Article

Tools Matter: Mediated Writing Activity in Alternative Digital Environments

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Abstract

This study examines the experiences and perceptions of writers who composed text using "distraction-free" writing tools that stand as alternatives to standard word processing programs. The purpose of this research was to develop a clearer understanding of how digital writing tools may shape the activities and practices of writers, as well as what writing with unfamiliar tools and technologies might reveal about writing processes. Analysis of study participants' reflective narratives of their composing experience suggests the extent to which writing tools and technologies influence routine practices, assist writers as they try to direct their attention (and avoid distraction), motivate writing, and impact writers' "text sense" as they compose. Moreover, findings indicate how different tools and technologies may be viewed as more or less useful for different writing tasks. This article ends with a call for writing researchers, writing teachers, and software developers to attend more critically to the ways writing technologies shape the practices of writers.

Keywords

digital writing tools, writing processes, mediated activity, materiality, word processing software, distraction-free writing tools

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One of the earliest typewriters was patented in 1870 by Danish inventor, Rasmus Malling-Hansen. It was called a *skrivekugle*, or "writing ball," since its 52 keys were arranged across a semispherical dome. In the early 1880s, Malling-Hansen sold one of his machines to Friedrich Nietzsche, who hoped that it might help him continue writing despite his failing eyesight. According to Kittler (1999), Nietzsche's use of the device had a profound impact on his writing, which "changed from arguments to aphorisms, from thoughts to puns, from rhetoric to telegram style" (p. 203). Although Nietzsche ran into technical difficulties using the typewriter, and eventually abandoned its use, his experience with it led him to remark that "our writing tools are also working on our thoughts" (quoted in Kittler, 1999, p. 200). For Nietzsche, this writing technology mattered, not just because it promised to compensate for his advancing blindness, but also because it had an impact on what and how he wrote.

More recently, scholars have debated the extent to which writing tools shape the experiences and processes of writing. For example, Collier and Werier (1995) compared writers using word processors and those using pen and paper, and concluded that "good writers are good writers, no matter how they write" (p. 56). In her 1996 book *Writing Technology*, Christina Haas challenges this way of thinking, referring to it as the "myth of technological transparency," or the notion that writing has an "essential nature unaffected by the mode of production and presentation" (p. 22). Under this view, writing technologies are irrelevant, because they have little or no effect on writing as such. Baron (1999), for a less-extreme example, seemed to shrug off the impact of computers on writing, when he suggested that they are "simply the latest step in a long line of writing technologies" (p. 118). While such views may provide a helpful counterbalance to the trap of technological determinism, the problem with this myth is that it can imply that technologies are simply transparent intermediaries between users and their activities. The result is a tendency "to look through rather than at tools and technologies" (Witte, 2005, p. 152).

Even when scholars have examined writing tools and technologies, they have tended to focus on their potential to improve writing quality, especially in school settings. Early studies of word processing through the 1980s and early 1990s largely focused on student writers, and how writing with a computer affected factors like frequency of error, amount of writing, and attitudes toward writing (Bangert-Drowns, 1993; Hawisher, 1986, 1988). In his review of two decades of research, Moran (2003) concludes that "this particular hope—that computers would somehow make a difference in student writing—has been one that 'springs eternal'" (p. 349). A notable exception to this preoccupation with improved quality is the work of Christina Haas who

examined the effects of computer technology on various composition practices, including reading, planning, and writers' "sense of the text" as they wrote (1989a, 1989b, 1996, 1999; Haas & Neuwirth, 1994). Haas's approach stands out, I believe, because instead of attempting to determine whether writing tools "improve" writing, it is geared toward addressing what she calls "the Technology Question," namely, "what are the implications of computer-based writing tools for the processes and practices of literacy?" (1996, p. 24).

One obstacle to understanding the effects of writing tools is that the more prevalent they become, the more transparent—and therefore less available to scrutiny—they may seem. Scholarly interest dropped off around the time word processing became nearly ubiquitous, a point Susser (1998) alluded to when he wrote that "word processing has almost disappeared from accounts of writing with computers" (p. 347). Analysis of writing tools has tended to concentrate on moments when new technologies are being adopted. Porter (2003) related his own personal trajectory as a writer, starting with handwriting as his primary mode of production, to typewriting, then word processing, and finally networked communication. Similarly, Bray (2013) examines her experiences replacing Microsoft Word with writing software called Scrivener (described below). There are also studies of how writing practices are affected by "Web 2.0" (Arola, 2010; Blythe, Lauer, & Curran, 2014; Brooke & Rickert, 2011; Dilger, 2010; Purdy, 2010; Wolff, 2013), mobile devices (Kimme Hea, 2009; Pigg, 2014; Swarts, 2007), and ubiquitous computing (Pigg et al., 2014). It is at such moments of change when the effects of tools and technologies on writing activity become more visible.

A largely under-examined shift over the past decade has been the emergence of so-called distraction free writing tools. These programs exchange the abundance of features found in standard(ized) word processors, like Microsoft Word and Google Docs, for a pared-down, minimalist writing experience. Initial entries into this category, such as FocusWriter and WriteRoom, adopted a green-text-on-black-background aesthetic, presumably to appeal to writers nostalgic for the early years of personal computing and their cathode ray tube monitors (see Figure 1). Others, like OmmWriter and ZenPen, imply that composing on a mostly blank screen will contribute to a calm, mindful writing experience. With coauthor Derek Van Ittersum, I investigated how online bloggers and other web authors talk about their use of such alternative writing tools, but the writers we examined were enthusiasts who had, for a variety of reasons, voluntarily sought out alternatives to standard word processors (Van Ittersum & Ching, 2013). Still unaddressed is the question of how such tools might impact the processes and practices of more typical writers who may be less familiar with emergent composing platforms.

Figure 1. WriteRoom's minimalist, green-on-black interface.

In response to this need for further research into writers' experiences and perceptions of digital writing tools, this article reports the findings of a qualitative research study in which students in a graduate composition program were asked to compose text using alternative writing tools, and then to write narrative reflections of their experiences. Analysis of these reflections reveals some of the ways these tools seem to shape writing activity, and also the meanings and values writers ascribe to their own composing processes and practices. The design of this study was premised on Haas's (1996) assertion that "when writers exchange one set of material tools for another—or, more accurately, when they add another set of literacy tools to their repertoires—aspects of writing are foregrounded that may not have been noticed before" (p. 24). The purpose of this study, then, is not only to understand some of the effects of these particular writing tools, but also to use participants' experiences experimenting with them as an opportunity to discover how using unfamiliar technologies might provide insight into their processes and practices more generally. In the end, this inquiry calls attention to the complex ways writers use tools in order to achieve their goals as writers.

Framework

Informing this study is the theoretical insight that tools mediate activity, an idea that spans across cultural-historical activity theory (CHAT) and actor-network

theory (ANT). As Witte (2005) puts it, "Any human act of doing or performing depends on a tool, a technology, or an artifact mediating between the acting participant . . . and the goal or object of the performance" (p. 143). Writing as an activity may employ a wide range of material and symbolic tools—from pens and pencils to language itself—and of course writing is itself a technology (Baron, 1999; Ong, 1986; Reid, 2008). But what does it mean for a technology to "mediate" activity? Haas (1996) explains that "tools mediate human encounters with the environment, and, in so doing, transform not only the environment but the humans who use them as well" (p. 14). Technological mediation, then, is transformative; it leaves its mark upon the user. In the case of writing, we should expect technologies like word processing software to shape not only texts but also the habits and durable practices of writers who compose them.

These tools, technologies, or mediational means are more than simple intermediaries between the writer and the writing. Riffing on Latour's (1999) assertion that "action is simply not a property of humans *but of an association of actants*" (p. 182), Gries (2011) argues that writing is accomplished neither by a woman nor by a pen alone, but instead that writing is the work of a "hybrid actor" encompassing the woman and pen together, or a "woman-pen" (p. 81). Brooke and Rickert (2011) make a similar point when they claim that a cane used by a blind pedestrian "cannot be relegated to mere use," and should instead be viewed as "an additional part of the body" (p. 169). Tools and technologies allow "dynamic engagement with the world and its entities" in ways that blur the lines between human and tool (p. 169). For Cooper (2010), this way in which tools extend cognitive processes occurs as organisms respond to their environments, leading her to claim that humans are "natural-born cyborgs" (p. 26). To put it more broadly, tools and technologies shape our interactions with the world.

Sometimes, tools and technologies are intentionally chosen for a particular activity. Prior and Shipka (2003) discuss what they call "environment-selecting and -structuring practices" (or ESSPs), or the "intentional deployment of external aids and actors to shape, stabilize, and direct consciousness in service of the task at hand" (p. 219). One example they give is a psychology professor who uses the buzzer on her clothes dryer as an external reminder to take breaks from writing, not only to do laundry, but also to reflect in a "very productive" manner on what she is writing (p. 180). Prior and Shipka argue that such activities, normally considered extraneous to the writing process, are in fact key methods that writers use to "get in tune with" their work (p. 228). These authors highlight the importance of looking at material and social environments in order to better understand the activity of writing and the ways in which writing mediates activity.

I would like to suggest, though, that the ways writers "get in tune with" their work is not necessarily always intentional—sometimes tools have their own agendas. Arola (2010) points out that the "interface of any software, web, or operating system is a designed space" (p. 7). That is to say that tools and technologies are cultural artifacts, and they are expressive of meanings and values of the people who design them and of a larger cultural context. As such, digital tools are ideological, a point Selfe and Selfe (1994) illustrate in their analysis of the ubiquitous "desktop" metaphor, which they argue is construed "by and for white middle- and upper-class users to replicate a world that they know and feel comfortable within" (p. 486). Of course, making users comfortable (or not) is only one possible outcome. As LeBlanc (1990) puts it, digital writing tools "operate with an implicit ideology, one that values or devalues certain writing behaviors and ultimately demands adherence to a given view of the writing process" (p. 8). Again, the tools writers use shape how they think about writing as an activity.

Porter (2003) and Bray (2013) have discussed digital composing tools in the context of personal scholarly reflections, and both argue for what they call a "posthumanist" view of technology that blurs the lines between "human" and "machine" (Porter, 2003, p. 387) and "allows us to view our relationship with our tools as fluid, hybrid and borderless" (Bray, 2013, p. 206). According to Porter, this approach should lead us to ask different kinds of questions about our tools: "How will we use technology? How will we design technology? How will we engage technology? In its focus on whether technology is good or bad, useful or not, humanizing or not, humanists answer the wrong questions" (p. 388). Instead of asking whether technological tools lead to better writing, we should ask, as Bray puts it, "how they shape our writing experience and how we, in turn, can shape these tools" (p. 206). Research focused on digital writing tools, then, not only helps us better understand the impacts of technology, but also equips us to make conscious choices about how we design and select the technologies that shape our writing experience.

This article seeks to build on and extend scholarship on digital writing by examining how writers experience and perceive alternative composing technologies. Specifically, the following research questions guided my inquiry: (a) How is writing activity mediated or shaped by digital writing tools? (b) How do writers select and use digital writing tools to shape and manage their writing activity? (c) How have the practices and attitudes of writers been shaped, intentionally or not, by the technologies they use to write? and (d) What can be learned about writing as an activity when writers employ unfamiliar tools and technologies?

Context

This study was conducted in the context of a graduate seminar I taught at a large, four-year public university on the west coast of the United States. The seminar was an elective course which typically enrolled students in a master's degree program in English, with a concentration in composition studies. Though some graduates from the program go on to enroll in PhD programs, the composition MA program was designed primarily to prepare students to teach writing courses at the college-level, with graduates often seeking jobs teaching writing at two-year colleges in the region. Because of the typical career trajectory of its graduates, courses in the program emphasize methods of teaching writing, though there are also courses in composition theory and research methods.

The elective course, titled "Teaching Writing in a Digital Age," was developed and added to the curriculum largely because demand for a "teaching with technology" course was high among students. Through internships and other contacts at two-year colleges in the area, they learned that departments were interested in hiring teachers with experience using various technologies in the teaching of writing, from learning management systems and computer labs to hybrid and fully online courses. While the seminar did give students hands-on experience with some technologies, much of its focus was on helping them gain a deeper understanding of how technologies mediate and shape literate practices, both in relation to college writing and in the broader culture. The course included topics such as writing as a technology, new media studies, technology and identity, and read/write culture, as well as practices like blogging, wiki authoring, social networking, and video gaming.

Assignments in the seminar asked students to be both reflective and critical in their understandings of technology. At the beginning of the semester, I had students write "technological-literacy autobiographical narratives," or reflections on their past experiences with technology and writing, largely prompted by questions in course readings (Hawisher, Selfe, Moraski, & Pearson, 2004; Selfe, 2004a).[1] Another assignment asked students to develop a "new media text" assignment for an undergraduate writing course, complete the assignment themselves, and then write a reflection about the experience. For the final course project, I asked students to do some independent scholarly research on a topic related to course themes, write a seminar paper about it, and give an in-class presentation. Throughout the term, students also posted reading responses to a course blog and commented on the posts of others.

Starting in 2013, I added another assignment that asked students to compose text with alternative digital writing tools and write a reflective narrative

about the experience. Here is the description of the assignment from the course syllabus:

> Composing Tool Experiment and Reflection
>
> About midway through the semester, you will sign up to experiment writing with an "alternative composing tool" such as Scrivener, WriteRoom, OmmWriter, or Write-or-Die. You may use this tool to complete any or all of the remaining writing assignments for this course or any other. Once you have tried it out, you will write a reflective essay describing your experience using this tool and analyzing the effect it had (or didn't) on your composing process.

As a teacher, my motive for giving this assignment to students was so that they would have an opportunity to reflect on their own experiences with writing tools and technologies before they read related course texts and we discussed them as a class. In this sense, it was a kind of "pre-reading" exercise. The aim was also for students to reflect on normally tacit or unrecognized aspects of their writing processes, and to begin thinking about how tools and technologies fit into those processes. After a brief in-class discussion of the assignment and an overview of various tools, students were free to choose which tool to use and what writing tasks to work on during this activity.

After experimenting with their chosen tools, students then wrote reflective essays about their experiences. I asked them to consider in these reflections several aspects of the experience, including features, aesthetics, utility, ideolog(ies), and difficulty. Not all reflections addressed all of these areas. It is important to acknowledge that these reflections were, of course, shaped by the pedagogical context. Most students were in a program focused on composition studies, and all of them were taking a course focused on writing and technology, so they were in primed to think about literate activity in particular ways, especially after having considered some of their past experiences in the technological-literacy autobiographical narrative. At the point in the semester where they composed their composing tool reflections, they had considered writing as a technology (Baron, 1999; Ong, 1986; Reid, 2008), some relationships between technology and identity (Buckingham, 2008; Hawisher, Selfe, Moraski, & Pearson, 2004; Selfe, 2004a), new literacies (Lankshear & Knobel, 2007), and new media (Selfe, 2004b; Sorapure, 2006; Wysocki, 2004; Yancey, 2004). Though none of the participants explicitly framed their reflections around these themes, it is likely that having encountered them influenced how they engaged with the composing tools assignment. However, by the time students completed this task, they had not yet read or discussed texts related specifically to composing tools (Porter, 2003; Van Ittersum & Ching, 2013).

In sum, study participants were students in a graduate seminar that continually asked them to reflect critically on their engagements with technology and literacy, and this seminar was embedded in a program in which they had to consider literate practices from myriad angles. I would argue that this institutional positioning primed participants to be critical and insightful about their experiences. Even though they completed this assignment for a course, in some respects participants might be viewed as coresearchers for this study, since they were the ones who first rendered their experiences and perspectives in form of reflective narratives. Out of the 25 students who completed this assignment across both sections of the course, 18 volunteered to participate in this study.

Data Collection and Analysis

The data for this study consists of the reflective essays written by students as part of the composition tool assignment described above.[2] A total of 18 essays were collected. Though not specifically instructed to do so, all of the participants indicated in their reflective essays what tool they used, what word processor they normally use, and what writing task(s) they worked on (see Table 1; all names are pseudonyms).

During the composing tool experiments, the majority of participants (16) wrote school-related assignments, such as essays and blog posts, though three of them (Luke, Michael, and Sylvia) wrote texts unrelated to school, such as poems, song lyrics, or journal entries. All participants indicated that they normally used one of two pieces of conventional word processing software to compose text, either Microsoft Word (13) or Google Docs (5).

Most of the writing tools chosen by participants could be categorized as "distraction free," in that they employed minimalist interfaces, pared-down features, and (often) a full-screen mode. FocusWriter, OmmWriter, Q10, and WriteRoom were pieces of software that were downloaded and installed by participants on their own computers. Hemingway Editor, Final Deadline's Scrawl, Write or Die 2, Written? Kitten!, and ZenPen were browser-based web applications requiring an internet connection to use. Three of these tools—Scrawl, Write or Die 2, and Written? Kitten!—were distinguished by their inclusion of features intended to motivate writing, either through alerts, positive reinforcement, or negative consequences for not writing. Only one piece of software, Scrivener, fell outside the larger "distraction-free" category. Though Scrivener's interface and features differ significantly from traditional word processing programs, it would be inaccurate to describe it as minimalist. Nevertheless, the reflective essays of study participants who used Scrivener are included in the data, since it also represents an "alternative" to mainstream composing tools like Microsoft Word and Google Docs.

Table 1. Participants.

Name	Tool(s)	Normal tool	Task
Christine	ZenPen	MS Word	Portfolio essay
Fiona	WriteRoom	MS Word	Blog post for course
Joseph	Write or Die	Google Docs	Unspecified assignment
Keith	FocusWriter	MS Word	Portfolio essay
Lindsey	Written? Kitten!	MS Word	Unspecified assignment
Luke	WriteRoom	MS Word	Song lyrics
Michael	OmmWriter	Google Docs	Journaling, poetry, unspecified assignments
Nadine	Final Deadline Scrawl	Google Docs	Unspecified assignment
Nick	FocusWriter	MS Word	Portfolio essay
Penelope	Q10	MS Word	Unspecified assignment
Renee	Scrivener	MS Word	Course research paper
Roberto	Hemingway Editor	MS Word	Reflective essay
Rosemary	FocusWriter	Google Docs	Unspecified assignment
Sean	Scrivener	MS Word	Analysis essay
Sergio	ZenPen	Google Docs	Blog post for course
Sharon	ZenPen	MS Word	Unspecified assignment
Sylvia	ZenPen	MS Word	Poems
Vincent	OmmWriter	MS Word	Unspecified assignment

Analysis of the reflective essays began, it could be argued, when I first read and evaluated them as course assignments, since that engagement led to initial insights into general patterns across the texts. However, it was not until the essays had been collected for the purposes of this study that I initiated a more systematic analysis. For that process, I followed an "inductive and comparative" approach described in Merriam (2009, p. 175), which is based on the constant comparative method described in the literature on grounded theory (Corbin & Strauss, 2007; Glaser & Strauss, 1967). I read each reflection, noting thematic segments that seemed relevant for answering this study's research questions. Each of those segments was assigned a provisional descriptor, or code, to indicate the theme or topic of the segment. Take for example this excerpt from Penelope's essay reflecting on her experiences writing with Q10:

> The black screen does effectively eliminate a lot of the distractions and would be advantageous to my process of writing to discover. I couldn't see the Mozilla icon begging to be clicked, or the flash of an instant message. I was in this space, and I kind of liked it as a space for brainstorming and freewriting.

Table 2. Analytic Codes.

Category	Code	Code definition
Affect	Aesthetics	Effects of aesthetics on experience of writing
	Comfort	Feelings of comfort and/or familiarity with writing tools
	Constraint	Feelings of constraint, usually in relation to reduced features
	Frustration	Feelings of fear, anxiety, or frustration
	Minimalism	Software framed in terms of simplicity or minimalism
Coordination	Intertextuality	Practices of source use and citation, often requiring multiple open documents
	Migration	Moving text from one program to another for formatting and layout
Distraction	Distraction-free	Distraction by distraction-free software
	Focus	Writing as requiring focus
	Online	Distraction by internet, email, social media, etc.
	Other software	Distraction by external programs
	Word/Google	Distractions experienced in standard word processing software
Features	Formatting	Formatting fonts, colors, spacing, etc.
	Grammar/spell check	Spell and/or grammar check features
	Menus/toolbars/ icons	Menus, toolbars, icons, and other aspects of standard word processing interfaces
	Word/page count	Word- or page-count features of writing software
Habit	Disruption	Disruption of writing practices
	Habit	Past or existing writing habits and routines
Materiality	Handwriting	Chirographic practices or materials, such as pens, notebooks, and typewriters
	Remediation	Writing software in relation to other writing technologies, such as typewriters and pen and paper
	Space	Software framed in spatial terms, as movement between inside and outside of programs
	Text sense	Writer's sense of a text (Haas, 1996), often in relation to "polish" or "completeness"

(continued)

Table 2. (continued)

Category	Code	Code definition
Motivation	Negative motivation	Negative motivations for writing
	Positive motivation	Positive forms of motivation for writing
	Progress tracking	Tracking progress as motivating
Process	Editing/formatting	Editing, proofreading, and/or formatting text
	Freewriting	Freewriting or brainstorming as part of writing process
	Isolation	Writing an isolated act, as in "just write" or "put words on a page"
	Quantity	Distinguishes between quality and quantity of writing
	Speed	Speed of writing activity
	Starting	Early stages of writing process or "getting started"

There are admittedly many ways this segment could be described, but I initially coded it with easily identifiable topical terms like "distraction," "brainstorming," "freewriting," "internet," and "social media." Where possible, I relied on terminology used by the participants themselves, as with the first three terms here. However, in the cases of "internet" and "social media," the causes of distraction were inferred from contextual cues (e.g., "Mozilla icon" and "instant messaging").

Based on the initial analysis, I sorted individual codes into a "scheme of categories or themes or findings" that were indicative of patterns across the data (Merriam, 2009, p. 182). For example, two of the codes above—"brainstorming" and "freewriting"—were eventually collapsed into a single code, since participants tended to use them interchangeably. I combined this code with other codes, like "research" and "planning," under the larger umbrella term, "process," which indicates codes related to writing process. Likewise, "internet" and "social media" were combined with "email" into a single category representing online activities that distracted participants from writing, and this category fit under the category "distractions." Refining and sorting codes into broader categories was a recursive process of induction and comparison (see Table 2 for a list of categories, codes, and their definitions).

Before I turn to the findings, though, I want to make it clear that analysis of the data was an interpretive act shaped by the motivating

research questions about the relationships between writers and technologies. As discussed above, this question emerged out of a theoretical framework that focuses attention on how tools and environments mediate human activity. Moreover, by representing their experiences and perspectives in the form of written reflections, participants themselves were engaged in interpretive acts. While interviews or surveys may have resulted in a more standardized data set, this use of reflective writing allowed participants to frame their experience in terms that made sense to them. Overall, then, the process of data collection and analysis was not "a vehicle for producing a static representation of reality" (Smagorinsky, 2008, p. 400), but instead a "pieced-together set of representations that are fitted to the specifics of a complex situation" (Denzin & Lincoln, 2003, p. 5). Other frameworks, questions, and methods would likely have produced different codes, themes, and categories.

Findings

Analysis of the reflective essays led to the emergence of six broad, interrelated themes: habit, distraction, focus, motivation, materiality, and writing process. These themes emerged as patterns out of the reflective essays that offered, in one way or another, insight into the motivating questions behind this inquiry: (a) How is writing activity mediated or shaped by digital writing tools? (b) How do writers select and use digital writing tools to shape and manage their writing activity? (c) How have the practices and attitudes of writers been shaped, intentionally or not, by the technologies they use to write? and (d) What can be learned about writing as an activity when writers employ unfamiliar tools and technologies?

Habit

Several study participants noted that the experience of using an unfamiliar composing tool caused them to become aware of writing habits that normally went unnoticed. As one participant, Nadine, put it, "if there's one thing this exercise has taught me, it's that experimenting with alternate writing tools can reveal otherwise hidden habits." One of the "hidden habits" she mentions in her reflection became visible when she enabled a feature in Final Deadline called "scrawl," which has an option to disable the delete key. Nadine wrote "I selected that option and began to type, quickly discovering a surprising fact about my writing process: I'm a heavy user of the delete key." That she found this fact "surprising" is noteworthy, because it seems to confirm Haas's (1996) point that, when writers use new tools, "aspects of writing are

foregrounded that may not have been noticed before" (p. 24). As another participant, Roberto, put it, "this experience has made me reflect on my writing in a way that I haven't before."

This process of discovery could be disruptive, and in some cases demanded a significant amount of adjustment for writers. Nadine, for example, had trouble learning how to write without a functional delete key: "it felt uncomfortable and strangely restrictive to be unable to revise words, fix typos, and it took several paragraphs of effort before I broke out of the habit." Despite having chosen the option to disable the delete key, Nadine seems to have continued trying to use it for some time before she could consciously choose to stop. For some, the disruption was too much, like Keith who wrote, "I found that FocusWriter's features didn't play well with my own writing habits, and was more a place of frustration than production." Another participant, Nick, came to appreciate FocusWriter, but nevertheless acknowledged that it "requires a serious adjustment to user-expectations and habits in the writing process."

These habits seem to have been formed while using standard word processing programs. When participants discussed their usual writing practices, they most often mentioned Microsoft Word or Google Docs. For example, Keith wrote, "I wonder if I have become so attached to Word that all other programs would require an adjustment period on my part." Likewise, Renee speculated that "Word has enforced my habits," and Fiona wrote that she felt "most productive when using the familiar, 'high-distraction' format of Microsoft Word." A common theme in these accounts, then, is strength of habits formed through familiarity with particular writing tools, and the difficulty of "adjustment" or "adaptation" to new ones.

Likewise, Fiona ended her essay with a decision to "stick with (hegemonic?) old Microsoft Word, choosing comfort and familiarity over innovation and new possibilities, at least for the time being." It is important, though, to resist the temptation to read Fiona's rejection of the software as a simple unwillingness to change or grow. She frames the question in terms of "comfort and familiarity" on the one hand, and "innovation and new possibilities" on the other, suggesting that she knows full well that there may be value in adapting to or adopting new tools, but she is also aware of the costs. Reading these narratives, one is struck by the influence of habits built up over years of using particular tools.

Distraction

Most of the alternative writing tools available to participants (with the exception of Scrivener) are marketed as "distraction-free," and so it is not surprising that nearly all of the essays address the theme of distraction. The writing

distractions participants identified fall into two broad categories: (a) external distractions, including internet browsers, social media, email, and other software applications considered to be outside the writing environment; and (b) internal distractions, or distractions found inside the writing tool's interface. What is interesting here is not just what participants identified as "distractions," but also what those identifications suggest about how they conceptualize writing as an activity, and distinctions they make between "writing" and "not writing."

Frequently, external distractions involve social media or email. For instance, Rosemary indicated that when she writes, she usually has "several different tabs open, and constantly switch between my writing task, my Facebook, and my email," a routine shared by Vincent, who admitted that "I often go on my internet browser to check Facebook." Both participants mention frequency, with these distractions occurring "constantly" or "often." That theme of frequency is echoed in Joseph's essay, where he explained that his usual writing pattern is "writing for a couple of minutes and then checking my email . . . and before too long I may have spent half an hour not writing." In this way, a session ostensibly devoted to working on a particular piece of writing can become diverted by activity he considers "not writing."

Distractions also came in the form of other programs, and some participants noted how their chosen tools were designed to prevent them from opening or using other software. Rosemary wrote that FocusWriter "makes it difficult to switch into other programs, which forces the writer to concentrate on one thing at a time." Similarly, Nick observed that FocusWriter was designed to "limit access to other programs outside of itself, further reinforcing attention toward the writing task." What both participants are describing is an experience of using the "full screen" mode in FocusWriter, which removes all menus and icons from view. It is of course possible to exit this mode, and make those menu bars, icons, and window visible again, but having them out of view is perceived as limiting access.

In addition to external distractions, many participants noted that some of the features internal to standard word processors could themselves be distracting. Luke wrote of Microsoft Word's interface that "it is hard to get lost in one's writing and one's thoughts with these icons nibbling one's document from the top and the bottom." Sharon pointed to her usual experience of "drop-down menus encouraging me to select different fonts and colors, add a chart, right-align text, add bullet points, and more. . . . I can't deny that they distract me at times." In contrast, using distraction-free software seemed to remove many of these distractions. For Sylvia, using ZenPen meant that she "wasn't faced with a million distractions—colors, options, menus, and so on—so I had to focus on the moment and focus on what I was writing."

Besides formatting and document layout features, participants also singled out another feature—spelling and grammar check—as especially intrusive. Rosemary wrote that she gets "distracted by the red lines indicating my spelling errors, so I always go back and fix them." Working in FocusWriter, which lacks spell check, she thought it was "interesting to see how it changed my writing. It helped save me time and I could concentrate on the text more, rather than going back to fix my mistakes." She further explains that she eventual pasted the text she wrote into a Google document, and then used spell check to fix errors. It is nevertheless interesting, though, that composing without spell check saved her time and improved her ability to "concentrate on the text."

What Rosemary may be implying is that "writing" is a term for a variety of activities, and not all of them need to happen simultaneously. Moreover, some features or tools are deemed more appropriate for some activities or tasks than others. Joseph wrote that "it is harder to free write because [Google Docs] constantly points out nonstandard grammatical features in my texts and I am forced to account for the squiggly line." Like Rosemary, he does not discount the utility of grammar check, but he does question its use during a more exploratory "free write." As Luke argues, "there are, in fact, many reasons not to have this 'mistake'-fixing feature as the default. The most obvious reason is that it breaks up one's flow of thought to be told that one just did something 'wrong.'" Timing is key: what is distracting at one point in the writing process may be useful later on.

From these accounts, we have learned that composing with digital tools can be fraught with distractions, both from other applications and from the tools themselves. And what is perceived as a distraction at during some writing activities, it may not be distracting elsewhere. What distractions do, though, is prevent writers from concentrating or focusing on a particular writing task at the appropriate time.

Focus

If distraction is the problem, then the solution offered by most "distraction-free" writing software is an environment that focuses the user's attention on the writing task at hand. As we have seen, these applications attempt to focus attention either by removing what the developers deem unnecessary or distracting features, and by hiding menu bars and limiting access to other programs. Keith wrote that FocusWriter "tries to be a distraction-free writing platform that encourages you to concentrate on what's in front of you." In other words, these applications are designed to constrain the user's experience, to minimize the number of possible operations while still affording the production of text.

One of those features was the visual design of the tools. Luke, for example, noted a discrepancy between the "sleek, coherent physical design" of his laptop, and his usual experience of using it, saying "the minute one starts using it, the apps are madly vying for one's attention like attention-starved siblings." Here, he frames computer applications as competing for the user's attention. Presumably, distraction occurs when one's attention is attracted by software that does not contribute to the task as hand. Luke reported "relishing in the unfettered aesthetic environment it provided since my 'focus' would not be interrupted by a plethora of icons and miscellaneous options on the screen." Other participants pointed to the "minimalist" aspect of distraction-free writing tools as part of their appeal. Nick, for example, linked the "minimalist features" to his ability to "focus is simply on the act of composing," and Michael wrote that OmmWriter's "clean and sleek" appearance made him feel "in the zone" while writing. What these participants suggest is that visual design choices of tools are more than cosmetic; instead, the aesthetics affect users' focus and attention.

Some participants, like Nick, found that "the constraints of the software had indeed accomplished increasing my focus and I proceeded . . . unimpeded for some time." Luke, who complained about apps vying for his attention, claimed that "using WriteRoom is a way to shut all of that noise out and turn your laptop into a writing machine." Of interest is the implication that a laptop designed to perform many sophisticated functions might benefit from software that turns it into "a writing machine." This idea—that a reduction in functionality can improve a tool's utility—seems to be part of the appeal of distraction-free tools, and relates to the minimalist aesthetic many of them employ.

One surprising pattern among the reflections was how participants described software constraints in spatial terms. For example, Keith described FocusWriter as "a program that restricts your outward movement," meaning that it limited access to other programs. Some found this restriction frustrating, like Rosemary, who reported having "trouble getting out of the program to check my email or Facebook." Nick wrote about feeling like he "couldn't 'leave' the software easily without closing the document and exiting the program entirely." Unlike Rosemary, however, Nick saw value in the way FocusWriter constrained his movement:

> It was trying to complicate the ability for a writer to become distracted and so extra steps for accessing other programs create a greater sense of intentionality around the act of "leaving" the writing behind.

In other words, the program did not so much prevent Nick from leaving as much as it built in extra operations to discourage him from doing so. Thus,

according to Nick, he had to be more "intentional" about exiting the program than he is with traditional word processors.

What these participants describe is a sense of immersion in the distraction-free software, of experiencing it as a space distinct from other possible activities. We have already seen Luke's desire "to get lost in one's writing and one's thoughts." Penny also appreciated the immersion she felt with Q10, where she "couldn't see the Mozilla icon begging to be clicked, or the flash of an instant message. I was in this space, and I kind of liked it as a space for brainstorming and freewriting." This is not to say that the sense of immersion was universally valued. Fiona wrote about feeling "isolated" by WriteRoom, and that she "never quite adapted to the solitude of writing" in it.

Distraction and focus are two sides of the attention coin. In this section, I have shown ways that participants experience distraction-free software, namely in its purported ability to focus attention and immerse writers in composing activity. That is to say, distraction-free writing tools do seem to have effects, though they are not uniformly positive. Some participants came to appreciate this sense of immersion, while others felt it was isolating.

Motivation

Another prominent theme across the reflective essays was motivation—how participants use digital tools to motivate themselves to write and to sustain focus on a writing task. Participants' consideration of motivation fell into two broad categories: (a) how their chosen applications contributed to their sense of motivation to write as they experimented with it and (b) how features of more traditional composing tools do (or do not) motivate writing. A key finding here is that writers employ mediational means, like digital composing tools, in order to manage their sense of progress and accomplishment, along with other affective dimensions of their writing processes.

While most of the software used by participants was designed to be "distraction-free," a subset of those applications had features intended to motivate writing through positive or negative reinforcement. One such tool was Written? Kitten!, a web-based application that allows users to set word-count goals, and each time that goal is achieved, an image of a kitten is displayed. Lindsey, who set her Written? Kitten! goal at 100 words, wrote, "I noticed that I wanted to keep writing, even if I felt tired or 'done,' because I wanted to see a kitten." Another participant, Nadine, experimented with Scrawl's motivational progress bars and "badges." At first, she found "the bars fun to watch, and the appearance of the badges surprising and delightful," but soon decided they were distracting when she "just typed gibberish into the screen just so I could watch them grow and see what would happen when they filled

up." Kittens and badges may motivate typing, but they may also become distractions from writing.

At the negative end of the motivational spectrum, Joseph tried out Write or Die 2, which allows the user to set goals to write a certain number of words in a specified amount of time. It also features what it calls "consequence mode," which can trigger a variety of unpleasant effects, like the screen turning red or an alarm sound, if the user stops writing. For Joseph, the experience was counterproductive:

> Whenever I stopped writing and my screen turned red, I felt I was under surveillance; Write or Die 2 was admonishing me for not writing and I felt forced to continue to write even when I needed time to reflect or to reread my thoughts.

Like Nadine, who typed "gibberish" in order to fill Scrawl's progress bars, Joseph "ended up writing mindlessly in order to avoid the red screen." These experiences suggest that writing tools built on behavioral models of motivation need to consider what "behavior" to reinforce. In the case of Written? Kitten!, Scrawl, and Write or Die 2, the rewards and punishments are meant to motivate writing, but perhaps what they really motivate is typing. It is as if the software posits a kind of economy in which writing is defined as the production of characters on a screen. Joseph's feelings of being under "surveillance" and "admonished" position him as a disciplined subject whose motivation to write results mainly from a desire to avoid punishment. While such motives may prove useful for writers struggling to focus their attention on writing, in Joseph's case it causes enough anxiety to prevent him from writing according to his preferred rhythms of drafting and reflection.

This is not to say that writers don't use tools to help motivate themselves. Several participants mentioned relying on word count as they compose. Some writing tools lack word or page count features, and some participants missed them. Nick, for example, was frustrated enough by FocusWriter's lack of a page count tool that he was "tempted to close the program for an instant and check the page number in a double-spaced Word document." Christine reported that the "lack of a word counter" in ZenPen "prevented me from knowing if I should continue or stop typing." Word and page counts matter, of course, when school writing assignments specify a target length, so it should perhaps not be surprising that students writing for a school context would be attuned to those kinds of metrics.

However, features like word and page count seem to do more for users than helping to track progress; they help writers manage their own experience. Keith wrote about how he uses word count:

> I find myself constantly looking down at Word's word count—not because I am necessarily trying to meet requirement minimums as quickly as possible, but because it's oddly comforting for me to have a constant sense of how much (or how little) I've been accomplishing.

The point here is that, in addition to helping writers manage specific task requirements, features like word and page count also seem to help writers manage their perception of that task. Keith finds word counts "oddly comforting," not just because it tells him how close (or far) he is to meeting assignment requirements, but also because it helps him monitor the activity and his sense of progress. Christine wrote that "word or page count is like a marker or a milestone that I have passed, and if I see that I am halfway or past halfway on the amount of text I am supposed to produce, I am motivated to keep going and finish." In her case, these metrics provide cues and motivators for continued writing. More than simple pieces of information, word and page counts function as sources of motivation and cues for writers to monitor their progress.

Materiality

A key theme to emerge out of participants' reflections was the extent to which writing technologies are experienced and perceived in relation to other writing technologies. While most participants compared distraction-free tools with more standardized word processing software, there were also comparisons with nondigital technologies like typewriters, pen and paper, and journals. For example, Luke referred to WriteRoom as "some sort of futuristic typewriter," while Sergio reported there were "many times using [ZenPen] where I felt like I was writing with pen and paper." What these and other participants seem to be describing is the experience of composing in a stripped-down or minimalist environment, without the menus and icons. That is, an absence of the advanced features of word processors reminded participants of writing with nondigital tools like typewriters and pen and paper. In this way, working with distraction-free tools prompted participants to relate them to other material practices.

The connections participants made between distraction-free tools and nondigital writing technologies might also be understood as an example of what Bolter and Grusin (2000) call "remediation," defined as "the representation of one medium in another" (p. 45). It is noteworthy that early distraction-free tools borrowed the appearance of green-on-black CRT monitors of early days of personal computing, and thus appropriated—or remediated—past technologies for writing with computers. But, as with Luke and Sergio, that

remediation also extends to nondigital tools like typewriters and pen and paper. Sylvia wrote about how ZenPen "reminded me of when I used to write poetry in my Rhodia notebooks during my lunch break." It is not the case that ZenPen's design resembles a notebook; instead, she attributes this association to the software's "minimalism." What her notebooks and ZenPen share for her, then, is their stripped-down quality: "The ZenPen platform was able to transport me to an 'analogue' space where I was basically writing in my Rhodia notepad, except on the screen." Sylvia's wording is key here, as she talks about being "transported" to a "space" (more spatial framing) she perceives as "analogue" or nondigital, even though this distraction-free tool is a web-based application running on her laptop.

One of the interesting ways materiality of text emerges in participants' reflections is attention to what Haas (1996) refers to as "text sense," or the "mental representation of the structure and meaning of a writer's own text" (p. 118). As they composed with distraction-free writing tools, some participants struggled with a perceived disruption in the way they ordinarily construed their own texts. Renee, for example, reported feeling as if "the text I was producing was somehow less polished and that it belonged more in a free writing space and not in a completed draft." She returned to this theme repeatedly in her reflection, comparing her sense of the text against her usual experience: "I felt like my paper wasn't quite as professional or polished as it would be in Word." What these statements seem to indicate is that Renee felt less confident in text she produced using a distraction-free writing tool than she normally does with Word.

As Bray (2013) has pointed out, Microsoft Word's "emphasis on delivering professional-looking final products is perhaps not surprising given the importance of corporate customers to software development" (p. 203). These meanings and values embedded in the software can have consequences for writers, which Renee suggests as she reflects on how Word may have shaped her writing process:

> I think Word has enforced my habits of a long pre-writing process and then a short composing process because it perpetuates the illusion of completed work. Word documents appear to be polished and professional, allowing papers to appear deceptively completed even when they are in stages of drafting.

Not only does Renee acknowledge that the sense of "completeness" she experiences while writing with Word may be an "illusion," she also implies that this sense has significantly affected her writing process. It is not entirely clear from her reflection what distinction she makes between her "pre-writing process" and "composing process," but it seems from context that she uses Word only during the "short composing process." Renee's mental representation of

her own text—her *sense* of it—is the result of a complex interplay of how the software displays the text, how she has prepared to compose in her "pre-writing process," and the feeling of completeness as she composes.

Most significant, perhaps, is the implication that she composes text in such a way as to match the "polished and professional" appearance in Word. A writer's sense of a text, then, can be affected by how a composing tool's representation of it resembles (or remediates) other texts. Vincent wrote about how he normally composes in Word's "print layout view, which always shows me what my paper would look like if I printed it at that exact moment." So, even as he composes in a digital environment (Microsoft Word), his standard process is to write in a mode that visually simulates a completed, printed document.

Distraction-free writing tools, to some extent, reject this idea that digital texts should resemble printed documents. Nadine felt that composing in Scrawl "made it difficult to think of my text as a 'document.'" In both Vincent and Nadine's cases, though, experimenting with distraction-free writing tools led them to reconsider whether their usual process was the most effective. Even though she initially experienced it as frustrating, Nadine came to view Scrawl's representation of her text as "a useful disruption to standard writing metaphors." For his part, Vincent decided to use his experience composing with OmmWriter to change the way he composes with Word:

> I changed the default settings on Word to resemble OmmWriter more. I hid the formatting toolbars in order to remove the distraction of what my product should look like, and changed the view to "draft mode" so I'm looking at a blank space to write in, rather than a piece of paper slowly being filled in one line at a time. Furthermore, I do not change the view back to "print layout" until I am ready to make cosmetic changes to my draft prior to submission.

Vincent's encounter with a distraction-free writing tool did not convince him to adopt it for future use, but it did introduce him to a way of representing his text that he found appealing enough to incorporate into the more familiar environment of Microsoft Word. In other words, even though he did not adopt the tool itself, he borrowed from it a composing heuristic that he found beneficial. Though Word's default settings seem to afford a "print document" approach to thinking about texts, Vincent discovered that he could customize the interface to make it into a "blank space."

Process

Most participants considered distraction-free tools as best suited to use during early stages of the composing process. Some felt that they might work best at the very beginning of a writing project, like Sergio, who wrote that

ZenPen "is an excellent tool for free writing to start off an assignment," and Penny, who said "I like [Q10] as a brainstorming and free writing space—for those times I don't really want to write something and I tell myself to just start writing and see what happens." She goes on to call this part of her process "writing to discover," presumably since it is exploratory in nature, and occurs before she has a clear sense of direction. Other participants also used the terms "freewriting" or "brainstorming" to identify this early stage of their composing processes. Nadine, for example, explained her choice of writing tool by saying that "Scrawl seemed like it would be a good freewriting tool, so I decided to try and use it to brainstorm the first draft of an essay."

Participants identified some reasons they felt that distraction-free writing tools could help with freewriting and brainstorming. Christine explained that her aim while freewriting was "to get my ideas out in the open for me to play around with later." This framing of writing as externalized thought is echoed by Keith, who argued that FocusWriter "sees writing as existing in a void—it functions in a way that assumes that a writer needs only his own thoughts and a blank page to put those thoughts down on." It is not clear from these statements whether these writers felt they were recording fully formed "thoughts" or "ideas," though one participant, Penny, did write about the importance of "writing to discover": "I write to learn, I write to discover, and I could go on learning and discovering infinitely." So, freewriting and brainstorming function for these participants as heuristics for generating and recording ideas in the early stages of writing.

Of course, virtually any writing tool could be used to "freewrite" or "brainstorm." Anticipating this objection, Sergio wrote that "although I can also free write on any word program, what makes ZenPen ideal for free writing is that it doesn't have the stigma of being academically correct every single time." When using traditional word processors, that "stigma" comes from the features like spelling and grammar checkers, which prompt users to attend to correctness even at early stages of composing. Some participants noted that the absence of spelling and grammar checkers helped them avoid the distraction of editing and proofreading. For example, Joseph wrote,

> My first drafts are meant to be exploratory in nature but Google Docs does not recognize my purpose for writing. By contrast, Write or Die 2 encouraged me to type as many words as possible in order to maintain a steady rhythm. As I was using this program, I was not worried about incorrect grammar and I felt that the program wanted me to focus my attention on writing as much as possible.

One finding to emerge out of the reflections, then, is the recognition of different writing activities aimed at different purposes, but traditional writing

software seems not to support or enable separating those purposes. This kind of compression of the writing process relates, I think, to the sense some participants have of texts seeming more "complete" or "polished" in applications like Microsoft Word and Google Docs. But in this case, the absence of correction tools is experienced as liberating rather than constraining.

In addition to writing about distraction-free tools as useful for freewriting and brainstorming, participants appeared to express the idea that writing activity could be reduced or narrowed to the act of inscription. For instance, some participants wrote about putting "words on a page," such as Fiona, who described WriteRoom as "forcing the writer to simply put words on a page in order to get started," and Keith, who thought that FocusWriter's goal was "getting people to get some sort of writing on the page." The use of the material "page" metaphor is worth noting, not just because it further suggests how distraction-free tools remediate other writing technologies, but also in how it implies a kind of reductive view of writing—"reductive" because it reduces writing activity to the act of making marks in a particular medium.

This reductive view is also present in some participants' claims that distraction-free tools allowed them to "just write" or "simply write," such as Sylvia, who claimed that "sometimes, we just want to sit down and *write*" (emphasis in original). Such formulations suggest that, for these participants, writing is experienced as a complex interplay of multiple purposes and activities, like brainstorming, formatting, editing, and proofreading. Some of the frustrations participants experienced with their writing tools arose from the lack of support for some of these activities. At the same time, though, there is a sense that "writing" as an activity can be narrowed to textual production, or even just typing, and it was for this purpose that participants tended to value distraction-free tools. In the end, several participants, like Rosemary, ended their writing tool experiments by cutting-and-pasting the text they had produced into a more familiar environment:

> The software also encourages early stages of writing because you have to switch to another program to adjust and print your final product. After I finished with my assignment, I pasted it into Google Drive, so I could do some last-minute changes and then print it.

The fact that Rosemary and other participants felt the need to finish writing in Microsoft Word or Google Docs may be attributed to the absence of formatting and document layout tools in most distraction-free software. They may allow a user to "just write," but most writing activity (in this study, at least) involves more than just typing words.

Table 3. Summary of Findings.

Theme	Overview	Key findings
Habit	Writing practices are tacit habits and routines built up over time in relation to writing tools.	Habitual writing practices become more visible with the use of unfamiliar writing tools. The use of unfamiliar writing tools may be experienced as disruptive and lead to feelings of anxiety or frustration. Writing habits seem to have been formed in the context of using standard word processors like Microsoft Word or Google Docs. Writers may prefer familiarity over innovation in writing tools.
Distraction	Distractions from writing may be external or internal to a particular writing environment.	Networked communication (e.g., internet browsing, social media, and email) can be viewed as a distraction from writing. The interfaces of writing tools (including menus, toolbars, and icons) may be experienced as distracting. Features commonly found in standard writing tools, especially spell check and grammar check, may be distracting.
Focus	Writing is experienced as an activity that requires focus and concentration.	Distraction-free tools may help writers focus by limiting or removing distracting interface elements and features. Minimalist visual design may help writers concentrate while they compose. Digital writing environments may be experienced spatially, as spaces into which and out of which the writer moves. Distraction-free tools limit the ease of this movement.
Motivation	Writers use writing tools to manage their motivation to write.	Tools that motivate writing through positive or negative reinforcement may be distracting, or promote unproductive activity (e.g., typing gibberish). Writers sometimes use word- or page-count features in writing tools in order to track progress and motivate writing.
Materiality	Digital writing tools are experienced and perceived as material environments.	Digital writing tools may be experienced as remediated forms of analogue writing tools, such as typewriters and pen and paper. Writers' mental representations of their own texts may be affected by the tools they use to compose. Standard word processors that use WYSIWYG interfaces may habituate writers to think of their texts as primarily printed documents. Writers may find non-WYSIWYG interfaces disruptive and/or liberating.

(continued)

Table 3. (continued)

Theme	Overview	Key findings
Process	Different writing tools may be better suited to different stages of the writing process.	Distraction-free tools may be best suited to exploratory writing in the early stages of composing processes. Writers may operate with a reductive view of writing activity, as inscription, producing text, or putting words on a page/screen.

Summary of Findings

Throughout this section, I have explored themes and key findings that emerged out of participants' reflective narratives. Those narratives suggest the extent to which writing practices may be habits or routines built up over time with the use of particular tools and technologies. There is also a pervasive sense that writing is an activity that requires focus and concentration, and distractions from writing may come from multiple sources. Moreover, while some writing tools may attempt to motivate writing through systems of reward or punishment, writers seem to use more mundane features (like word and page count) to keep writing. And finally, while writing with distraction-free tools seemed to disrupt participants' sense of their own texts, they nevertheless viewed those tools as potentially useful at early stages in the writing process. Table 3 summarizes key findings from the study.

Discussion

When I first assigned this composing tool experiment to students, my hope was that trying out new tools and reflecting on their experiences would help them engage meaningfully with their own writing processes and the role of technology in their literate activities. As their instructor, I believe that the attention to detail and careful insight on display in their narrative reflections suggest that they were able to do so. Taken in the aggregate, though, this reflective work generated a promising form of qualitative data. Interviews, observations, or protocol analyses might have produced similar themes to those that emerged in this study, but I would argue that building this analysis on narrative reflections yielded answers to this study's motivation questions that may have remained obscure otherwise. That is to say, participants were writing from their positions in an academic program and career trajectory that primed them to reflect critically on their own literate practices. As they rendered their experiences in the form of narrative essays, they were in effect already selecting which aspects of their experience were meaningful. Analysis

of the data was largely an act of identifying themes that occurred across narratives, provides insight into the question of how writers—and their writing—were shaped by the tools they use to write, and contributes to our frameworks for understanding of writing tools.

A key finding of this study is the extent to which participants' habits and routines had already been shaped by writing tools, specifically the full-featured word processing software they were accustomed to using. This observation highlights how consciousness is shaped by personal history and cultural experience. As Porter (2003) puts it,

> The technological past matters. It shapes the writer and writes the body in significant ways—etching itself on the writer's consciousness and body, influencing how the writer learns to compose and how the writer communicates in a social milieu. Our ideologies about writing, about composing, about rhetorical situation are formed in these various technological pasts, etched by various technologies. (p. 389)

Unlike Porter, though, most of the study participants likely did not have personal histories with eraser-less pencils, typewriters, or even the early word processing software he describes. Instead, they have come of age (as writers, anyway) steeped in full-featured word processors and networked communication. Granted, some participants mentioned using notebooks and pen and paper for drafting texts, but all of them mentioned relying on Microsoft Word or Google Docs when it came to composing. As the findings here suggest, that history has shaped how they write.

One of the more interesting ways personal histories and cultural context shape writing lies in how writers conceptualize texts as they compose. Even though almost all the writing tools participants in this study used were digital, their "sense of the text" was grounded in material reality and (re)mediated by other writing tools and technologies. As Haas (1996) points out, writing is language made material, and the experiences of participants in this study suggest that the dominant mental representation of text, even in an increasingly digital age, is the printed document. Moreover, that representation is not simply an "in-the-head" phenomenon, but instead a coordination between writer and tool. This is an example of the kind of "dynamic engagement with the world" Brooke and Rickert (2011) point to, and of the way the writer and writing tool form a kind of "hybrid actor" (Gries, 2011).

However, it is worth pointing out that changing writing tools—that is, exchanging a more familiar word processor for a distraction-free tool—does not simply result in a new way of thinking. Participants in this study did not immediately abandon their material representations of text, but instead

experienced the change as either disruptive or liberating. That is to say, their habits of conceiving of their texts were formed in relation to standardized word processors, which have trained users to think of their texts as printed documents. In some respects, this seems to support Ong's (2002) claim that "print encourages a sense of closure, a sense that what is found in a text has been finalized, has reached a state of completion" (p. 129). However, that sense of closure is a habit built up by our personal histories with writing tools that either result in print documents or are digitally remediated versions of print. Perhaps, given more time to work with distraction-free tools, these writers would develop new habits and new ways of conceiving of text.

For example, distraction-free writing tools appear to encourage users to think of writing as producing content without any particular form. This difference in conceiving of text is key. Arola (2010) has pointed out that the template-driven aspect of Web 2.0 rendered the visual design or form of web pages "standardized and invisible" (p. 4), so that platforms like blogs become empty vessels into which content may be poured. It is perhaps no coincidence that distraction-free writing tools emerged not long after the rise of Web 2.0, since they provide an environment in which to produce clean, unformatted text ready to be cut and pasted into preexisting templates governed by style sheets. However, this way of understanding text as content to be formatted later was unfamiliar to participants accustomed to the "what you see is what you get" (WYSIWYG) interfaces of most word processors. As Wolff (2013) points out, the approach of Web 2.0 "requires users to conceive constantly of what is not there, in front of them, on their screen at that time" (p. 222). In the case of distraction-free tools, participants in this study had trouble imagining the text they were producing as future printed documents. The result was a mismatch between users who were habituated to think of form and content synchronically, and tools that treated formatting and the production of text diachronically.

In other words, timing matters. Participants differed significantly in how they preferred to sequence tasks during the writing process. Some appreciated how distraction-free tools allowed them to produce text without attending to format or layout. Others missed having the full range of standard word processing features available at all times. The point here is not to declare one approach better than the other, but rather to acknowledge that different digital writing tools may align more or less with an individual writer's preferences. That writers even have such preferences, and that those preferences may result more from habit than conscious choice, is an important finding. In order for writers to make informed choices about what tools will help them "tune their environments" and "build durable and fleeting contexts for their work" (Prior & Shipka, 2003, p. 228), they may benefit from opportunities to experiment with different tools, and to develop strategies for selecting tools that help them accomplish their writing goals. We might begin to think of this

as a kind of *kairotic* tool selection—matching tools and technologies to opportune moments in the writing process. One potential barrier to such experimentation and reflection, however, is the ubiquitous nature of standard(ized) word processors like Microsoft Word and Google Docs. Prior to encountering them in our seminar, most participants in this study were unaware that alternative writing tools existed. Awareness, then, is an important first step. Studies like this may play an important role in making such tools more visible to writers, writing teachers, and writing researchers.

Distraction-free writing tools may not be appropriate for everyone or for all writing tasks, but in offering alternative ways of conceiving text, they help us reflect critically, like Nietzsche, on ways "our writing tools are also working on our thoughts." Continued research is needed to better understand how writing tools and technologies may affect practices over time. One limitation of this study is how little time participants spent trying out new tools, so future work might consider how new or altered practices unfold over time and in relation to different tools. Continued research might also consider these technologies in other dynamic contexts outside of school settings. Moreover, I would suggest that designers of writing software would do well to consider more carefully the relationships between users and the tools they create. Developers of alternative writing applications should consider how potential users have had their practices—and ways of thinking about writing—shaped by past entanglements with word processors. Likewise, one could argue that software engineers working on the latest iterations of standardized writing software, like Microsoft Word and Google Docs, could give more thought to how their tools shape users. As this study has begun to demonstrate, our personal histories and engagements with such technologies can have a lasting impact. In short, we need to pay more attention to our writing tools, because tools matter.

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Notes

1. For more detail about this assignment, see Ching and Ching (2012).
2. The data for this study were collected in accordance with the standards and guidelines of the human subjects review board at my home institution at the time of collection.

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