



Short-form writing: Studying process in the context of contemporary composing technologies

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Abstract

In this article, I argue that writing studies scholarship has little understanding of what happens when writers compose the short-form, networked writing which is increasingly prevalent across the culture. Situated within the existing broad disciplinary understanding of writing and technology as cultural practices with literacy, data-based pictures of what writers are doing *in situ* with contemporary writing technologies provide an additional necessary layer of understanding to the ways writing technologies intersect with and impact what writers do with language. I argue that as a field we should also pay close, systematic attention to writers' writing processes, in particular, developing an understanding of writers composing with short-form, interactive writing. I build these arguments through analysis of examples drawn from a study of eight Facebook writers' composing processes captured in think-aloud screencast videos.

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What does *writing* mean? We live in a world where writing increasingly signifies an ever expanding variety of meaning-making practices. Whereas the word itself (“writing”) might suggest a homogenous object, even as literacy is always about something besides a graphic use of language, so is writing always *about something*. We don't just write; we write about something. As we modify “writing” with various adjectives, the implied homogeneity explodes with possibility depending on descriptions of place (school, workplace, civic, social, and bureaucratic settings), form (informal, formal, generic, elaborated, short-form), mode (linguistic, multimodal, visual), technology (interactive, distributed, synchronous or asynchronous), accessibility (private or public, archived) and audience (one writer addressing an individual or many known or unknown others). These various iterations of our field's key term, writing, change—in both small and more significant ways—the challenges to writers in terms of their rhetorical context, purpose, and audience: *bureaucratic* writing (for example, completing a hospital admissions form, texts in a human resources job file, or applications for various kinds of licenses) is quite a distinct rhetorical task as compared to *academic* writing; and even further, *informal academic* writing (weekly reflective journals, listserv postings, planning for compositions) is quite distinct from *formal academic* writing (composing final essays or research reports in which elaborated, essayist, edited American English and other formal features are expected). Though there is overlap among the types of writing, one commonality is the manipulation of a complex symbol system as a means of communicating human

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thought from one person to others.¹ The technologies through which these types of writing are created, distributed, received, read, and archived also involve the use of signs and symbols to complete the complex task of communication. Increasingly in contemporary life, writing of every type is *internetworked* writing, a term James Porter (1998) used to describe the technological environments where writing is composed and circulated: “*Internetworked* writing differs from networked writing in that it involves writing for and on the Internet. . . . [I]nternetworked writing also refers to more than simply *posting* text: It includes reading, browsing, and collecting electronic text, as *research* activities that are also types of *writing* activities” (p. 2). That is, internetworked writing refers to writing activities mediated by networked writing tools (such as internet browsers, social networking sites, synchronous video calling programs accessed through wired and wireless computers, tablets, iPads, and mobile phones). Internetworked writing is a concept that keeps our vision focused on writing in people’s lives as those lives are mediated through a variety of networked writing tools.

Writing that is digitally mediated and distributed plays a prominent and ever-present role in almost every scene of literate practice across 21st-century American culture. Gunther Kress (2003) suggested that within these changing global and multimodal contexts in which written language is situated, “writing is undergoing changes of a profound kind: in grammar and syntax, particularly at the level of the sentence, and at the level of the text/message” (p. 21). Though providing a crucial theoretical context for understanding multimodal literacy, Kress (2003) did not turn his attention to what writers do when they write. In this, he is not alone. Multimodal composing, contemporary composing technologies, and internetworked literate contexts are the central focus of computers and composition scholarship, but we have little disciplinary understanding of how writers write and how language is shaped within technologically-mediated literate practices. Although there is a core of scholars in computers and writing—and rhetoric and writing more broadly—who call attention to the fact that our students write, and write a lot, there is little scholarship that deeply attends to the practices, processes, and larger social, cultural, and technological ecology in which this writing is happening. In this article, I argue that we need richer understandings of what writers do when they compose the short-form, internetworked writing increasingly required across a variety of literate contexts. Findings about writing based on elaborated, essayist composing practices may be changing in significant ways as writers are faced with rhetorical situations involving short-form, internetworked composing. To understand the rhetorical, cognitive, and social demands short-form, internetworked writing makes on writers, I argue that we must pay attention to *writing as a process*, and that such an understanding is best arrived at through data-based, *in situ* studies of what writers are actually doing with contemporary writing technologies. Specifically, I elaborate on these arguments by, drawing on examples from multiple research projects I’ve undertaken in the last several years. The fine-grained analyses of writers’ short-form composing processes suggest the richness of the meaning-making literate practices informing what are too often dismissed as trivial texts. My hope is that future work will reveal in even further detail the complexity of composing processes using contemporary writing technologies; in this article, I turn to data from studies I’ve conducted to demonstrate the value of more data-based studies of contemporary composing processes. I argue that the complexity of composing processes suggested even by this small window onto the composing in Facebook demonstrates the importance of studying actual writers’ short-form composing processes *in situ*.

1. Composing process research and contemporary composing technologies

Since the early 1980s, computers and composition scholars have been building a complex understanding of myriad forms of technologically-mediated writing practices, composing processes, and written forms. Against the backdrop

¹ Indeed, the types of writing I’ve identified here all satisfy Marvin Diogenes and Andrea Lunsford’s definition of writing:

Writing: A technology for creating conceptual frameworks and creating, sustaining, and *per-forming* lines of thought within those frameworks, drawing from and expanding on existing conventions and genres, utilizing signs and symbols, incorporating materials drawn from multiple sources, and taking advantage of the resources of a full range of media. (as cited in Lunsford, 2006, p. 171).

Recognizing that understandings of writing and reading are changing, Diogenes and Lunsford (2006) took up the challenge posed by what they call “our vocabulary problem” and constructed this definition of writing. Although Lunsford (2006) acknowledged the difficulties of composing a definition that “does not mirror the reductiveness of current dictionary definitions” (170), the move to more expansive definitions of writing teeter a fine line between specificity and an expansiveness that fails to signify.

of forty years of changing communication technologies, composition scholars have examined writing as it is mediated by:

- word processing (Bangert-Drowns, 1993; Braine, 1997; Cochran-Smith, 1991; Haas, 1996; Torrance & Galbraith, 2008),
- e-mail (Hawisher & Moran, 1993; Kinkead, 1987; Spooner & Yancey, 1996),
- chat and discussion boards (Bump, 1990; Cooper & Selfe, 1990; Eldred & Hawisher, 1995; Faigley, 1992; Regan, 1993; Romano, 1993; Takayoshi, 1994),
- instant messaging (Haas, Carr, & Takayoshi, 2011; Haas, Takayoshi, Carr, Hudson, & Pollock 2011; Hult & Richins, 2006),
- and social networking software (Buck, 2012).²

More recently, scholars have paid a good deal of attention to the interaction of writing in multimodal composition with a variety of non-linguistic modes.³

- visual (George, 2002; Handa, 2004; Hocks, 2003; Hocks & Kendrick, 2005; Kostelnick & Hassett, 2003; Wysocki, Johnson-Eilola, Selfe, & Sirc, 2004),
- aural (Ball & Hawk, 2006; Halbritter, 2006, 2010; Selfe, 2009),
- video (Halbritter & Taylor, 2007; Selfe, Fleischer, & Wright, 2007),
- performative (Fishman, Lunsford, McGregor, & Otuteye, 2005; Jones, 2010),
- and three-dimensional (Sheridan, 2010; Shipka, 2005).⁴

At the heart of these many investigations (a suggestive sample of the wealth of scholarship available) is a deep commitment to and abiding interest in writing—the print linguistic graphic system of marks (letters, words, and other symbols) on a surface or screen. However, little scholarship (and, indeed, none of the contemporary scholarship identified) examines the composing processes involved in these uses of technologies, a consequence I trace to the social turn in composition studies. Since the social turn took hold in composition studies (indeed, took hold across disciplines), researchers expanded their lenses from looking at writing as a process, labor, or practice to look more broadly at literacy as it functions in social contexts. Amy Devitt (2011) traced the neglect of attention to writing to a specific disciplinary reaction to process research of the early eighties, as “in recent years, composition studies has left behind, for the most part, study or teaching of sentences, diction, style, organizational patterns, and cohesion, in favor of theorizing and investigating the contexts of writing” (p. 301). Similarly, I argue, a shift in focus “in favor of theorizing and investigating the contexts of writing” has left behind a sustained, aggregated examination of writing processes. This shifting disciplinary focus entailed a shift in objects of study (from individual writers and their writing processes toward the social contexts in which those individual practices were situated) as well as a shift in methods (from empirical,

² The scholarship cited here is not meant to be comprehensive but instead is meant to provide evidence of such trends in the literature.

³ Extra-linguistic” rather than “non-linguistic” may be a more appropriate descriptor of these modes as they are studied in rhetoric and composition contexts. Many scholars are interested in these “extra-linguistic” modes *as they participate in an economy of written language*. That is, they are interested in non-linguistic modes *when they are extra-linguistic* (video recording, of course, being not extra-linguistic by nature but only understood as such vis-à-vis a linguistic context).

⁴ Interestingly, calls for expanded perspectives are built on the different grounds upon which composition studies itself is founded: Cynthia Selfe (2009) grounded her arguments in the rhetorical tradition:

We need to respect the rhetorical sovereignty of young people from different backgrounds, communities, colors, and cultures, to observe and understand the rhetorical choices they are making, and to offer them new ways of making meaning, new choices, new ways of accomplishing their goals. (p. 642)

Gunther Kress (2003) grounded his in linguistic traditions, specifically in semiotics. Still others ground their arguments in literacy theories, arguing as Sean Williams (2001) did:

To be literate in the twenty-first century means possessing the skills necessary to effectively construct and comfortably navigate multiplicity, to manipulate and critique information, representations, knowledge, and arguments in multiple media from a wide range of sources, and to use multiple expressive technologies including those offered by print, visual, and digital tools. (p. 22)

data-based to more theoretical scholarship). Certainly there are exceptions to this shift in disciplinary object of study and methods (many of the studies of literacy within social contexts were ethnographic in nature), but as [Richard Haswell \(2005\)](#) argued, replicable, aggregable, data-based (RAD) scholarship has been “radically unsponsored” by composition studies’ two “most prominent professional organizations, NCTE and CCCC” (p. 200) and, based on his review of NCTE and CCCC books and journals from 1940 to 1999, he concluded that there is little professional, disciplinary support “for the apparatus needed to drive RAD research” (2005, p. 219). Haswell demonstrated that increasingly, composition studies scholars have either vilified this work or more benignly left this research to others outside the profession, borrowing from their work occasionally. The dearth of data-based scholarship—particularly RAD studies of composing processes—seems particularly problematic now in a time when technologies for composing develop, change, and get taken up so rapidly. Writing spaces are dramatically different than they were 25 years ago, and the field of writing studies has not yet in any sustained way paid close systematic attention to how this difference impacts processes and products of writing.

The shift in scholarly attention—from individuals to the social contexts shaping and in turn being shaped by writers—is, in research terms, a shift in object of study. [Beth Daniell’s \(2003\)](#) description of the social turn likewise suggested the shift in object of study as one from individual to culture:

Indeed the move in composition studies away from the individualistic and cognitive perspectives of the seventies and early eighties toward the social theories and political consciousness that prevail today was encouraged, pushed along, impelled by competing narratives of literacy. These days, literacy—the term and concept—connects composition, with its emphasis on students and classrooms, to the social, political, economic, historical, and cultural. (p. 393)

In what I read as [Daniell’s \(2003\)](#) apt description, we can see an implicit movement, too, from writing to literacy. Whereas writing might be suggestive of an individual’s meaning-making practices using alphabetic language, literacy suggests social practices (involving not just the writer herself but the larger communicative landscapes in which she circulates) and a larger communicative context (involving not just writing but also reading and the interpretation and composition of multimodal forms). After the social turn, our object of study broadened considerably, but significantly for my argument here, we moved away from a focus on individual writers in favor of understanding larger social forces as they intersected with and impacted literacy. Or as [Deborah Brandt \(1995\)](#) put it, “literacy illuminates the ways that individual acts of writing are connected to larger cultural, historical, and social and political systems” (p. 392). Although [Brandt \(1995\)](#) acknowledged that the cognitive and social are not divisible, the larger focus on cultures of literacy has continued to dominate over individual writing practices and processes. Studying individual acts of writing alone seemed insufficiently contextualized after the social turn, and individual writers’ writing processes and the written language they produced were no longer our disciplinary objects of study.

This declining focus on writing processes is particularly troublesome in an era when so much of contemporary life is being mediated through literate practices involving multiple composing technologies. Now would seem to be exactly the time to study actual writing processes and *in situ* writing practices, as writers are adapting written communication practices to computers, laptops, tablets, mobile phones, videogame consoles, and handheld videogame systems. Focusing our disciplinary gaze on the writing being produced and the composing processes of writers within the social contexts of literate practice, we might discover that writing processes and the forms of writing have changed and are changing in significant ways in an internetted world of communication. Stepping back to take a broader view, we might see the field of computers and composition as a record of the historical movement of that system of letters, words, and symbols from surface to screen as well as a record of what happens when the print linguistic alphabetic system of meaning-making is embedded within a larger, multimodal context of communication. That is, computers and composition scholars are perhaps the most appropriately and strongly positioned researchers to take on a systematic, data-based understanding of the composing processes of people working within always already technologically mediated writing environments. Computers and composition scholarship makes abundantly clear that the social uses of and environments for writing have changed in an internetted world of digital, multimodal communication, but we have yet to turn our attention in any systematic way to how those technological and social changes have affected *how writers write* with contemporary writing technologies and what happens to writing processes when they are enacted through those technologies. Writing studies needs more detailed, systematic understandings of the writing processes of writers as they compose in the technologically mediated, networked, and multimodal landscape of literacy now.

2. Methods: Facebook composing screencast think-alouds

In the following sections, I draw data from a larger study of eight Facebook writers' composing practices.⁵ Participants were asked to record a 30-minute screencast think-aloud video at a time when they were on Facebook reading and writing as they might under normal circumstances; participants conducted the think-aloud screencasts in their homes (as opposed to a study site) and e-mailed their screencasts to the researcher. Retrospective interviews of between 30 and 60 minutes were conducted shortly after the think-alouds were recorded and transcribed.⁶ The data collected for this project captures a particular historical moment in the continual evolution of Facebook's interface: while Facebook use continues to thrive, the actual features of the interface as a reading and writing space have changed since this data was collected beginning in the Spring of 2011. This is, of course, a problem faced by any Internet researcher: in the time required for study design, data collection, analysis, and final written representation, the technologies a researcher studies change, are eclipsed by newer technologies, or sometimes even disappear. Studies which focus on the technologies themselves, then, are doomed to be shoved into the dustbin of time. The impulse to make meaning and communicate using symbol systems, however, seems to only get stronger across these proliferating communication technologies. As Haas, Takayoshi, et al. (2011) concluded in their study of the language of instant messaging:

In a world where digital, multimodal communication is increasingly the standard practice, these users of IM are using the somewhat limited resources of the 68 typographic symbols on the computer keyboard to communicate visually, verbally, and bodily. The “linguistic exuberance” resulting from the creative adaptation of technological resources to an expansive understanding of textual features offers to say much to writing researchers and teachers interested in the evolution of written discourse. (p. 399)

Although the technological interfaces may change over time, the impulse to compose and the activity of writing continue to thrive across multiple technological platforms. The purpose for using these composing technologies, in other words, is shared across time and tool, even as the forms of the text and the tools for producing them are always changing. To understand more fully what writers do when they engage in new and emerging writing processes, contexts, and technologies, we need foundational, descriptive understandings of writers working through the affordances and restrictions of the composing technologies they use. As the following micro-analysis of one writer's seven-minute writing episode suggests, fine-grained, *in situ* analysis of what writers actually do when they compose can reveal the complexity behind even the briefest of utterances. The following instances of two Facebook writers' composing processes were selected from the larger study because they were representative of other acts of composing in evidence across the data set.

3. Dan dreams himself into Facebook: A truncated writing process

In his think aloud screencast video, Dan was in his Facebook account, scrolling up and down the newsfeed screen, reading friends' status updates, and having two separate chat conversations with friends while he narrated for the recording a dream he'd had in which he was “an African American woman who was wearing a terrible turquoise jumpsuit that was crushed velvet.” In the dream, Dan went to the Dollar Store, encountered a wealthy white woman who was singing karaoke, wandered the streets of New York with “this little gal pal,” and inexplicably lost his front two teeth. His spoken narrative of the dream was lengthy, detailed, and dreamlike in its stream of consciousness structure. As he narrated the dream, the cursor he has placed in the newsfeed comment box pulsed steadily, waiting for Dan to

⁵ The larger study asks “In a multi-literate, multimodal world of communication, what do writing processes look like? What do writers do when they write?” The research project began in a graduate class on research design; research team members Matt Fink, Uma Krishnan, Phil Sloan, Melinda Stephan, Yvonne Stephens, Chelsea Swick, Cynthia Vigliotti and I collected data, transcribed and organized video data, and presented on our findings at the Conference on Computers and Writing. Participants (advanced undergraduates and beginning graduate students in a variety of disciplines) were trained to conduct think-aloud protocols using a screencast program which synchronized their verbalization of their thinking with a video of their computer screen output. The data collection for this project began Spring of 2011, and thus, the data captures a particular historical moment in the continual evolution of Facebook's interface: while Facebook use continues to thrive, the actual features of the interface as a reading and writing space have since changed a great deal.

⁶ Transcription of the screencast think-alouds (both the verbalization of thinking and a systematized linguistic translation of the actions occurring on the screen for ease of coding) resulted in a data set of approximately 36,000 words.

Table 1
Dan's Textual Products and Composing Processes for Facebook Status Updates.

The textual product	The composing process
<i>had a dream he was a black women who's front teeth busted and broke and were bleeding so much I I breathe and ended up drowning in my own blood.</i>	he deletes <i>black</i> , pauses, then retypes <i>black</i> he deletes <i>sted and</i> , reads aloud what's written so far, deletes <i>bu</i> he posts the status to his FB wall

begin translating the dream experience from oral to written discourse. The final status update distilled Dan's detailed, spoken narrative of 610 words down to 28 words: "had a dream he was a black women who's [sic] front teeth broke and were bleeding so much I I [sic] breathe and ended up drowning in my own blood." Once posted, the status update was attached to the Facebook user's name so that Dan's statement appeared to his audience as the complete sentence, "Dan Hill had a dream he was a black women who's front teeth broke and were bleeding so much I I breathe and ended up drowning in my own blood." Thus prompted by the Facebook interface, which makes the user's name the subject of the statement, Dan began by referring to himself in third person (*had a dream he was a black women*) but at the conjunction *and*, he slipped into a first person construction (*I couldn't breathe*). This movement from first to third person construction suggests an interesting tension between the interface (set up for writers to speak of themselves in the third person) and the writer's purpose (revealing to his audience—through a personal statement—something that he had experienced). That is, Dan's movement from third person to first person suggests that behind the apparent simplicity of the interface and the seemingly trivial act of writing a status update, there may exist a more complex rhetorical situation involving composing choices, reflection, and decision making.

In the composition of this 28-word status update, in fact, Dan deployed composing processes associated with more elaborated, formal writing from planning to drafting to revising. At the beginning of this writing episode, Dan said "Uh, what was I going to do? I was going to update, actually, I was going to post a status about a dream I just had while I was taking a nap." Placing the cursor into the newsfeed comment box, he narrated a detailed, lengthy description of the dream he wanted to write about (see Appendix A). At the conclusion of his narrative, Dan took a deep breath and said "Um, obviously I am not going to type all of that." He paused, and while he was thinking, he received a chat message from Heather. He turned his attention to writing a reply to her, then returned his attention to the task of writing his status update and pondered, "Now how do I want to word this?" Implicitly, Dan suggested that the 610 narration was a long pre-draft that needed to be edited ("obviously I am not going to type all of that"), a pre-draft about which he needed to make writerly decisions ("Now how do I word this?"). Signaling that he was shifting mental gears with the word "Now," and with the briefest of pauses, Dan began to write (Dan's written text is in italics) (Tables 2–5):

Typical of Facebook writers in the larger study, Dan's drafting and revising processes were truncated and joined together—like Dan, every writer in the larger study drafted, read and re-read their writing as it progressed and revised or edited mid-sentence. The cursor moved forward then backward as Dan composed, re-read, assessed, and revised his written text: he wrote *he was a black*, decided to delete *black*, changed his mind and re-typed *black*. He wrote *front teeth busted*, seemed to rethink *busted* and deleted most of the word (leaving the *bu* at the beginning of the word), read aloud what he had written so far, paused, and deleted *bu*. After this assessment of the writing, he replaced *busted* with *broke* and rapidly completed the status, switching at this point from third person to first person reference (perhaps this was a consequence of the re-assessment of this writing interrupting his train of thought). As if dissatisfied with the lack of detail he had provided readers, several seconds after posting the status (and after responding in the chat window to his friend Heather), Dan commented on his own status by writing the following into the "Write a comment. . ." box below the status he had just posted:

Table 2
Dan's Textual Products and Composing Processes for Facebook Comments.

The textual product	The composing process
<i>p.s. was wearing a hot crushed velves turquoise sequenced jump suit. love it.</i>	he deletes the <i>s</i> and replaces it with a <i>t</i> before moving on he posts the status on his FB Wall

As he wrote, he explained, “I am going to add a P.S. here. I like to add P.S.es as comments because it really just staples the P.S. part of it.” The P.S. effectively acted as Dan’s comment on his own status update; Dan used the affordances of the interface to add more detail to the 28-word summary of the lengthy, detailed dream he’d had.

After posting this comment, Dan turned to the two ongoing chat conversations he’d been having with Heather and Rob. Typical for Facebook writers in the larger study, this writing episode was layered onto multiple other co-existing writing episodes in the Facebook interface taking place at the same time. As he was narrating and constructing the status update about his dream, Dan was also engaged in two separate Facebook chat conversations with Heather and Rob. Also typical of Facebook writers in the larger study, every time Dan received a Facebook notification (e.g., notifying him that Heather had posted her turn in the chat, or that someone had posted a status update), he interrupted whatever he was doing, and he turned his attention to the notification. Thus, layered onto the process of decision-making and thinking about how to put his thoughts into words was a constant yet sporadic pull for his attention. The mental juggling required by this multilayered process seemed to be a seamless characteristic of Dan’s composing process. Although his think-aloud narration gives no indication that he’d been thinking about the status update or his subsequent comment as he engaged in the written chat conversations with Heather and Rob, two minutes after posting his P. S., Dan decided to delete it, saying:

Um, actually, looking at it, I should probably not add this P.S. . . . So, I am going to take that off as it doesn’t seem to be too appropriate and ah, it is really, yeah, just not appropriate at all.

The whole writing episode, from the beginning of the dream narration to the deletion of the P.S. lasted 7 ½ minutes. In the process of composing the short piece of writing he finally posted, Dan engaged in more self-evaluation than might be expected for such a brief writing episode: narrating what he wanted to write (and thus, perhaps mentally organizing the narrative), evaluating the move from elaborated detail to pithy status update, re-reading text as he was producing it, making decisions about his word choice, deleting text and replacing it with other words, recognizing and correcting misspellings, pausing to think about the status before clicking the “share” button that would post it publicly to his Facebook wall, adding more information in the comment, and then finally, deciding that the comment was “just not appropriate at all” and deleting it.

4. Sherry shifts composing gears: Self evaluation as an omnipresent, micro-process

Sherry was in her Facebook account, engaging in a variety of literate activities: reading her newsfeed, looking through friends’ photo albums, chatting with two friends, posting a comment on her sister’s wall, and posting a comment on a friend’s wall. While she was looking at a friend’s photo album, she received a notification that her friend Felicia had sent her the following chat message: *Sherry I need to tell you something*. Exclaiming, “Oh! Felicia!” Sherry clicked on the chat notification and left the photo album behind. In the chat window that opened, Sherry wrote her response (Sherry’s written text is in italics):

Table 3
Sherry’s Textual Products and Composing Processes for Facebook Chat.

The textual product	The composing process
<i>And yes ma’am! What do you ned need to tell me besides happy i’m a jew and you love me. ☺</i>	she deletes <i>and</i> before moving on deletes <i>ned</i> deletes <i>happy</i> posts message

After posting her response and closing the chat window, Sherry speculated out loud, “She’s probably going to tell me Happy Hanukkah.” Instead, Felicia responded, *I’m not coming back next semester*. With a loud gasp, Sherry exclaimed, “She’s not coming back next semester? Ohhh!” and wrote to Felicia:

Like Dan and the other writers in the study, Sherry deleted and rewrote as she reviewed her word choice (deleting her opening *and* as well as *happy*), the spelling of the words (deleting *ned* rather than going back and inserting the missing *e*), and the punctuation of her message (replacing the three @ symbols with three exclamation points). Like other writers in the Facebook study, Sherry revealed in her think-aloud protocol that she reads, reviews, and revises

Table 4
Sherry's Textual Products and Composing Processes for Facebook Chat.

The textual product	The composing process
<i>no@@@</i>	she deletes @@@
<i>no!!! why?</i>	posts message

in-process as she composes her short pieces of writing. Sherry's composing process did not delineate drafting, reviewing, and revising into neatly and distinctly staged processes; instead, drafting, reviewing and revising were truncated into the brief writing episode.

Sherry did not write, then reread and rephrase or correct; instead, she reviewed and revised as she drafted. Contrary to our disciplinary attention to revision (and in particular, to editing) as something writers attend to after drafting, these Facebook writers layer revision and editing onto the drafting process, in effect juggling multiple writerly tasks at once. As she wrote, Sherry appeared to be paying conscious attention to each individual print-linguistic character as it appeared on the screen before her. This micro-level of attention to the unfolding written text was, in fact, evidenced by every other writer in the larger study in almost every instance of writing. This micro-processing of the text as it unfolded character by character and the accompanying revision and editing at the level of the letter is characteristic of the composing process of writers in this study. Sherry's constant reflective assessment of the text shaped her process of composing the seemingly simple and brief final text: *yes ma'am! What do you need to tell me besides i'm a jew and you love me.* © Sherry's constant awareness of the text in the process of being formed suggests, too, that she was negotiating an intended text she was set out to compose as well as the text in the process of becoming.

The micro-processing and awareness of the text evidenced in Sherry's written turns in the conversation is evidenced in writing she did outside the Facebook interface as well. Imbricated onto Sherry's process of writing within the chat with Felicia were multiple other writing episodes both inside Facebook (she composed a status update, chatted with other friends) and outside it (she e-mailed a professor, downloaded a form she completed, and began writing a school paper in a word processing program). Other writers in the larger study also moved between multiple writing spaces within Facebook (posting their own status updates; commenting on others' status updates; chatting; extending and responding to invitations) and outside Facebook (as they wrote in e-mail, Twitter, discussion boards, and web sites). These writers' composing processes suggest that composing processes learned and deployed in one technological context may be translated into other contexts, or at the least, there may be composing processes which carry across multiple types of interactive, networked writing. Like Dan and the other writers in the larger study, in her think-aloud screencast, Sherry moved seamlessly between different writing spaces (Facebook, chat space, e-mail, word processing), different audiences (friends, family, professors), and different purposes (social, academic, professional). While continuing her chat conversation with Felicia and a separate one with another friend, for example, Sherry read her university e-mail account and replied to a professor's e-mail:

Table 5
Sherry's Textual Products and Composing Processes for an E-mail to a Professor.

The textual product	The composing process
<i>Hello Professor, I woul</i>	deletes <i>oul</i>
<i>was just wondering when the workshop is at?</i>	Inserts the cursor into the e-mail before <i>I</i> .
<i>My name is Sherry Smith and I am in your Un</i>	deletes <i>Un</i>
<i>Modern US History class at 0</i>	deletes <i>0</i>
<i>Ank</i>	deletes <i>ank</i>
<i>9:15am.</i>	Inserts a blank line.
<i>Thank you, Sherry.</i>	Clicks <i>Send</i> .

As she did in the chat conversation with Felicia, Sherry wrote, reviewed, and revised in-process as she wrote to her professor. She made one largely stylistic change, replacing *would* with *was wondering*, and inserted an opening that prefaced her question with a formal introduction that identified her and her relationship to the e-mail recipient (*My name is Sherry Smith and I am in your Modern US History class at 9:15*). In these two changes, Sherry juggled two

different kinds of composing tasks—one of word choice (perhaps related to the differences *would like to know* and *was wondering* created for the tone of the writing) and one at the more global level of genre (contextualizing the writing by beginning the e-mail with an introduction to herself rather than jumping right into the question). The decisions she made about these choices took place so quickly that there was no hesitation evident in the screencast of the text’s becoming.

Immediately after sending the e-mail, Sherry jumped back into the conversation with Felicia. As these writers composed, they moved forward, gathering up into “the writing act” various discrete and layered writing tasks, continually shifting their attention. The process of juggling the different writing platforms with their varied audiences and textual conventions had a circularity to it, a process of doubling back, then moving forward. At the level of the discrete utterance, this circular propulsion was also evident as the writer moved forward in the production of her written text, shifting her attention from the global message to the formal features and back again. On the screencast video, Sherry’s composing process was characterized by a backward and forward movement—moving forward as she read the text she composed as it appeared on the screen, then backward as she reviewed, then either forward or backward again depending on whether the text was satisfactory to her goals as a writer or not. This backward and forward rhythm was reflected in every participant in the Facebook study, whether they were writing publicly or privately, on the Facebook wall or the chat space, or across the writing platforms they used (twitter, Facebook, word processing, e-mail).

Although the screencast did not record the physical body of the writers, the backward and forward movement of the screencast video and Sherry’s attention to the individual characters as they appeared in the emerging text suggests that Sherry was watching the text develop on the screen character-by-character rather than watching her hands on the keyboard (where, presumably, she would be less likely to catch every mistaken key stroke). I would venture to suggest that Sherry was watching the developing text through multiple eyes: those of herself as the text’s writer and those of the intended audience (who were real identifiable people, known to her). She tailored the formal generic features of her writing to those audiences, in fact: The e-mail satisfied well an audience’s generic expectations for a formal correspondence (among them, a greeting addressed to the recipient, a self introduction, and complete sentences with beginning capitalization and ending punctuation) just as the chat satisfied the genre of chat conversation (among them lack of beginning capitalization, humorous informal tone, and the use of emoticons and multiple punctuation). In both cases, Sherry paid explicit attention to correctness as it was defined within the specific genre she engaged, contrary to popular worry that students are increasingly letting “textese” creep into their formal academic prose (which worried pundits forecast will ruin the English language). Sherry, like the other writers in the study, was in control of her composing process and the composition, fitting each to the formal and informal writing situations and actively making conscious choices about the writing’s fit within the genre.

5. Composing short-form texts in Facebook

As these detailed accounts of two Facebook writers suggest, informing the brief and seemingly trivial written compositions posted to Facebook is a complex, fleeting, and richly rhetorical process of decision-making. By focusing our attention on the processes of composing short-form writing (as opposed to the textual short-form products), we are less likely to dismiss these writing processes as meaningless or trivial, and instead see them for what they are: complex meaning-making acts using written language symbol systems. Although Dan and Sherry’s composing processes in these brief episodes of socially networked writing certainly share many features with what we know about composing processes generally, this picture of their composing choices also suggests that constraints and affordances arising from the technological, interpersonal, and cultural contexts of short-form, socially networked writing distinguish it from other writing contexts, forms, and functions.

These writers’ processes might be understood as unfolding both vertically and horizontally.⁷ Horizontally, distinct writing tasks within and outside the Facebook interface layer onto one another (composing status updates, commenting on others’ status, chatting, e-mailing, tweeting, word processing, and posting to discussion boards). These writing

⁷ Thanks go to [Lindsay Steiner \(2013\)](#) for alerting me to the possibilities of vertical and horizontal arrangement as a way of describing the composing processes of these writers. In her dissertation study of professional graphic designers, Steiner concluded the designers’ processes of composing multimodal texts is best understood as being both vertically and horizontally structured. The imbricated, richly three-dimensional vision of professional communication processes Steiner’s dissertation provided is evocative and descriptive of composing processes across multiple technological platforms, including the composing process of writers in Facebook.

tasks occur more or less simultaneously as writers call one specific writing task to the foreground and stack the others underneath that active writing space. Writers composing in internetworked, interactive environments (and writing of all kinds is increasingly being mediated through such environments) are negotiating multiplicity in writing task, purpose, audience, and technology. They not only juggle the multiple rhetorical tasks required by one act of composing, they are juggling multiple acts of composing, moving from one to another, making decisions about where to focus their attention and shifting gears between vastly different audiences, tasks, purposes, and genre constraints. As these two writers demonstrate, there is a constant yet sporadic pull for their attention as they compose.

Vertically, writers' processes unfold in the forward and backward recursive movement described previously. Within the context of the horizontal layering of writing processes and simultaneously evolving distinct acts of composing, the recursivity of writing processes occurs at the micro-level of individual characters as they appear in the evolving text as well as at the level of the text's meaning. These two writers were aware of their texts as emerging compositions at the level of the individual character; these two writers appeared to assess each character as it emerged on the screen, making changes in the moment at the character, word, and sentence level. They returned to the text after posting it to revise, amend, and delete upon second thought. And, these negotiations with the text sometimes occurred in the background as they composed other separate texts. Multiple pieces of text were developing at the same time, as writers moved, elaborated on, and developed the individual compositions, moving between different writing tasks, negotiating the different rhetorical constraints and genre expectations of the multiple writing tasks. Behind what appeared to be trivial, brief pieces of writing was a good deal of rhetorical decision making and conscious attention to writing as a practice of meaning making.

A great deal of writing being done across the contemporary culture is short-form and interactive. Yet, we have little understanding of short-form writing regardless of whether it is formal or informal, institutionally sanctioned or social. In 1657, Blaise Pascal wrote, "I have made this [letter] longer, because I have not had the time to make it shorter." As Pascal—writing long before short forms of writing like instant messaging, texting, tweeting, Facebooking, memes, and Post Secret—suggested, shorter forms of writing present their own unique rhetorical challenges to writers. Those rhetorical challenges—negotiated by millions of writers like Dan and Sherry every day—are changing as technologies for writing are developing. In this article, I hope I have suggested that in some ways, composing processes, too, are changing in the production of short-form, interactive, socially-networked writing, and writing studies does not yet have a clear sense of what these technologies demand for writers at the level of the composing process. What are the rhetorical demands of short-form writing? What are its features? What are its processes of making meaning? Are short-form and elaborated forms of writing equivalent in terms of the rhetorical and composing demands on writers? I have argued that to fully understand writing in contemporary culture, we must pay attention to writing as a process and that such an understanding is best arrived at through data-based, *in situ* studies of what writers are doing with contemporary writing technologies. My argument for returning to writing processes as appropriate and necessary objects of study entails a recognition that everyone who writes has a process of doing so, coupled with an interest in how contemporary composing technologies give rise to new written forms and their attendant composing processes. In essence, my argument for attention to writer's composing processes is an argument for a shift in our disciplinary objects of study, as our understanding of short-form writing can change dramatically depending on whether we choose as our object of study the short-form written product, the cultural uses of short-form writing, or the composing processes involved in short-form writing.

Focusing on the short-form written product as an object of study, for example, we might see little significance in short-form writing. Treating a Facebook status update as an object of study might lead us to conclude that writing in Facebook is insubstantial, trivial, and of little consequence (as well as grammatically flawed). Focusing on the cultural uses of short-form writing, we might come to understand the ways people use short-form writing or the meanings they attach to short-form writing in their lives, but as with a focus on short-form products, we would be unable to make any conclusions about what writers do and the composing processes involved in writing short-form texts. However, when we shift the object of study to focus on the processes of composing these brief textual products, writing in Facebook is revealed to be like any other act of writing: a complex, rhetorically-rich, decision-making process of meaning making.

Dan's 28-word status—"had a dream he was a black women who's front teeth broke and were bleeding so much I I breathe and ended up drowning in my own blood—may seem on first blush to be insignificant or even frivolous. But, Dan suggested—through the care with which he composed the message and the reflective evaluation he underwent—that the writing is not trivial. In his think-aloud, after he posted the status, he reflected:

I really don't know who I think will respond to this. Probably Sara, and um, Kristy might also—my boss—because the two of us have weird dreams so she might comment on it. . . . Dreams are a habit of mine on the Facebook. It's not uncommon for me to post them. It's really just for the entertainment of other people. Um, Sara might have some sort of insight for the meaning behind it. . . . Sara is my designated dream analyzer because she does a damn good job.

Dan described sharing his dreams as a “habit,” a routine behavior or personal quirk he didn't give much thought to as opposed to something he consciously decided to compose. His dismissal of his dream sharing as “just for the entertainment of other people” is, however, counteracted by the interest he expressed later in the think aloud regarding who had commented and what they had said:

Interested to see what kind of feedback I get. Again, I really just think Sara, maybe Steve might throw in some snide remark. You know, just give a “lol,” a “hey what's up, I haven't talked to you in awhile” sort of thing.

In this comment, Dan suggested that he had designed the status update as an act of composing sent out into his social world to elicit affirmation of others' relationship with him as much as it was designed to elicit a response to the content of the statement. Dan's comments about the status update suggest that, for him, his dream sharing was a discourse move serving sophisticated rhetorical and interpersonal purposes. In it, he used written language to emphasize a shared interest with Heather and with his boss Kristy (and perhaps there is an additional desire to supplant the employee and boss relationship with one of personal connection); to construct—by enhancing his entertainment value—an attractive persona for himself; and to initiate conversation and connection in an attempt to prompt Heather to provide her insight into the dream.

Contemporary understandings of individual acts of writing as connected to larger cultural, historical, and social and political systems prepare writing researchers to study individual acts of writing without losing sight of the important contexts which intersect with those individual acts of composing. Amy Devitt (2011) argued, too, for a return to disciplinary attention to language as form, situated explicitly within the richly established contemporary understanding of writing's contexts. She wrote:

It is time to rebuild knowledge about text as well as context. It is time to integrate form with this fuller, more complex understanding of meaning. . . . The heart of English language study is the study of language in use, in all its processes and product, rhetorical and formal, individual and social complexity. (pp. 302–303)

Turning our attention to closer, fine-grained examinations of composing processes does not mean turning our back on understandings of writing as a social practice; instead, writing researchers might turn our attention to composing processes carrying with us the richly developed understanding of writing as a social practice. The question of what writers do when they write remains as significant as ever. Dan and Sherry's composing processes—when examined *in situ*—provide an opening into a world many of us suspect but which few in our field have captured and richly reported: Although writers in contemporary, internetworked writing spaces are driven by many of the same rhetorical concerns as ever, the composing technologies also shape the writer's processes in significant ways. In Dan and Sherry's cases, the technologies allowed for a multilayered, vertical and horizontal layering of multiple communicative acts our field has barely begun to understand while also encouraging micro-processing and in-process revision in ways which contrast with our disciplinary understanding of revision. These composing processes arising from the technological affordances and constraints reveal the compelling need for more data-based investigations of what writers are doing when they compose using contemporary composing technologies. Now that we have this rich body of scholarship on literacy as a social practice and a broad understanding of the imbrication of writing, composing technologies, and the rhetorical context, how might we better understand and elaborate on what we understand about individual writers' composing processes? What do writers actually do when they write within contemporary writing spaces? How do processes of composing in short-form interactive writing spaces compare with existing scholarship on the processes of composing more elaborated, institutionally-sanctioned writing?

Appendix A. Dan's narration of his dream

Uh, what was I going to do? I was going to update, actually I was going to post a status about a dream I just had while I was taking a nap.

Um, I was an African American woman who was wearing a terrible turquoise jumpsuit that crushed velvet you know that had sequins on its shoulders, some sort of sequins design, it was terrible. I had my hair it was all not braided and pretty nappy. It was pretty long, too and I was in some weird like city. New Yorkish, I don't remember ... umm, I remember some festival going on and there was this like girl that I knew who was married but she having an affair or something like that. I really don't know.

It was getting dark and I started wandering the city and I walked into this store where, like, all these people were. It was real shady looking, and I remember thinking I wanted the Dollar Store. So I was gonna go up into the front and ask, you know the store clerk where the Dollar Store was and not this store. If it was a store, I really don't know. It was almost like a bar.

Ahh, 'cause when I got up to the cash register, this rich lady, she was real, I mean really really rich, ahh, she was also middle-aged and white. I had noticed that contradiction. I was poor from the ghetto and black and this lady was middle aged and white um and rich. I let her go before me and she was like really gracious in the dream and like she was just like oh my gosh, thank you very much, and blah, blah, blah, blah, blah and it was contrary to what should have been happening, in that day and age, um, whatever time period the dream was in uh with my crushed velvet turquoise sequined jump suit. [clears throat] God, it was terrible, but anyways. So as I let her go in front of me and the store clerk was there, this lady was checking out and she started doing karaoke. Hm.

A song came on and the store clerk was like, 'Do some karaoke!' and everyone like egged her on so she started singing karaoke. I don't remember what the song was ah, so whatever, I left the store and I had this little gal-pal with me, another jacked-up crack addict. She was white and scraggly and, uh, we were walking back to a hotel and this guy comes along and he had said something about coming with us and I was like, yeah, it would be fun, and then my teeth just the two front teeth like cracked and I pulled them out like pieces of them out, and there was this hole in between them, it was like gaping. It was terrible, like my teeth were rotted. And I remember feeling blood fill up my mouth. And, I was like, oh no! My teeth cracked! And I looked down at my hand and blood was just like gushing out! Just absolutely gushing out! And I remember starting to panic and I asked my little gal-pal, my crack addict friend, uh, who is running off with this guy, I said, 'You know, can you take me the hospital? I can't drive. 'Uh, I am panicking right now and she was like 'Ew no, you're bleeding, that's gross!' and she kind of left me. And then I started bleeding so much that I couldn't breathe and I tried to put my head down like this, so that that the blood could run out so I could breathe and it wasn't happening. I was bleeding so much that it filled my mouth anyways and I ended up drowning in my own blood and then I woke up.

Um, obviously I am not going to type all of that. I will type in here though that I was well, you'll see.

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References

- Ball, Cheryl, & Hawk, Byron. (Eds.). (2006). Sound in/as compositional space: A next step in multiliteracies [Special Issue]. *Computers and Composition*, 23(3).
- Bangert-Drowns, Robert. (1993). The word processor as an instructional tool: A meta-analysis of word processing in writing instruction. *Review of Educational Research*, 63(1), 69–93.
- Braine, George. (1997). Beyond word processing: Networked computers in ESL writing classes. *Computers and Composition*, 14(1), 45–58.
- Brandt, Deborah. (1995). Accumulating literacy: Writing and learning to write in the twentieth century. *College English*, 57(6), 649–668.
- Buck, Amber. (2012). Examining digital literacy practices on social network sites. *Research in the Teaching of English*, 47(1), 9–38.
- Bump, Jerome. (1990). Radical changes in class discussions using networked computers. *Computers and the Humanities*, 24(1/2), 49–65.
- Cochran-Smith, Marilyn. (1991). Word processing and writing in elementary classrooms: A critical review of related literature. *Review of Educational Research*, 61(1), 107–155.
- Cooper, Marilyn, & Selfe, Cynthia. (1990). Computer conferences and learning: Authority, resistance, and internally persuasive discourse. *College English*, 52(8), 847–869.
- Daniell, Beth. (2003). *A communion of friendship: Literacy, spiritual practice, and women in recovery*. Carbondale, IL: Southern Illinois University Press.
- Devitt, Amy. (2011). Written language in use: An essay on returning language to writing studies. In Ann Curzan, & Michael Adams (Eds.), *Contours of English and English language studies* (pp. 298–314). Ann Arbor, MI: University of Michigan Press.
- Diogenes, Marvin, & Lunsford, Andrea. (2006). Toward delivering new definitions of writing. In Kathleen Yancey (Ed.), *Delivering college composition: The fifth canon* (pp. 141–154). Portsmouth, NH: Heinemann/Boynton Cook.
- Eldred, Janet, & Hawisher, Gail. (1995). Researching electronic networks. *Written Communication*, 12(3), 330–359.

- Faigley, Lester. (1992). *Fragments of rationality: Postmodernity and the subject of composition*. Pittsburgh, PA: University of Pittsburgh Press.
- Fishman, Jenn, Lunsford, Andrea, McGregor, Beth, & Otuteye, Mark. (2005). Performing writing, performing literacy. *College Composition and Communication*, 57(2), 224–252.
- George, Diana. (2002). From analysis to design: Visual communication in the teaching of writing. *College Composition and Communication*, 54(1), 11–39.
- Haas, Christina. (1996). *Writing technology: Studies on the materiality of literacy*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Haas, Christina, Carr, Brandon, & Takayoshi, Pamela. (2011). Building and maintaining contexts in interactive networked writing: An examination of deixis and intertextuality in instant messaging. *Journal of Business and Technical Communication*, 25(3), 276–298.
- Haas, Christina, Takayoshi, Pamela, Carr, Brandon, Hudson, Kimberley, & Pollock, Ross. (2011). Young people's everyday literacies: The language of instant messaging. *Research in the Teaching of English*, 45(4), 378–404.
- Halbritter, Bump. (2006). Musical rhetoric in integrated-media composition. *Computers and Composition*, 23(3), 317–334.
- Halbritter, Bump. (2010). Aural tools: Who's listening? In Joyce Walker, Byron Hawk, & Ollie Oviedo (Eds.), *Digital tools in composition studies* (pp. 187–220). Cresskill, NJ: Hampton Press.
- Halbritter, Bump, & Taylor, Todd. (2007). Remembering composition. *JAC: A Journal of Composition Theory*, 26(3/4) [DVD supplement].
- Handa, Carolyn. (2004). *Visual rhetoric in a digital world: A critical sourcebook*. Boston, MA: Bedford/St. Martin's.
- Haswell, Richard. (2005). NCTE/CCCC's recent war on scholarship. *Written Communication*, 22(2), 198–223.
- Hawisher, Gail, & Moran, Charles. (1993). Electronic mail and the writing instructor. *College English*, 55(6), 627–643.
- Hocks, Mary E. (2003). Understanding visual rhetoric in digital writing environments. *College Composition and Communication*, 54(4), 629–656.
- Hocks, Mary E., & Kendrick, Michelle. (2005). *Eloquent images: Word and image in the age of new media*. Cambridge, MA: The MIT Press.
- Hult, Christine, & Richins, Ryan. (2006). The rhetoric and discourse of Instant Messaging. *Computers and Composition Online*. Retrieved from <http://www2.bgsu.edu/departments/english/cconline/hultrichins.im/index.htm>
- Jones, Leigh A. (2010). Podcasting and performativity: Multimodal invention in an advanced writing class. *Composition Studies*, 38(2), 75–91.
- Kinthead, Joyce. (1987). Computer conversation: E-mail and writing instruction. *College Composition and Communication*, 38(3), 337–341.
- Kostelnick, Charles, & Hassett, Michael. (2003). *Shaping information: The rhetoric of visual conventions*. Carbondale, IL: Southern Illinois University Press.
- Kress, Gunther. (2003). *Literacy in a new media age*. New York, NY: Routledge.
- Lunsford, Andrea. (2006). Writing, technologies, and the fifth canon. *Computers and Composition*, 23(2), 169–177.
- Pascal, Blaise. (1657). "Letter 16." *Lettres Provinciales*. Retrieved from <http://quoteinvestigator.com/2012/04/28/shorter-letter/>
- Porter, James. (1998). *Rhetorical ethics and internetted writing*. Greenwich, CT: Ablex Publishing.
- Regan, Allison. (1993). "Type normal like the rest of us": Writing, power, and homophobia in the networked composition classroom. *Computers and Composition*, 10(4), 11–24.
- Romano, Susan. (1993). The Egalitarianism Narrative: Whose Story? *Whose Yardstick?* *Computers and Composition*, 10(3), 5–28.
- Selfe, Cynthia L. (2009). The movement of air, the breath of meaning: Aurality and multimodal composing. *College Composition and Communication*, 60(4), 616–663.
- Selfe, Cynthia L., Fleischer, Stephanie Owen, & Wright, Susan. (2007). Words, audio, and video: Composing and the processes of production. In Cynthia L. Selfe (Ed.), *Multimodal composition: Resources for teachers* (pp. 13–28). Cresskill, NJ: Hampton Press.
- Sheridan, David. (2010). Fabricating consent: Three-dimensional objects as rhetorical compositions. *Computers and Composition*, 27(4), 249–265.
- Shipka, Jody. (2005). A multimodal task-based framework for composing. *College Composition and Communication*, 57(2), 277–306.
- Spooner, Michael, & Yancey, Kathleen Blake. (1996). Postings on a genre of email. *College Composition and Communication*, 47(2), 252–278.
- Steiner, Lindsay. (2013). *The available means of design: A rhetorical investigation of professional multimodal composing* (Unpublished doctoral dissertation). Kent State University, Kent, Ohio.
- Takayoshi, Pamela. (1994). Building new networks from the old: Women's experiences with electronic communications. *Computers and Composition*, 11(1), 21–35.
- Torrance, Mark, & Galbraith, David. (2008). The processing demands of writing. In Charles MacArthur, Steve Graham, & Jill Fitzgerald (Eds.), *Handbook of Writing Research* (pp. 67–80). New York, NY: Guilford Publications.
- Williams, Sean. (2001). Part 1: thinking out of the pro-verbal box. *Computers and Composition*, 18(1), 21–32.
- Wysocki, Anne Frances, Johnson-Eilola, Johndan, Selfe, Cynthia L., & Sirc, Geoffrey. (2004). *Writing new media: Theory and applications for expanding the teaching of composition*. Logan, UT: Utah State University Press.