time that these critics point to the brain's plasticity, the "wired" image sounds "hardwired," locked and unchanging due to media's power. "Wired" also creates a mechanistic image of the brain that mirrors the gadgets in youths' hands. When I come across fears of brains' being "wired differently" in numerous accounts, I get the sense of two possible wiring patterns, the "normal," book-based wiring, and the "different," digital-based wiring.<sup>3</sup> In this sense, it also sounds deterministic: increased media exposure (and that alone) will rewire brains differently from the "normal" wiring, which assumes that all media exposure besides books will rewire the brain in a similar direction/pattern. Thus, we teachers will have one kind of brain, and students will have another kind of brain. If we embrace the metaphor (or thoughtlessly adopt it) as teachers, it may only create a further sense of distance and difference between teachers and students.

The concern that extensive multitasking and prolonged Web reading will undermine complex thinking also seems overstated. The evidence for brains being "wired differently" comes largely from scans of brains under different conditions. In science journalist Jonah Lehrer's review of Carr's book, he states that Carr's argument becomes less convincing with the claim "that our mental malleability has turned us into servants of technology, our circuits reprogrammed by our gadgets." Lehrer points out, "There is little doubt that the Internet is



changing our brain. Everything changes our brain.” That is, brains change all the time. It’s important to reinforce this point by explaining that brain scans from functional magnetic resonance imaging (fMRI) experiments capture only snapshots of the brain under certain conditions (often simple conditions due to the constrained environment of the MRI machine); the experiment’s stimulus leads to neural activity, which then causes blood to rush to the related, active parts of the brain and causes a small change in the magnetic field (from the iron in the blood). Such scans can suggest what may be occurring in parts of the brain at the time, but issues of cause-and-effect and long-term effects are much harder to determine.

I don’t mean to minimize what cognitive neuroscientists do; rather, I caution non-experts against drawing conclusions about technological effects on literacy practices from such studies, especially when they are reported in popular news accounts. Non-experts have a tendency to fall for the “seductive allure” of neuroscience (Weisberg et al.), a danger more likely to happen in popular news accounts, which oversimplify and overemphasize neuroscience results. In one study of reactions to neuroscience, people tended to rank the credibility of brain research higher if it included brain scan images (McCabe and Castel); another study showed that the words “brains scans indicate” made the explanation of brain activity sound more convincing to those with little or some knowledge of neuroscience (Weisberg et al.). Rhetorician Jordynn Jack and neuroscientist L. Gregory Appelbaum advise readers outside of the neuroscience field “to be careful about applying scientific results to new contexts, such as rhetorical ones” (427); the same warning should apply to literacy education contexts as well.

Technology certainly influences how we read and think. But, as argued in Chapter 3, technology does not do this alone, and speed-driven technologies are a part of a speed-driven culture. Technologies are not isolated and neutral, but linked to a combination of institutional,

social, cultural, and political forces that shape their use (Selber 12). We might be wise to hesitate before attributing a perceived “hyper attention” to the effects of interactive media.

## **Conclusion**

In this chapter, the participants complicated simple narratives about online reading being a shallow experience. David’s multitasking was, for the most part, effective and useful. Diana and Tim engaged in readings that involved invention, interpretation, analysis, evaluation, and synthesis—crucial elements of critical reading and writing we promote as composition teachers. The oscillation I observed between speeds and depths of reading is a crucial part of the reading pedagogy I am developing throughout this book. In the next chapter, I turn to examine how the reading-writing relationship has been influenced by social media.

## Works Cited

(for Introduction and Chapter 4)

Arola, Kristin. "The Design of Web 2.0: The Rise of the Template, The Fall of Design." *Computers and Composition* 27.1 (March 2010). 4-14. Print.

Barton, David, and Mary Hamilton. *Local Literacies: Reading and Writing in One Community*. London: Routledge, 1998. Print.

Bauerlein, Mark. *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future (or, Don't Trust Anyone under 30)*. New York, NY: Jeremy P. Tarcher/Penguin, 2008. Print.

Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: MIT, 2000. Print.

Brandt, Deborah. "Accumulating Literacy: Writing and Learning to Write in the 20th Century." *College English* 57 (1995): 649-68.

Carr, Nicholas G. "Is Google Making Us Stupid?" *TheAtlantic.com*. July-Aug. 2008. Web. 24 Jan. 2010.

---. *The Shallows: What the Internet Is Doing to Our Brains*. New York: W.W. Norton, 2010. Print.

- Carroll, Lee Ann. *Rehearsing New Roles: How College Students Develop as Writers*. Carbondale: Southern Illinois UP, 2002. Print.
- Castells, Manuel. *The Rise of the Network Society*. 2nd ed. Vol. 1. Chichester, West Sussex: Wiley-Blackwell, 2010. Print.
- Denscombe, Martyn. *The Good Research Guide for Small-scale Social Research Projects*. Maidenhead: Open UP, 2007. Print.
- DeWitt, Scott Lloyd. *Writing Inventions: Identities, Technologies, Pedagogies*. Albany: State University of New York, 2001. Print.
- Dux, Paul E., Michael N. Tombu, Stephenie Harrison, Baxter P. Rogers, Frank Tong, and René Marois. "Training Improves Multitasking Performance by Increasing the Speed of Information Processing in Human Prefrontal Cortex." *Neuron* 63.1 (2009): 127-38. Print.
- Dyson, Anne Haas., and Celia Genishi. *On the Case: Approaches to Language and Literacy Research*. New York: Teachers College/NCRL, 2005. Print.
- Edmundson, Mark. *Why Read?* New York: Bloomsbury Publishing, 2004. Print.
- Ellison, Katherine E. *Fatal News: Reading and Information Overload in Early Eighteenth-century Literature*. New York: Routledge, 2006. Print.
- Faigley, Lester. "Rhetorics Fast and Slow." *Rhetorical Agendas: Political, Ethical, Spiritual*. Ed. Patricia Bizzell. Mahwah, NJ: Erlbaum, 2006. 3-9. Print.
- Gee, James. *Social Linguistics and Literacies: Ideology in Discourses*. London: Taylor and Francis, 1996. Print.
- George, Diana. "From Analysis to Design: Visual Communication in the Teaching of Writing." *CCC* 54.1 (2002): 11-39.
- Hassan, Robert. *Empires of Speed: Time and the Acceleration of Politics and Society*. Leiden: Brill, 2009. Print.
- Hayles, Katherine. "Hyper and Deep Attention: The Generational Divide in Cognitive Modes." *Profession* 13 (2007): 187-99. Print.
- Jack, Jordynn, and L. Gregory Appelbaum. "'This is Your Brain on Rhetoric': Research Directions for Neuroethorics." *Rhetoric Society Quarterly* 40.5 (2010): 411-437. Print.
- Jackson, Maggie. *Distracted: the Erosion of Attention and the Coming Dark Age*. Amherst, NY: Prometheus, 2008. Print.

- Kress, Gunther. *Literacy in the New Media Age*. London: Routledge, 2003. Print.
- Lanham, Richard A. *The Economics of Attention: Style and Substance in the Age of Information*. Chicago: University of Chicago, 2006. Print.
- Lankshear, Colin, and Michele Knobel. *New Literacies: Changing Knowledge and Classroom Learning*. Buckingham: Open University Press, 2003. Print.
- Lehrer, Jonah. "Our Cluttered Minds." *New York Times*. 3 June 2010. Web. 15 Dec. 2010.
- Lessig, Lawrence. *Remix: Making Art and Commerce Thrive in the Hybrid Economy*. New York: Penguin, 2008. Print.
- Lewin, Elisabeth. "Scott Sigler Talks about Social Media, Podcast Books and the Future of Publishing." *Podcasting News*. 22 Aug. 2008. Web. 22 Feb. 2010.
- Lillis, Theresa M. *Student Writing: Access, Regulation, Desire*. London: Routledge, 2001. Print.
- Lin, Lin, Tip Robertson, and Jennifer Lee. "Reading Performances Between Novices and Experts in Different Media Multitasking Environments." *Computers in the Schools* 26.3 (2009): 169-86. Print.
- McCabe, David P., and Alan D. Castel. "Seeing is Believing: The Effect of Brain Images on Judgments of Scientific Reasoning." *Cognition* 107 (2008): 343-352. Print.
- Miller, Richard. "Distraction versus Wandering." *text2cloud*. 17 Nov. 2010. Web. 15 Dec. 2010.
- Nunberg, Geoffrey. "Farewell to the Information Age." *The Future of the Book*. Ed. Geoffrey Nunberg. Berkeley: University of California, 1996. 103-38. Print.
- Ophir, E., C. Nass, and A. D. Wagner. "Cognitive Control in Media Multitaskers." *Proceedings of the National Academy of Sciences* 106.37 (2009): 15583-5587. Print.
- Pahl, Kate, and Jennifer Rowsell. *Artifactual Literacies: Every Object Tells a Story*. New York: Teachers College, 2010. Print.
- Porter, James E. "Intertextuality and the Discourse Community." *Rhetoric Review* 5.1 (1986): 34-47. Print.
- . "Recovering Delivery for Digital Rhetoric." *Computers & Composition* 26 (2009): 207-224.
- . "Rhetoric in (as) a Digital Economy." *Rhetorics and Technologies: New Directions in Writing and Communication*. Ed. Stuart A. Selber. Columbia, SC: U of South Carolina P, 2010. 173-197.

- Richtel, Matt. "Your Brain on Computers: Attached to Technology and Paying a Price." *New York Times*. 6 June 2010. Web. 1 Nov. 2010.
- Rideout, Victoria, Ulla Foehr, and Donald Roberts. "Generation M2: Media in the Lives of 8- to 18-Year-Olds." *The Henry J. Kaiser Family Foundation*. Jan. 2010. Web. 11 Feb. 2010.
- Ridolfo, Jim, and Dànielle Nicole DeVoss. "Composing for Recomposition: Rhetorical Velocity And Delivery." *Kairos* 13.2 (2009). Web.
- Rosen, Christine. "The Myth of Multitasking." *The New Atlantis - A Journal of Technology & Society*. 2008. Web. 1 Nov. 2010.
- Salmeron, Ladislao, Jose Canas, Walter Kintsch, and Inmaculada Fajardo. "Reading Strategies and Hypertext Comprehension." *Discourse Processes* 40.3 (2005): 171-91. Print.
- Salvucci, Dario D., and Niels A. Taatgen. "Threaded Cognition: An Integrated Theory of Concurrent Multitasking." *Psychological Review* 115.1 (2008): 101-30. Print.
- Selber, Stuart. *Multiliteracies for a Digital Age*. Carbondale: Southern Illinois UP, 2004. Print.
- Selfe, Cynthia L. "The movement of air, the breath of meaning: aurality and multimodal composing." *College Composition and Communication* 60 (2009): 616-663.
- , ed. *Multimodal Composition: Resources for Teachers*. Cresskill, NJ: Hampton, 2007. Print.
- Simon, Herbert. "Designing Organizations for an Information-rich World." *Computers, Communications and the Public Interest*. Ed. M. Greenberger. Baltimore, MD: Johns Hopkins University Press, 1971. Print. 37-72.
- Sosnoski, James. "Hyper-readers and Their Reading Engines." *Passions, Pedagogies, and 21st Century Technologies*. Ed. Gail E. Hawisher and Cynthia L. Selfe. Logan: Utah State UP, 1999. 161-77.
- Sternglass, Marilyn S. *Time to Know Them: a Longitudinal Study of Writing and Learning at the College Level*. Mahwah, NJ: Lawrence Erlbaum Associates, 1997. Print.
- Strasma, Kip. "Reading Hypertext New Media." *RAW (Reading and Writing) New Media*. Ed. Cheryl E. Ball and James Kalmbach. Cresskill, NJ: Hampton, 2010. 183-196. Print.
- Street, Brian V. *Social Literacies: Critical Approaches to Literacy in Development, Ethnography, and Education*. London: Longman, 1995. Print.
- Wallis, Claudia. "The Multitasking Generation." *TIME.com*. Web. 1 Nov. 2010.

Weisberg, Deena Skolnick, Frank C. Keil, Joshua Goodstein, Elizabeth Rawson, and Jeremy R. Gray. "The Seductive Allure of Neuroscience Explanations." *Journal of Cognitive Neuroscience* 20.3 (2008): 470-77. Print.

Westbrook, Steve. "Visual Rhetoric in a Culture of Fear: Impediments to Multimedia Production." *College English* 68.5 (2006): 457-80.

Williams, Bronwyn T. *Shimmering Literacies: Popular Culture & Reading & Writing Online*. New York: Peter Lang, 2009. Print.

Yancey, Kathleen Blake. "Made Not Only in Words: Composition in a New Key." *CCC* 56.2 (2004): 297-328.

## Notes

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<sup>1</sup> For instance, one study compared how well heavy multitaskers and light multitaskers focused under different conditions, with participants from each group trying to recall whether red rectangles on a screen had changed position after distracting information—blue rectangles—had been introduced. The tasks and the time differences between the multitaskers' successes were measured in milliseconds (Ophir, Nass, and Wagner). The light multitaskers were better at filtering the distracting information. If I were to extend such a study to the classroom, the result would be a simple, and possibly misleading, message: students who regularly multitask often get distracted easily. Let me be clear: I am not criticizing the ultimate value of such studies. Most are simply asking different disciplinary questions.

<sup>2</sup> Carr cites hypertext reading studies to illustrate the inherent distraction of the hyperlink. Without giving a full rebuttal, I think a few things should be kept in mind with respect to Carr's claims. At least two of the studies he describes are problematic as evidence: they asked participants to read hypertext fiction (an unfamiliar genre); in one of the studies, a linear story was turned into hypertext with random links. Other studies measured effective hypertext reading in various ways--comprehension, memory, and navigation. Carr wants to turn all of these studies into a generalization about the Web: "It presents information not in a carefully balanced way but as a concentration-fragmenting mishmash" (131). In their review of fifteen years of hypertext research, Salmeron et al. acknowledge uneven results about hypertext reading, but they note that reading strategies have not been controlled for in many studies.

<sup>3</sup> One example from *The New York Times*: Michael Rich, associate professor at Harvard Medical School, stated: "Their brains are rewarded not for staying on task but for jumping to the next thing." If the effects of such "rewards" persist, then brains will change: "The worry is we're raising a generation of kids in front of screens whose brains are going to be wired differently" (qtd. in Richtel). The article's title is suggestive as well: "Growing Up Digital, Wired for Distraction."

