Machine Poetics and Reading Machines: William Poundstone's Electronic Literature and Bob Brown's Readies

*Jessica Pressman**

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

A recent essay in the *New York Times Book Review* titled "The Godfather of the E-Reader" suggests, "if you're searching for a godfather of the reading machine, you might look past Jeff Bezo and Steve Jobs to a nearly forgotten early-twentieth-century writer and impresario named Bob Brown" (Schuessler 27). Robert Carlton (Bob) Brown, an American experimental writer of the modernist period, shared a social network with the likes of Williams Carlos Williams and Gertrude Stein, and planned to build a reading machine that would speed up the pace of reading literature and thereby change the kind of literature we read. He called his machine "The Readies." "Revolutionize reading and a Revolution of the Word will be inkless achieved," he writes (*Readies* 35).[1] The Readies was never built and has been nearly forgotten by literary history; so too has Brown remained on the margins of literary history.[2] But recent events in the evolution of digital reading machines prompt excavation of the Readies and reconsideration of it as a vital part of the genealogy of contemporary technopoetics and literary practices.[3] The essay pursues such excavation by reading the Readies in relation to recent machine-informed poetics of electronic literature. I present Brown as godfather of a contemporary generation of writers experimenting with the newest reading machine, the digital computer. I claim

**Jessica Pressman* is an Assistant Professor of English at Yale University. She researches and teaches twentieth- and twenty-first-century experimental American literature, digital literature, and media theory. Her full CV is available online at http://jessicapressman.commons.yale.edu.

American Literary History, vol. 23, no. 4, pp. 767–794
doi:10.1093/alh/ajr036
© The Author 2011. Published by Oxford University Press. All rights reserved.
For permissions, please e-mail: journals.permissions@oup.com

that technologies of reading, not just writing, are an integral part of American literary history. This essay examines the influence of mechanical reading machines—the Readies and the computer—on literary poetics and close reading practices.

By "reading machine" I mean a mechanized device that stores and presents literature, not just a readerly prosthesis for accessing text.[4] These reading machines participate in producing the literary experience by, in some sense, reading or processing the text before (and in able for) the human reader to do the same. The literary texts I examine in this essay were written expressively for their reading machines. The poetics they pursue are thus dependent on the reading machine and, indeed, inseparable from it. It is this situation, in which the reading machine is intentionally employed in the service of a medium-specific technopoetic, that I call "machine poetics." Machine poetics expose the reading machine to be part of the literary process and thus subject to literary analysis.[5] Of course, in comparing the Readies and born-digital literature I am eliding the differences between analog and digital reading machines. These differences are inarguably crucial, but explicating them is not the focus of this essay.[6] My effort here is to show how reading machines and machine poetics have a foundation in literary history that precedes the digital computer and goes back, at least, to modernism. In no way do I mean to equate digital and analog technologies but rather to claim that the various and diverse technologies subsumed under the descriptions of "digital" and "analog" should be included in our understanding of, and critical approaches to, literature. I begin with a work of digital literature that remediates an earlier and now obsolete reading machine in ways that simultaneously illuminate and obfuscate the layers of technologies involved in delivering the literary text. I argue that this techno-reflexivity is not only central to the literary works examined in this essay but also to understanding how literary study is always already a media-informed practice.

1. Reading the Remediation

William Poundstone's web-based Flash animation "Project for the Tachistoscope [Bottomless Pit]" (2005) demands unpacking or, rather, excavation.[7] This is evident in the work's title, which uses brackets to bury the subject of the narrative, a story about a bottomless pit, and make this content subsidiary to its larger formal project: the act of technological remediation at its center. "Project for a Tachistoscope [Bottomless Pit]" resurrects an older, now-obsolete reading machine, the tachistoscope, through a newer

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

one, the digital computer. Jay David Bolter and Richard Grusin define "remediation" as "the representation of one medium in another" and claim that remediation "ensures that the older medium cannot be entirely effaced; the new medium remains dependent on the older one" (*Remediation* 45, 47). N. Katherine Hayles refashions the idea of remediation into "intermediation" to express how relationships between media are not limited by a linear model of evolution (between older and newer media) but include cyclical and recursive interactions (*My Mother* 33). This latter concept more appropriately describes what is happening within "Project for the Tachistoscope [Bottomless Pit]" in the relationship it crafts between the tachistoscope and the digital computer, and also the genealogy I trace between this contemporary work and Brown's modernist machine poetics. Poundstone presents intermediation as an aesthetic practice, one that illuminates the complex ecologies of technological and literary processes involved in reading. His remediation of the tachistoscope through the computer purposely complicates our understanding of either technology and prompts reconsideration of that older technology by situating it within a literary context.

The tachistoscope, whose etymology combines the Greek word for speed (*tachistos*) with the act of viewing (*skopein*), is just that—a speed-viewing machine. It was developed in the latter-half of the nineteenth century and used into the twentieth century for psychological and cognitive research. It projected a series of fast, flashing images at a single location upon which a seated, staring viewer focused intently.[8] The tachistoscope was used to measure attention and memory, and also to enhance recognition and reading speeds.[9] But the machine also focused attention on how new technologies effect reading practices. Jonathan Crary identifies the tachistoscope as pivotal to the emergence of modern visuality and subjectivity, in particular, the concept of attention.[10] The tachistoscope thus becomes a medium that shapes our idea of what it means to read and to be a reader. Poundstone's adaptation of the tachistoscope—produced through the computer, the Flash authorware, and the Internet—begs the question: what does the latest incarnation of the tachistoscope tell us about what *we* take to be quintessential modern qualities of reading and of contemporary readers? "Project" is a speed-viewing experience but, I argue, it promotes close or deep reading. It thus complicates notions that speed reading and hyper attention are opposed to close reading and deep attention.[11] "Project" shows how literature can bridge the gap (or the pit) by inviting *both* hyper and deep attention in ways that promote reflexive attention to the media-specific act of reading; the work exposes both types of reading practices and

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

experiences, not just the hyper attention, to be dependent upon media.

As its title implies, "Project" practices remediation in order to promote an excavatory reading practice that unites close reading and media archaeology. Media archaeology is a method of examining the cultural conditions that make possible the emergence of new technologies, and recognizing that our reading practices are shaped by historical contexts and media formats renders media archaeology a vital practice for literary criticism. Following Michel Foucault and Marshall McLuhan, media archaeology focuses on what Friedrich Kittler calls "discourse networks": "the network of technologies and institutions that allow a given culture to select, store, and produce relevant data" (369). Media critic Erkki Huhtamo describes media archaeology as having two main goals: "to study the cyclically recurring elements and motives underlying and guiding the development of media culture" and to promote "the 'excavation' of the ways in which these discursive traditions and formulations have been 'imprinted' on specific media machines and systems in different historical contexts" (n.p.).[12] In Poundstone's digital work, the tachistoscope becomes a medial layer to be excavated and examined anew for its aesthetic effects and influences. "Project" remediates the experience of "reading" through a tachistoscope. I place the word "reading" in scare quotes because the question of whether one reads or sees, comprehends or consumes, is precisely what the tachistoscope was often used to measure.[13] "Project" employs Flash software to remediate the experience of reading via a tachistoscope in ways that complicate the distinctions and hierarchies separating attention and distraction, passive and active reading, deep and hyper attention. It makes these deconstructive moves in and through a focus on media that directs attention on the technological means through which text is presented, i.e. the reading machines that are a neglected but vital part of literary history. "Project" promotes media archaeology by initiating the excavation of an older technology and creating a situation wherein it can be viewed in relation to contemporary reading machines and the literary experiments they support. The result is a literary work that theorizes its own medial layers and encourages the reader to do the same. Excavation is the work's central operational metaphor, and the reader learns to approach it *through* its layers of media and remediation. Specifically, as I will show, this is a work best approached by renovating the practice of close reading and conjoining it to media archaeology to produce a critical method that enables rediscovery of not only media forms but also literary texts and practices.[14] To see how this happens, we now turn to Poundstone's work.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

"Project" narrates the story of a natural and unexplainable bottomless pit that appears in the middle of the American Midwest, and the work's Flash-based, flashing aesthetic creates a pit of readerly attention on-screen. The work is an animation that continually flashes single words and images at the center of the computer screen. The central design feature of the work is a vortex at the center of the screen that centers attention there. Comprising concentric circles, it emanates depth and draws the reader's eye into its bottomless pit. The circles remain ever-present on-screen, shifting in color through variations of blue and pulsing in an ongoing movement of contraction and expansion (see Figures 1–3). Imagetexts flash atop this vortex, heightening the sense of depth and promoting a reading practice of digging deeper to unearth the multiple layers. A heavily synthesized electronic soundtrack accompanies the imagetexts with a steady, pulsating background beat that promotes a rhythmic reading pace and meditative tone.[15] When the music heightens in pitch and tone, throbbing more urgently, the reading pace also speeds up. But the work is extremely noninteractive: it proceeds as an animation and requires no input from the reader other than clicking Start. "Project" operates through a central paradox: it overwhelms the reader with multimodal stimuli in ways that force the reader to sit still, stare at the center of the screen, and passively consume the onslaught of flashing information. But, as I will show, this formal aesthetic promotes close, excavatory reading of the layers of narrative and media it possesses.[16]

The narrative describes a scene of deep, excavatory reading that elicits a similar type of reading practice from both the characters within the narrative and the reader at her computer screen. "Project" tells the story of a natural and unexplainable Bottomless

Fig. 1. Screenshot from William Poundstone's "Project for the Tachistoscope [Bottomless Pit]" (2005). Used with permission from the author.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Fig. 2. Screenshot from William Poundstone's "Project for the Tachistoscope [Bottomless Pit]" (2005). Used with permission from the author.

Fig. 3. Screenshot from William Poundstone's "Project for the Tachistoscope [Bottomless Pit]" (2005). Used with permission from the author.

Pit which is actually, I argue, a parable about reading. The narrative begins by detailing how construction efforts to build a highway near the pit proceed without problem or delay until, on the 59th day, workers "felt the ground rocking beneath their feet. Those who could run to safety did. Behind them a great chasm opened in the earth. 73 workers and nearly four million dollars worth of government equipment disappeared into a cavity of unknown depth." In response, "The state brought in geologist Nelson Playfair who had experience with deep wells." This specialist's task was to read and explain the Pit, but "Playfair's attempts to measure the depth of the Pit by triangulation failed owing to poor visibility at the lower levels." He could not see, so he could not read. The next line of the narrative implies that failure to read the Pit is not simply a failure of inappropriate reading technologies (i.e. illuminating machines) but of a larger,

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

more systemic problem: "The Pit is not an isolated phenomenon. It is only an extreme case of what has been happening all along in this region where integration of geologic layers has become compromised." The earthly foundation that previously appeared seamless and stable suddenly shifts. As a result, readers of all sorts—from geologists to neighbors and tourists alike—journey to the pit to explore and try to explain the situation. The sinkhole becomes a symbolic entity, a thing to read. The literary work produces a parallel between the diegetic world and the reader's own. The last line of the narrative secures this parallel: "In recent years the Pit has both widened and gotten alarmingly deeper," implying that the pit and readings of it will continue to expand. This is reinforced formally, for the work does not stop, pause, or loop back to the "Start" screen; it plays continuously, repeating its text without a discernible break. The story about a bottomless pit becomes a bottomless pit for a reading experience that performs its message: the foundational layers upon which we as readers have built our methodologies for accessing and interpreting texts are in a state of seismic shift due to digital technologies.[17]

Poundstone's allegory of our medial moment begs the question, how do we practice close reading when the foundations on which we see, read, and know have shifted so immeasurably that we know not even where to focus our gaze?

Poundstone's allegory of our medial moment begs the question, how do we practice close reading when the foundations on which we see, read, and know have shifted so immeasurably that we know not even where to focus our gaze? Digital textuality involves so many layers of semiotic and operational codes and processes that it challenges our ability to locate "the text." Scholarly attention has recently shifted away from focusing on the content displayed on-screen to analyzing the programming codes, machines, and platforms on which text is distributed.[18] It is my contention that such critical investigations are valid and fruitful, but they should not replace analysis of the aesthetic effects produced through these efforts, for these are the very reasons people write and read literature in the first place. "Project" is an exemplary instance of digital literature that promotes awareness of the technological layers involved in its production but does so through its onscreen aesthetics.

2. Digging Deep

Before the work begins, Poundstone trains his reader to approach the piece. When the reader moves her mouse towards "START," a circle of icons pop-up on-screen and frame the START button. Clicking these icons opens screens that contain static expository texts that situate the work in a very specific historical context (see Figures 4 and 5). "The starting point of this

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

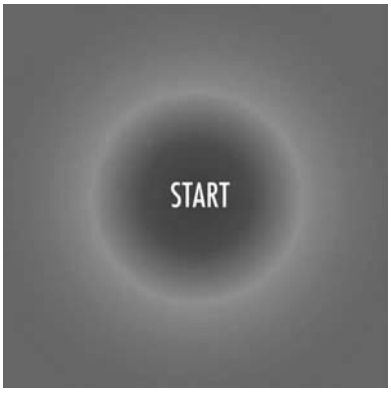

Fig. 4. Screenshot of entry portal for William Poundstone's "Project for the Tachistoscope [Bottomless Pit]" (2005). Used with permission from the author.

Fig. 5. Screenshot of entry portal for William Poundstone's "Project for the Tachistoscope [Bottomless Pit]" (2005). Used with permission from the author.

piece is the historical coincidence that 'subliminal advertising' and 'concrete poetry' were introduced as concepts at nearly the same time," Poundstone writes ("Artist's Description" n. pag.). That time is the 1950s, when corporate advertising became an art form and an object of study. In 1951, Marshall McLuhan, founding father of media studies, published his first book, *The Mechanical Bride*, an effort to close read advertising. The preface opens by claiming, "Ours is the first age in which many thousands of the best-trained individual minds have made it a full-time business to get inside the collective public mind. Why not assist the public to observe consciously the drama which is intended to operate upon it unconsciously?" (v). McLuhan applies the literary practice of close reading to the paratext of consumer culture and gives birth to media studies. Poundstone never mentions McLuhan but instead highlights Vince Packard's bestselling and hugely influential book,

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

The Hidden Persuaders (1957), which shared McLuhan's effort to make visible advertising's hidden operations. *The Hidden Persuaders* introduced into the public imagination the idea that Madison Avenue advertising firms were manipulating public opinion and consumer desire at the subliminal level. Packard describes advertising as "tak[ing] place beneath our level of awareness; so that the appeals which move us are often, in a sense, 'hidden'" (31). This "depth approach" to advertising prompts Packard, like McLuhan, to motivate readers to approach advertisements in a new way, namely, to read deeply and excavate hidden meaning.[19] Poundstone employs this cultural history as a framing device for his Flash-work full of icons appropriated from consumer culture. He does so, I argue, in order to elicit the type of suspicious reading style McLuhan and Packard promote: deep or excavatory reading.

Poundstone promotes this type of reading practice by locating the convergence of subliminal advertising and concrete poetry in a particular example. When Poundstone claims, "Subliminal advertising is coeval with concrete poetry," he gives a specific date for their co-origin: 1957.[20] This is the year *The Hidden Persuaders* was published, but it is also the year of the most infamous use of subliminal advertising in American culture: "In September 1957 ad man James M. Vicary announced that he had used a device called a tachistoscope to flash spilt-second ads during movies. The ads, too fleeting to be perceived consciously, worked. One that said 'Drink Coca-Cola' increased sales 18.1 percent. A similar ad for popcorn boosted sales 57.5 percent."[21] Vicary's famous stunt, which he later claimed was a hoax, has been identified as the first public experiment in subliminal advertising. Poundstone concludes his text describing this event with a quote from Vicary (his 1962 admittance to *The Advertising Age*): "This was a gimmick." This text is displayed in large, bold, red letters and produces a visual parallel with the only other sentence similarly composed of large, bold, red letters on the screen: "Drink Coca-Cola." These are the words Vicary supposedly superimposed onto frames from the movie *Picnic* (dir. Joshua Logan [1955]) that he then projected in a New Jersey movie theater. But these are also the words from Decio Pignatari's famous concrete poem "bebe coca cola" which is also from 1957. In 1957 Augusto de Campos, Decio Pignatari, and Haroldo de Campos published *Pilot-Plan for Concrete Poetry*, a manifesto for a new, visual poetics. Poundstone places Vicary's advertising ploy on par with concrete poetry and describes both as "pivotal 1957 achievements." He thereby locates a shared origin and conjoined genealogy for these seemingly antithetical cultural practices.[22] In so doing, Poundstone invites his reader to consider

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

the characteristics shared by these three unlikely textual genres: subliminal advertising, concrete poetry, and digital literature.

Subliminal advertising shares with concrete poetry an understanding that reading happens on multiple levels *through* the specificities of media. In the case of concrete poetry, text is a visual medium and a poem a thing to be seen.[23] Reading concrete poetry is thus an act of deriving meaning from the visual arrangement of these text objects on the page, and the page (or screen) is itself understood to be a medium; its white surface has significance, making the void in concrete poetry, like the pit at the center of Poundstone's narrative, a space that is not empty but, rather, full of meaning.[24] Similarly, subliminal messaging is a text-based act (particularly in Vicary's experiment) that figures the void between the visible and hidden as a space for communicating meaning *through* the intervening speed of the reading machine.[25] Poundstone constructs a parallel between concrete poetry and subliminal messaging that illuminates the role of reading machines in both textual practices.[26]

But how can concrete poetry—that genre of experimental poetics that is decisively visual—be subliminal? What are the implications of identifying poetry as something that escapes consciousness and close reading? As this is a case of digitally produced poetics, one could assume that the machine reader (and not the human reader) is the only one capable of accessing the entire text, and that this fact alters the role and relevance of poetry. But this is not my pursuit here, for I am trying to make a smaller but more concrete claim. "Project" makes apparent that some part of reading operates unconsciously and *through* our reading machines. Poundstone's project in "Project" is to foreground the reading machine as a medium *and* a mediator in literary experience, an element of literature and literary history that is meaningful and deserves to be read. He makes this point not only by drawing a conceptual parallel between subliminal advertising and concrete poetry but also by actually adding a layer of subliminal text into his machine-based visual poetry.

At a certain point in the animation, white and black words flash at unreadable speeds behind the main narrative. Unlike Vicary's experiment on unsuspecting moviegoers, however, Poundstone directs his reader's attention to this hidden text and makes reading it a central ambition. "The piece is, as far as I know, the first to use subliminal effects in a work of electronic literature" ("Author Description" n. pag.). Poundstone primes readers to read by digging, to focus on the vortex at the screen's center in order to procure the hidden text it supposedly contains. But regardless of how carefully you read "Project," its deepest layers of text remain inaccessible for media-specific or, more precisely, for reading machine-specific reasons. The human reader

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

cannot access the programming and computer codes that enable the computer's operations. This inaccessibility is heightened because the work is built in Flash, a proprietary authoring tool for creating animations that hides the operational code from author and reader. Flash is also shrouded in a layer of copyright laws that renders its operations illegible at yet another level.[27] The sense of subliminal depth in this particular work thus penetrates from the level of software up to the screenic content about a bottomless pit. In addition, the way that Flash actually functions furthers the sense that it, as a program, operates in a subliminal way. Flash is a vector-based tool that produces animations by creating visual transitions called "tweens" between two locations or "keyframes" (the unit of measurement and programming into which authors insert content into the authorware's interface). The software-produced animated transition or "tween" (hear "between") sutures keyframes to produce a fluid animation. The tween is the invisible stitch, the registered but not recognized code at the heart of Flash and works produced in it.[28] It is thus akin to the subliminal messages flashing on-screen between the visible words of Poundstone's "Project." This technical detail exposes how reading the operations of the reading machine can unearth new layers of metaphor and meaning for literary analysis. I mean to suggest that such reading practices apply not only to this particular work or to digital literature more generally but also to all literature. Poundstone's "Project" promotes recognition that literature and our means of reading it are dependent on reading machines and, thus, these technologies should be part of literary analysis. I pursue this point in the second half of this essay by pushing against Poundstone's claim that 1957 is the origin point for "Project" to dig deeper and excavate an earlier origin in a nearly forgotten reading machine and then read it in relation to the Flash-ing poetics of Poundstone's digital literature.

3. The Readies

"The written word hasn't kept up with the age," Bob Brown proclaims in his Readies manifesto from 1930, "We have the talkies, but as yet no Readies" (*Readies* 1). To remedy this situation, Brown proposed to build a reading machine that would produce "a moving type spectacle, reading at the speed rate of the day with the aid of a machine, a method of enjoying literature in a manner as up-to-date as the lively talkies" (*Readies* 1). The Readies was never built, but its excavation as a conceptual project for machine poetics has renewed significance in a contemporary digital culture fascinated by digital reading machines.[29] In what follows, I present

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Brown's modernist literary experiment, contemporaneous with the tachistoscope, as a predecessor to Poundstone's Flash-ing animation in both its aesthetic and its ambition to imagine how a reading machine can influence new poetics and new reading practices.

Brown was a concrete poet before the term existed, and he sought to focus attention on the visual nature of poetry by jolting the reader from her slumber through the mechanical shock of a high-speed-reading machine. He dedicated his self-published pamphlet, *The Readies*, to "all eye-writers and all readers who want an eyeful." "Writing has been bottled up in books since the start," he writes, "It is time to pull out the stopper" (*Readies* 28). Pulling out the stopper meant allowing words to spill across the eye, to speed by in ways that would, he hoped, "breed a new kind of writing direct to the mind through the eye" (*Readies for Bob Brown's Machine* 161).[30] Brown writes, "I wanted a reading machine to carry my words faster and farther into the minds of others" (168). Carrying words "faster and farther into the minds of others" is the ambition of the particular type of machine reading that inspires Poundstone's "Project"—subliminal messaging. Although Brown is technically nondescript about how the machine will actually operate, it is clear from his letters that he intended his machine to produce a reading experience like that produced by the tachistoscope. He writes, "to get the idea of the reading machine you won't have to roll your eyes at all, just hold them still and imagine the following stream of words passing before them" (*Readies for Bob Brown's Machine* 153).[31] The Readies reader would focus on a single spot at the center of the machine's interface upon which "microscopic type on a *moveable tape running beneath a slot* equipped with a magnifying glass and [is] brought up to life size before the reader's birdlike eye" (*Readies* 13; emphasis added). The description resounds with Alfred W. Volkmann's, the physiologist who invented the tachistoscope in 1859, narration of how the tachistoscope operates—object "drawn on a strip of paper" becomes visible to the seated viewer who "fixate[s]" "at the exact point where the drawing is" and where will appear the next image (qtd. in Benschop 27). Jerome Rothenberg recognizes the similarity between the two reading devices and describes the Readies as "a tachistoscope-like reading machine" which, citing Brown, "runs on forever before the eye without having to be chopped up into columns, pars, etc." (qtd. in Rothenberg 9). Brown's conceptual machine has similarities with the tachistoscope and with Poundstone's digital adaptation of it, but the Readies was very much of its medial and literary moment.

Brown introduces the Readies as addressing the needs of a specific moment in the production and reception of literature. The

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

modernist moment is "more optical, more eye = teasing, more eye = tasty" so "modern word = conveyors are needed now" (*Readies* 12, 13). He writes these words as a reader of experimental literature: "I love every loveable Dublintender word James Joyce ever wrote and I gurgle with delight in the joyous jugfuls of Gertrude Stein" (*Readies* 12). Yet Brown identifies a gap between writing and reading, between the avant-garde practices of Joyce, Stein, and his fellow *transition* submitters and the actual pages of the journal on which "The Readies" is printed. This discrepancy separates literature from her sibling art forms because, while the other arts kept up-to-date by incorporating the new media technologies of the time, literature remained stuck in the proverbial mud of the static page. "In our aeroplane age . . . All the arts are having their faces lifted, painting [Picasso], sculpture [Brancusi] music [Antheil] . . . Only the reading half of Literature lags behind" (*Readies* 28). According to Brown, "writing [Joyce, Stein, Cumming, Hemingway]" has kept pace with innovation, but "Present day reading methods are as cumbersome as they were in the time of Caxton" (*Readies* 28). The problem lies not with literature but with modes of accessing it: "all I hold out for is more and better *reading* of the words we've got" (*Readies* 12; emphasis added). Implicit in Brown's discussion of the machine is a feedback loop between literature and its technologies of transmission, specifically between words and reading machines. He maintained that changing the way we read would in turn change what we write: "With written matter moving before the eyes new forms of expression will develop naturally and surely more expressive ones" (*Readies for Bob Brown's Machine* 185). For example, Brown anticipated that presenting text at technologically heightened speeds would purge literature of conjunctions and filler text, such unneeded words as Ezra Pound sought to excise in the first rule of Imagism: "Direct treatment of the 'thing'" (3). Brown writes, "My reading machine, by its very existence, makes a need for new words and demands the deletion of some worn-out ones" (*Readies* 26).[32] *The Readies* ends with a chart showing the words most often used in English texts, prepositions, and predicates that should waste away through the Readies's mechanic speed. His survival-of-the-fittest attitude towards language expresses an understanding that literature is materially grounded in ecologies of media operations so that wherein language, literature, and reading practices are entwined and mutually dependent. William Poundstone explores and aestheticizes this argument in "Project" seventy-five years after Brown's *Readies*.

Poundstone and Brown share the conviction that a mechanized reading machine bridges—serves as a medium between—

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

avant-garde and mass culture. Brown places the origin of the Readies at the heart of capitalistic culture in the narrative he presents of its conception. After a stint working on Wall Street he claims that he came to see how "The Wall Street ticker is a reading machine"; he explains, "We read the tape. Is passed before our eyes jerkily, but in a continuous line. Endlessly, at any speed, jerk, jerk, jerk, when the Market's pulse was fast; click, click, click when it was slow" (*Readies for Bob Brown's Machine* 166). It was the joint experience of reading modernist literature and Wall Street's ticker tape that gave birth to the Readies. "I had to think of the reading machine later," he writes, "because I read Gertrude Stein and tape-tickers on Wall Street" (*Readies for Bob Brown's Machine* 160). Stein and Wall Street are not usually aligned in critical narratives about modernism, but Brown saw their convergence through a focus on machine-based techno-poetics.[33] Before Poundstone could claim that subliminal advertising and concrete poetry are coeval, Brown asserted the same about modernist poetics and ticker tape. He hoped that the Readies would rectify a situation wherein "The low-brows are presently reveling their Movies and Talkies while the almost extinct high-brow is content to sit at home sipping his thin alphabet soup out of archaic volumes of columns" (*Readies* 41). An article from the *Chicago Tribune* dated 13 January 1930 and titled "Left Bankers Believe Bob Brown's Pill Box Book Reading Machine Will Help Them Absorb Dozen Gertrude Stein Novels in Afternoon" sardonically suggests that the reading machine will make difficult modernist works absorbable by speeding them up.[34] Indeed, Brown understood that changing the reading speed changed the reading experience. If a speed-reading machine can make Stein easy, then technology inarguably transforms literature. Brown and Poundstone pursue this assertion; each explores how technological speed pushes the liminal boundaries of perception in ways that challenge our understanding of what it means to read literature. When considered together, these experiments in techno-poetics focus our critical attention on reading machines as the keystone of literary innovation.

4. Readies for Bob Brown's Machine

Brown makes his case for the transformative effect of reading machines on literary innovation in the collection of modernist writing he compiles for his Readies. Brown published *Readies for Bob Brown's Machine* in 1931. This anthology contained short literary works by members of Brown's (and Stein's)

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

modernist circle.[35] Comprising nearly 200 pages of poems and short fiction, *Readies for Bob Brown's Machine* included works by prominent modernists such as William Carlos Williams, Gertrude Stein, Filippo Marinetti, Eugene Jolas, and Ezra Pound, as well as lesser-known writers. Hilaire Hiler writes in the preface that all of the works were "contributed by experimental modern writers [and have] been expressly written to be read on the reading machine" (7). Each work strives to capture the speed and movement of the machine through print typography and grammar in different ways. For example, Gertrude Stein's "We Came: A History" uses equal signs to indicate anticipated movement by the Readies machine: "=History is made by a very = Few who are important = And history is what that = One says. History is" (100); Eugene Jolas uses dashes in his "Faula-and-Flona," which begins, "The-lilygushes-ring-and-ting-a-bilbel-in-the-ivilee" (136); and James T. Farrell uses ellipses in "Sylverster McGullick": "Alarm clock shrieks . . . seven a.m . . . .last night's sheik . . . to-day's sheep . . . " (16) (see Figures 6 and 7).

The grammatical and visual icons represent imagined movements that the Readies machine might make, such as sliding shifts between screens or quick flashes in the style of the tachistoscope. These visual marks are an integral part of each text's poetic, but taken together they represent a collective literary effort to express the notational form for producing future, potential technological action. In other words, these poems are textual acts of programming. The pages of *Readies for Bob Brown's Machine* display modernist writers imagining how literary technologies transform literature.[36] It is, indeed, a captivating text that deserves to be resurrected (as it has been out of print since its first publication). But excavating the anthology of fascinating, mostly forgotten poems can also inform how we approach these modernist writers and even compel us to reconsider modernism more broadly in the newfound light of these experimentations with reading machines and machine poetics.

I will take just one example, a poem by a canonical writer that has been republished since its appearance in Brown's anthology. When read in the context of the Readies, William Carlos Williams's "Readie Pome" might encourage a different interpretation of the poet's famous statement, "A poem is a small (or large) machine made out of words" ("Author's Introduction" 256). In 1944, years after the publication of *Readies for Bob Brown's Machine*, Williams explains, "As in all machines its movement is intrinsic, undulant, a physical more than a literary character" ("Author's Introduction" 256). His statements are commonly read in a lineage of Imagism, wherein every semiotic mark works economically, concretely even,

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

— 100 —

is history because it is accompanied by reluctance. Reluctance is not necessarily history nor is decision.

I like white because dahlias are beautiful in color. Tube roses come from onions, in every sense of the word and the way of saying it is attractive to her.

How do you like what you have heard. = History must be distinguished = From mistakes. = History must not be what is = Happening. = History must not be about = Dogs and balls in all = The meaning of those = Words history must be = Something unusual and = Nevertheless famous and = Successful. History must = Be the occasion of having = In every way established a = Precedent history must = Be all there is of importance = In their way successively = History must be an open = Reason for needing them = There which it is as they = Are perfectly without a = Doubt that it is interested. = History cannot be an accident. = They make history they = Are in the place of it. = II = History leaves no place = For which they ask will = They be made more of = In case of the disaster = Which has not overtaken = Any one. Historically there = Is no disaster because = Those who make history = Cannot be overtaken = As they will make = History which they do = Because it is necessary = That every one will = Begin to know that = They must know that = History is what it is = Which it is as they do = Know that history is not = Just what every one = Does who comes and = Prefers days to more = Than ever which they have. = History must again be = Caught and taught and = Not be that it is tiring = To play with balls. = It is not tiring to go on = And make the needle = Which goes in and out = Be careful not at all = History is made by a very = Few who are important = And history is what that = One says. History is = This it is the necklace = Which makes pansies = Be made well of stones = Which they are likely = To be. This is not = History history is made = By them they make history. = III = One who was remarkable = Addressed them as follows. = Come when you like and = Leave when you

Fig. 6. From Gertrude Stein's "We Came: A History" in Readies for Bob Brown's Machine*, page 100. Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library.*

to stimulate vision and present visual poetry. But his claim that poetry is a machine takes on more than merely metaphorical meaning when considered in relation to his contribution to Brown's anthology; it becomes a mission statement. Here is Williams's entire contribution, entitled, "Readie Pome":

> "Grace-face: hot-pot: lank-spank: meat-eat:/
> hash-cash: sell-well: old-sold: sink-wink: deep-/
> sleep: come-numb: dum-rum: some-bum"

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

— 147 —

ringa bell rollup the . . . . . - - - - - - THICK-
FILM - - - - - - - COWCROWD faces
- - - - - hate detest detest - - - - - - - you too you - you
red dry glassskin lizards insolentbeautynone
- - - - - huwarm - - - - - smoke - - - - - jerknecks
over horn rim periscopettish hotlate cackledotes-
i-l-e-n-tover £ ✦ s ✦ d ✦ % % % 1,000,000 a
somuch sosososomuch nod-wise-dotty-acres good-
man & & talkrustle newssheets - - new wars whores
W-H-E-E-L-S-W-H-I-R-R-E-V-O-L-V-O-V-E-R ——
——————————————————————— s.mile-
ing-flatcoil-carrails-snakeshine-nonstop-ecstasies ——-
——————— SPINESPLINTERSTOP
topumble ig
foolhat ✦ knock offside seats 2 small for 2 jerk humid
windowrain / / / slantslope-arizona-mountain-oon -
(coldawmorning) - - aridry————————calm unhum
a n s a n dryf l e s h - - - - - i v e r————————
skysh imm e r - - - -airpurain - - - -banking a.
SUDdnd e s c ent puff - - - - - arcclear edges- - - - - -
(rubbd) - - - - - - - - . - - - C l e a n s p a c E - - -
- - - f a i n t pane race - -
lips c u r v e c l e a r (vast plain)
steeltrack——————————————————— horizontal
copface pops up props up p r o n e girlclearsmile
i l e i d e w i d e n s a w a y s l o w slick
i k - liquid brilliant e e t h e r s . a ✦ w a ✦
youngbodyvasespass float ✦ distant ✦✦✦ coming
here going distant ■→ vanish-E-E-Ns m o o t-
h o o l o o k s l o wkwik p a s s ing gazeflat ✦
up ✦ pass ✦ float ✦ clouds ✦ even ✦ drift ✦ after-
even vaporedges ✦ shred ✦ shedd ✦ light ✦ march
✦ tune ✦ unison ✦ even seen moon pulse ✦ silent
punctuate * ✦✦✦ on * ✦✦ on moon ✦ loom
o o m s evenlunar ✦ unison on ✦ on ✦ whitetorn
black endless shrededges ✦ shedding tornevenever
white irregular moment gone ✦ liquid light
momentumurmurregu larrevolve wheels whirrune
a s y t r i c kle of. blissombrake wave brain

Fig. 7. From Sidney Hunt's "MORNINIGHT CAR" in Readies for Bob Brown's Machine*, page 147. Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library.*

(*Readies for Bob Brown's Machine* 114). Even with the ambiguous technical descriptions Brown provides for the Readies, one can imagine how Williams's poem might be read on the reading machine. "Grace-face" would appear onscreen before being replaced by "hot-pot"; the same sequential replacement would happen with "lank-spank," "meat-eat," etc. The colons separate the text pairings into discrete poetic units, each of which occupies nearly the same amount of space on the page and makes them, in a sense, visually interchangeable. The colons also demarcate possible movement of the reading machine, changes between screen, so

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

that the poem's text-units would flash before the reader's eyes in a series of montage-like replacements. Rhyme supports this sense, for the word pairs operate through an internal serialization of phonemes: "gr" is replaced by "fa," while "ace" remains. The result is an aural and visual act of textual montage that breaks up the poem into a flashing series of linguistic elements. (I hope my description triggers comparisons to Poundstone's "Project," for Williams presents his poem as performing similarly on the Readies to Poundstone's Flash-based remediation of the tachistoscope.) "Readie Pome," as its title suggests, takes the reading machine as its subject while also presenting an instance of machine poetics and of programmable poetry.

Reading Williams's "Readie Pome" within the context of its original publication exposes it to be exemplary of the content in *Readies for Bob Brown's Machine*. Like other texts in that volume, Williams presents the reading machine as integral to his poem, both to accessing and to understanding it. When Williams's "Readie Pome" is plucked from the medial context of *Readies for Bob Brown's Machine* and republished in print (as in *The Collected Poems of William Carlos Williams: 1909–1939)*, it is a very different fruit indeed. The example provided by Williams's poem thus serves to remind us that media matters in the creation, presentation, and reception of literature; "Readie Pome" suggests that literary texts can promote media-specific analysis. Thus, they can also support critical acts of media archaeology on forgotten reading machines that in turn prompt reconsideration of the literary texts they inspire. This is also the project at the heart of Poundstone's "Project," a work that, as I have argued, performs and promotes media archeology in order to present that activity as a strategy for close reading literature. Excavating *Readies for Bob Brown's Machine* and reading it in relation to Poundstone's digital literature illuminates the modernist text to be an experiment in machine poetics that, like the digital work, depends on and refers to the reading machine that inspires it. It thus represents a literary genealogy of machine poetics that continues from modernism to digital literature and also serves as a crucial reminder that reading machines shape literature and should thus inform critical approaches to it.

5. Conclusions

By way of concluding, let me offer up one more little gem from Brown's treasure trove. The following short poem appears at the beginning of *The Readies*, and Brown introduces it with a challenge: "Here's a poem, believe it or not" (2). Brown's poem is

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

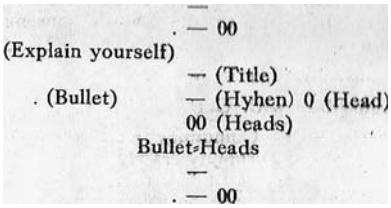

Fig. 8. Bob Brown's "Untitled Poem" in Readies for Bob Brown's Machine, *page 2. Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library.*

composed nearly completely of printer's marks, annotations used to format the appearance of the poem during the publishing process (see Figure 8). These markup tags signify the procedures for formatting, page layout, typesetting, etc., which produce and are usually unseen in the final printed product. Brown turns this hidden, programmatic language of print publishing into the semantic and visual content of his poem. He thus opens *The Readies* with a poem that visually acknowledges literature to be mediated by technological processes.[37] Reading this poem 80 years after its publication and through the lens of digital textuality illuminates another way of reading the technological protocols it encodes, one that Brown could not have foreseen. The visual marks that to modernist readers would have suggested the technical backend of print publishing bear a striking resemblance to HyperText Mark-up Language (HTML), the language that marks up webpages on the Internet.[38] Although it was published more than 60 years before the development of HTML, Brown's poem uses parentheses and language in a surprisingly similar way to HTML tags such as <HEAD>, <TITLE>, and <BODY>, which are laid out vertically in HTML source code. The tags in Brown's poem and in HTML both serve to structure the space of interface, either page or screen, so as to allow for the appearance of the literary text. In other words, by foregrounding the usually unseen mark-up code, Brown figures the page as an interface through which the poem appears via the reading machine of the codex. The layers of technologies involved in producing the text become the content of Brown's poem. His challenge to his reader is to believe that technological protocols (or code) constitute literature and thus deserve literary analysis. His "believe it or not" statement has the same effect as Poundstone's claim (also posed in the introductory screens through which one enters the work) that "Project" contains subliminal messages: both authors prompt readers to approach literature with a focus on media and, specifically, on reading machines.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Reading Bob Brown's Readies in relation to Poundstone's digital literature provides an opportunity to consider the connections between these writers and the literary periods and poetic practices they represent. As I have tried to show, the primary point of intersection between Brown and Poundstone is a shared effort to imagine literary revolution *through* the new media of their respective moments and, in particular, through new reading machines. Analyzing their efforts reminds us that literature is *always* dependent upon technologies of reading; moreover, that these reading machines not only enable access to literature but also inspire its creation and critique. Such recognition supports an approach to literature that might seem counterintuitive or even teleological, but a focus on reading machines opens new ways of seeing relationships between poetic practices and thus new ways of writing literary history.

Notes

1. An essay version of "The Readies" was also published in the journal *transition*, no. 19 (1930).

2. This circumstance is partly due to the fact that scholars have not known what to make of this writer of experimental visual poetry who also authored works that span such diverse genres as cookbooks and pulp fiction.

3. My critical approach builds upon the work of scholars such as Jerome McGann, whose textual criticism, particularly in *The Textual Condition* (1991), reminds us that literature is always created, distributed, accessed, and archived in material contexts and media-specific conditions that inform (whether we realize it or not) the ways in which we read and study literature.

4. Thus a book, scroll, or computer is a reading machine but eyeglasses or libraries are not.

5. Katherine Hayles coins the term "technotext" to describe such literature: "When a literary work interrogates the inscription technology that produces it, it mobilizes reflexive loops between its imaginative world and the material apparatus embodying that creation as a physical presence" (*Writing Machines* 25). I prefer "machine poetics" because it implies an aesthetic or poetic effect rather than a genre and can assist in describing the particular affect of a technotext.

6. I explore this topic in the larger project from which this essay is taken, a monograph entitled *Digital Modernism: Making it New in New Media*.

7. Poundstone is the author of 12 books of nonfiction and has been twice nominated for the *Pulitzer* Prize. His titles include *The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge* (1984); *Labyrinths of Reason: Paradox, Puzzles, and the Fragility of Knowledge* (1988); and *Prisoner's*

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Dilemma: John Von Neumann, Game Theory, and the Puzzle of the Bomb (1992). For the sake of brevity, "Project for the Tachistoscope [Bottomless Pit]" will hereafter be identified as "Project."

8. In her seminal article on the tachistoscope, Ruth Benschop explains, "it has become apparent that the answer to the question as to what the tachistoscope is, is not to be found only in the single and clear function an instrument has, the function that can be depended upon, the function that resides within the working instrument. Rather the establishment of that function takes different forms and unfolds in a diversity of places" (44). She writes, "All the varieties and forms of the taschistoscope can be organized by reference to what it is used *for*" (26).

9. In *Manual of Mental and Physical Tests* (1910), Guy Montrose Whipple explains that the tachistoscope's primary use is as a reading machine: "In the main, the tachistoscope has been most used for the experimental investigation of the *process of reading*, and, accordingly, with an exposure field containing printed texts, isolated words, nonsense syllables, single letters, etc., but it has also been used for determining the range of attention of the visual apprehension of groups of lines, geometrical drawings, objects, colors, etc" (222). During World War II, the tachistoscope was used to train pilots to quickly, even subliminally, discern signs identifying approaching planes as friend or foe. Psychologist Samuel Renshaw lent his name to the Renshaw Recognition System used by the United States Army and Navy for this purpose. In the civil sector, the tachistoscope was used to teach speed-reading as is evident in an advertisement from 1960 for "FLASH-X," a tachistoscopic device developed by Educational Developmental Laboratories, Inc., a division of McGraw-Hill Book Co., which, when used daily, "for five or ten minutes can produce a marked improvement in attention and concentration, speed and accuracy of perception, and visual memory" ("Front Matter" n.p.). For more on speed-reading, see Sue Currell, "Streamlining the Eye: Speed Reading and the Revolution of Words, 1870–1940," *Residual Media* (2007), ed. Charles Acland, 344–60.

10. Crary describes the tachistoscope as "part of a broad-ranging project to acquire knowledge that would allow a rationalization of a perceiver and the management of attentiveness" (306). Charles Acland agrees, describing it as "a material manifestation of what we take to be quintessential modern qualities: mechanized sight, Taylorist instruction, and contained and focused attention" (380).

11. See Katherine Hayles's distinction between deep and hyper attention as distinct cognitive modes. In "Hyper and Deep Attention: The Generational Divide in Cognitive Modes" she writes, "Deep attention, the cognitive style traditionally associated with the humanities, is characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times. Hyper attention is characterized by switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom" (187).

12. Following Michel Foucault, media archaeology focuses on the ruptures rather than the continuities in media history, as Wolfgang Ernst explains in "Dis/Continuities: Does the Archive Become Metaphorical in Multi-Media Space?" *New Media, Old Media: A History and Theory Reader* (2006), eds. Wendy Hui Kyong Chun and Thomas Keenan, 105–24. In her introduction to *New Media,*

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Old Media, Wendy Chun identifies media archeology as offering the opportunity for "seemingly forgotten moments in the history of the media we glibly call 'old' [to] be rediscovered and transformed" (9). Media archaeology also, I maintain, supports the excavation of literary works like (as I discuss later in this article) *Readies for Bob Brown's Machine* and promotes seeing anew through the lens of new media older, well-known works. For exemplary work of media archeology of the literary bent, see Lisa Gitelman's *Scripts, Grooves, and Writing Machines: Representing Technology in the Edison Era* (1999); Matt Kirschenbaum's *Mechanisms: New Media and the Forensic Imagination* (2008); Cornelia Vismann's *Files: Law and Media Technology* (2008), trans. Geoffrey Winthrop-Young; and Terry Harpold's *Ex-foliations: Reading Machines and the Upgrade Path* (2008).

13. For a survey of the many uses of the tachistoscope in cognitive research on optics and perception, see Edward C. Godnig, "The Tachistoscope: Its History & Usages," *Journal of Behavioral Optometry* 14.2 (2003): 39–42.

14. Harpold's recent *Ex-foliations* examines reading machines through a strategy of media archaeology that he terms "*ex-foliation*, meaning a loosely grounded set of procedures for provisionally separating the layers of the text's surfaces without resolving them into distinct strata or hierarchies, with the aim of understanding their expressive concurrencies" (10). While Harpold focuses mostly on Vannevar Bush's Memex and Ted Nelson's Xanadu hypertext system, precursors to the Internet and the literary genre it supported, our critical practices share the ambition to extend media archaeology to literary studies.

15. "Imagetext" is W. J. T. Mitchell's term. See *Picture Theory: Essays on Verbal and Visual Representation* (1994), 89 in particular.

16. I discuss a similar aesthetic at work in Young-hae Chang Heavy Industries's *Dakota* (2002), another web-based Flash animation, in my essay "The Strategy of Digital Modernism: Young-hae Chang Heavy Industries' *Dakota*," *Modern Fiction Studies* 54.2 (Summer 2008): 302–26. Whereas Young-hae Chang Heavy Industries, I argue, promotes close reading for the sake of compelling the reader to situate the digital work within a canonical literary history, Poundstone promotes close reading for a different purpose—to promote media archaeology.

17. Hayles describes the current medial shift as a kind of earthquake or "a shift in tectonic plates massive enough to send an earthquake roaring through the terrain of literary studies" (*Writing Machines* 39).

18. Here I am thinking of such new critical methodologies as Critical Code Studies, which, as Mark C. Marino writes, names the practice of "analyz[ing] the extra-functional significance of the code" (n. pag.) and the new book series from MIT Press, edited by Nick Montfort and Ian Bogost, called Platform Studies which, its website claims, "investigates the relationships between the hardware and software design of computing systems and the creative works produced on those systems" ("Platform Studies" n. pag.). Matthew Kirschenbaum uses the term "screen essentialism" to describe critical analysis focused solely on the screen rather than in the modes of storage and processing involved in producing the onscreen aesthetic; see *Mechanisms: New Media and the Forensic Imagination*, chapter 1.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

19. Poundstone explores the power of suggestion and persuasion in consumer culture in his most recent book, *Priceless: The Myth of Fair Value (and How to Take Advantage of It)* (2010). In *Adcult USA: The Triumph of Advertising in American Culture* (1996), James Twitchell argues that advertising and art have become inseparable and therefore, à la McLuhan, advertising deserves to be read with as much critical diligence as art.

20. Opening screen titled "Concrete Poetry and Subliminal Advertising."

21. Opening screen titled "Subliminal Con."

22. Foundational accounts of the avant-garde, such as Peter Bürger's *Theory of the Avant-Garde* (1984), identify the avant-garde as constituted by its opposition to bourgeois culture, politics, and consumer ideology. Exemplary is Adorno's claim that all art, not only that of the avant-garde variety, operates through an antagonistic and external position to the central cultural ideology (which would certainly include advertising). See *Aesthetic Theory* (1970), eds. Gretel Adorno and Rolf Tiedemann.

23. There are many helpful introductions to concrete poetry, but Johanna Drucker's essay "Experimental/Visual/Concrete" in *Figuring the Word* offers an excellent explanation. Drucker explains that a poem is "concrete" if "the work has a distinct shape on the page and loses a part of its meaning if it is rearranged or printed without the attention to the typeface and form which were part of the poet's original work" (111). The same is true of electronic literature, for it is distinctly digital in its design and cannot be printed out or transferred across media without a significant loss of meaning.

24. Poundstone's interest in concrete poetry extends into other works of digital poetry including "Four Poems" which also explores the relationship between advertising and avant-garde poetics. This series of short, Flash-based concrete poems animates the colors and iconography of different brand-name products (Nabisco, Mr. Goodbar, Nilla Wafers, and Tide) in ways that draw upon the reader's familiarity with the signs to subvert expected messages. See http://www.williampoundstone.net/Poems.html.

25. The first reporting on Vicary's experiment (at a press conference in which he announced his experiment) implies that the danger of "advertising's new weapon" is that it evades reading: "Advertising has simply gone underground . . . the company can get the word into your thoughts without causing you the awful inconvenience of having to see and read it" (Adler and McCarten 33). The description of advertising going underground means that to read it one must first excavate it.

26. He describes Vicary's experiment as a type of techno-textual poetics related to concrete poetry but also to the other family of experimental poetics that greatly inspires digital poetry: potential or combinatorial literatures such as Oulipo (which Poundstone references in an opening, expository screen) wherein the algorithm for producing a text effect is as important or more important than the end result. Vicary's statement about his experiment did indeed become a kind of algorithm for generative poetics: it stimulated the American cultural imagination in wide-reaching ways to consider (and fear) the potential of machine-based subliminal text. One can easily imagine how Vicary's claim to have subliminally

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

stimulated desire for Coke and popcorn in the minds of innocent moviegoers might generate hysteria in Cold War America. In January 1958 the FCC held a session open to Congressmen, members of the press, and other regulatory bodies to investigate Vicary's claims of media-based persuasive power in fear that such technology could be used to brainwash citizens for political ends. Stuart Rogers, for *Public Relations Quarterly* writes, "The National Association of Broadcasters boldly banned the broadcast of that which had yet to be proved to exist" (15).

27. Flash, formerly owned by Macromedia, is distributed by Adobe Systems.

28. I am grateful to Mark C. Marino for this insight. The similitude between tweens and subliminal messages in the Flash authorware also operates at the level of creation, as Julian Sefton-Green explains: "working in Flash can be a liminal experience" because "At the same time as users appear to be working intuitively, making marks on the screen and applying menus, some actions will expose the complete mathematical 'encoded' nature of all these actions" (107).

29. Literary scholars have begun the archaeology of Brown's Readies machine. Most notably, Jerome McGann, in *Black Riders*, describes Brown as "The visual tradition's most important modernist practitioner and theorist" and places Brown in a tradition of visual poetics that anticipates experiments like concrete poetry and thus also, as I argue, digital literature. Craig Dworkin also places Brown in the tradition of experimental poetry, specifically that which engages with technology. Dworkin, more than any other scholar I know, reads carefully the collection of poetry created for the machine (which I discuss later). Michael North's situates the reading machine in relation to the modernist media arts of photography and cinema, claiming that Brown saw the Readies machine as "a sort of modernist movie constructed of type" (76). But the connection between the Readies and contemporary forms of digital reading machines is overdue. The importance of Craig Saper's recent republication of many of Brown's publications (through Rice University Press) cannot be overstated, particularly since his informative afterword introduces Brown as both a modernist writer and a media innovator. But despite this handful of scholarly reevaluations, there is much work to do since, as I will show, Brown was a central node in the modernist matrix *and* in the history of modern media. My approach to the Readies builds upon the excavatory efforts of these scholars with a twist, for I read the Readies in relation to digital literature programmed to perform on a reading machine (the computer) in order to create a context for considering the parallels that emerge from the contemporary and modernist impulses towards machine poetics.

30. Augusto de Campos, leader of the international movement in concrete poetry, republished some of Brown's "optical poems" in an anthology titled *A Margem da Margem* (1989) in which he described Brown as a predecessor of concrete poetry "truly striking his own footpath among the calligramms of Apollinaire and the typograms of cummings, like those, his own manupictograms interpenetrating text and illustration" (127). Translation provided by Edgar Garcia.

31. Stymied by patent and engineering issues, the Readies remained a conceptual rather than actual machine. Brown was certainly more interested in imagining the literary potential of the machine than in building it, but his correspondence (contained in Special Collections at UCLA) shows serious efforts to have the machine built. His correspondence with engineer Albert Stoll (of National

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Machine Products Company) implies that the Readies might depict words scrolling rather than flashing; but it is also evident from these letters that Brown sought to use speed to elicit a flashing effect. Craig Saper has created a web-based interpretation of the Readies which depicts text scrolling: http://www.readies.org/.

32. "The up = to = date eye scarcely sees the 'thes', 'ands', 'ofs','as', 'ins . . . it picks out meaty nouns, verbs and qualifying words so placed as to assume importance; only essential words ever get over to the practiced reading eye, the bulky residue is overlooked" (36). The final table listing the non-"meaty" words is preceded by the following explanation: "Statisticians have found that in a novel of 80,000 printed words the following twenty-five are used the number of times indicated: The . . . .. 5,848/Of . . . . . .3,198," etc. (52).

33. Stein not only submitted a piece to Brown's collection for the Readies but also wrote a "portrait" of Brown titled *Absolutely Bob Brown, Or Bobbed Brown* (1955). Craig Saper writes, "Gertrude Stein understood that Brown's machine, as well as his processed text for it, suggested a shift toward a different way to comprehend texts. That is, the mechanism of this book, a type of book explicitly built to resemble reading mechanisms like ticker-tape machines rather than a codex, produced—at least for Stein—specific changes in reading practices" ("Afterword" 64).

34. The newspaper article is preserved as a clipping at UCLA Special Collections, Bob Brown Collection, 732, Box 32, Folder "Reading Machine."

35. Craig Saper writes, "Although some scholars now frame Brown as a dilettante of the European avant-garde, the modernists saw him as a precursor, and central innovator, to their revolution" (67). Saper's afterword in *The Readies* contains biographical information on Brown's fascinating life, but a full biography of this larger-than-life figure, whom Jerome McGann calls "that strange and arresting American, now academically forgotten, whose work culminates the extraordinary tradition of modern experimentalist writing" (84) and Augusto de Campos claims has been "strangely marginalized even by the marginal vanguard" (127), has not yet been written. The reasons *why* Brown has been forgotten by literary history are beyond the scope of this essay, but Saper does offer a few suggestions. First, the Readies manifesto was published (by Brown) in a limited run of 150 copies that "assured that it would pass into obscurity" (78); second, Brown's "huge success in popular genres of writing and the great variability in the types of his writing—have made it challenging for literary scholars to find a place for him" (78–9). These challenges are, of course, precisely why he is so intriguing.

36. Craig Dworkin describes the poems as self-conscious about their status as media objects, arguing that they "situate themselves in the uncomfortable position of a belated prolepsis: a presentation in book-form of the imagined literary effect of a technology that had yet to be produced and which would ultimately make the book obsolete" (60–1).

37. Brown's poem supports Jerome McGann's argument, most forcefully articulated in *Radiant Textuality: Literature after the World Wide Web* (2001), that print texts are—and have always been—marked-up by the technical and technological processes of print publishing.

38. At least, HTML could claim this position until Web 2.0 and XML emerged around 2004. Tim Berners-Lee is credited with inventing HTML and thus with

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

inventing the World Wide Web. For more on Berners-Lee and the development of HTML and the Web, see Berners-Lee, *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web* (1999).

Works Cited

Acland, Charles. "Introduction: Residual Media." *Residual Media*. Ed. Charles Acland. Minneapolis: U of Minnesota P, 2007. xiii–xxvii.

Adler, E. and John McCarter. "The Talk of the Town." *The New Yorker* 21 Sept. 1957: 33.

Benschop, Ruth. "What is a Tachistoscope?: Historical Explorations of an Instrument." *Science in Context* 11.1 (1998): 23–50.

Bolter, Jay David and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: MIT Press, 1999.

Brown, Bob. *The Readies*. Cagnes-sur-Mer: Roving Eye Press, 1930. Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library.

———. *Readies for Bob Brown's Machine*. Cagnes-sur-Mer: Roving Eye Press, 1931. Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library.

———. Untitled poem. *The Readies* 2.

Campos, Augusto de. *A Margem da Margem*. São Paulo, Brazil: Companhia das Letras, 1989.

Chun, Wendy Hui Kyong. "Introduction: Did Somebody Say New Media?" *New Media, Old Media: A History and Theory Reader*. 2nd ed. Ed. Wendy Hui Kyong Chun and Thomas Keenan. New York: Routledge, 2006. 1–10.

Crary, Jonathan. *Suspensions of Perception: Attention, Spectacle, and Modern Culture*. Cambridge: MIT Press, 1999.

Drucker, Johanna. "Experimental/Visual/Concrete." *Figuring the Word: Essays on Books, Writing and Visual Poetics*. New York: Granary Books, 1998. 110–136.

Dworkin, Craig. "'Seeing Words Machinewise': Technology and Visual Prosody." *Sagetrieb* 18.1 (Spring 1999): 59–86.

Farrell, James T. "Sylvester McGullick." *Readies for Bob Brown's Machine* 16–25.

"Front Matter." *Journal of Developmental Reading* 3.4 (Summer 1960): n. pag.

Harpold, Terry. *Ex-foliations: Reading Machines and the Upgrade Path*. Minneapolis: U of Minnesota P, 2008.

Hayles, N. Katherine. *Writing Machines*. Cambridge, MA: MIT Press, 2002.

———. *My Mother Was a Computer: Digital Subjects and Literary Texts*. Chicago: U of Chicago P, 2005.

———. "Hyper and Deep Attention: The Generational Divide in Cognitive Modes." *Profession* (2007): 187–199.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Hiler, Hilaire. "Preface." *Readies for Bob Brown's Machine* 5–8.

Huhtamo, Erkki. "Resurrecting the Technological Past: An Introduction to the Archaeology of Media Art." *Intercommunication* 14 (1995). 23 Aug. 2011 <http://www.ntticc.or.jp/pub/ic_mag/ic014/huhtamo/huhtamo_e.html>.

Jolas, Eugene. "Faula and Flona." *Readies for Bob Brown's Machine* 136.

Kittler, Friedrich. *Discourse Networks 1800/1900*. 1985. Trans. Michael Metteer and Chris Cullens. Stanford: Stanford UP, 1990.

Marino, Mark C. "Critical Code Studies." *Electronic book review* 4 Dec. 2006. 1 Aug. 2011. <http://www.electronicbookreview.com/thread/electropoetics/codology>.

McGann, Jerome. *Black Riders: The Visible Language of Modernism*. Princeton: Princeton UP, 1993.

McLuhan, Marshall. *The Mechanical Bride: Folklore of Industrial Man*. Berkeley: Gingko Press, 1951.

North, Michael. "Words in Motion: The Movies, the *Readies*, and 'the Revolution of the Word.'" *Modernism/Modernity* 9.2 (2002): 205–23.

Packard, Vince. *The Hidden Persuaders*. 1957. New York: Ig Publishing, 2007.

"*Platform Studies*." MIT Press. 16 Aug. 2011 <http://platformstudies.com/>.

Pound, Ezra. "A Retrospect." 1913. *The Literary Essays of Ezra Pound*. Ed. T. S. Eliot. London: Faber and Faber Limited, 1954. 3–14.

Poundstone, William. "Author Description" for "Project for the Tachistoscope [Bottomless Pit]." *Electronic Literature Collection*. Vol. 1 homepage. 23 Aug. 2011 <http://collection.eliterature.org/1/works/poundstone__project_for_tachistoscope_bottomless_pit.html>.

———. "Project for the Tachistoscope [Bottomless Pit]." 2005. *Electronic Literature Collection*. Vol. 1. Ed. N. Katherine Hayles, Nick Montfort, Scott Rettberg and Stephanie Strickland. 23 Aug. 2011 <http://collection.eliterature.org/1/works/poundstone__project_for_tachistoscope_bottomless_pit.html>.

Rogers, Stuart. "How a Publicity Blitz Created the Myth of Subliminal Advertising." *Public Relation Quarterly* 37 (Winter 1992–1993): 12–17.

Rothenberg, Jerome. "Bob Brown." *Revolution of the Word: A New Gathering of American Avant-Garde Poetry, 1914–1945*. Ed. Jerome Rothenberg. Boston: Exact Change, 1974. 9.

Saper, Craig. "Afterword: The Adventures of Bob Brown and His Reading Machine: Abbreviated Writing and Browsers Fifty Years Before Txt, Tweets, and WWW." *The Readies* by Bob Brown. Ed. Craig Saper. Houston: Rice UP, 2009. 61–77.

Schuessler, Jennifer. "The Godfather of the E-Reader." *New York Times Sunday Book Review* 8 Apr. 2010: 27.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011

Sefton-Green, Julian. "Timelines, Timeframes and Special Effects: Software and Creative Media Production." *Education, Communication & Information* 5.1 (March 2005): 99–110.

Stein, Gertrude. "We Came: A History." *Readies for Bob Brown's Machine* 99–104.

Whipple, Guy Montrose. *Manual of Mental and Physical Tests: A Book of Directions Compiled with Special Reference to the Experimental Study of School Children in the Laboratory or Classroom*. Baltimore: Warwick & York, 1910.

Williams, Williams Carlos. "Author's Introduction" to *The Wedge*. 1944. *Selected Essays of William Carlos Williams*. New York: New Directions, 1969. 255–57.

———. "Readie Pome." *Readies for Bob Brown's Machine* 114.

Downloaded from http://alh.oxfordjournals.org/ by guest on November 15, 2011