

### III Communications

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## 9 Text as Event: Calm Technology and Invisible Information as Subject of Digital Arts

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### Calm Technology and Postalphabetic Text

In their essay “Designing Calm Technology” (1995), Mark Weiser and John Seely Brown use an artwork to explain the concepts “ubiquitous computing” and “calm technology.” Natalie Jeremijenko’s 1995 *Live Wire* (also known as *Dangling String*) consists of an eight-foot-long string attached to a small electric motor that is mounted in the ceiling and connected to a nearby Ethernet cable so that the string twitches proportionally to the amount of traffic on the Internet and consequently whirls in degrees from mildly to madly. *Live Wire* is placed in the office environment of the Xerox Palo Alto Research Center Computer Science Lab and represents calm technology, for it allows “peripheral attunement” and—in contrast to screen displays of network traffic—does not require interpretation and attention.<sup>1</sup> In the artist’s words, “*Live Wire* is tacit information, rather than more of the precisely graphed, data fetishism of information rhetoric.”<sup>2</sup>

Weiser and Brown conclude their essay with the notion that despite frequent complaints about information overload, “more information could be encalming,” stating that “the way to become attuned to more information is to attend to it less” (1995). Mark Hansen, who refers to Weiser and Brown’s essay in his contribution to this book (chapter 1), considers Jeremijenko’s piece an example of the “sensory revolution” he sees in ubiquitous computing. Although the work does not tell more about data traffic than whether there is little or much, users develop an “affective connection” to it, according to Hansen, and, becoming “free to *not attend focally to the work*,” shift their mode of sensing “from the macroperceptual level—What is it telling me about the traffic volume?—to the microperceptual level; at the latter level, microtemporal recognitions of motion, orientation, sound, and so on sustain an ongoing microaffective connection that never reaches the level of a conscious, focal perception” (emphasis in original). It is important to recognize not only that in *Live Wire* information is not simply present in the background, moving to center stage when needed, but also that it has changed its nature through the specific way of presentation. Ubiquitous

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computing as represented by *Live Wire* or by Roy Want's similarly working *Internet Stock Fountain* (1999), also at the Xerox Palo Alto Research Center,<sup>3</sup> makes not only computers invisible—so that they disappear into the environment—but also information. *Live Wire* does so not only by addressing us, as Hansen points out, at the level of microsensation, “that is by definition invisible to perceptual consciousness” (Hansen, chapter 1 in this volume), but also by rendering information imperceptible. If we decide to attend focally to these works, we still will only find blurred information because they will tell us only whether there is much Internet traffic or whether the value of the Xerox share is increasing or decreasing respectively but will never give out exact measurements of a moment's flux. The text parsed by *Live Wire* and *Internet Stock Fountain* is mapped only as movement.

Neither Weiser and Brown nor Hansen engages in discussing this characteristic of *Live Wire*, which explains why Weiser and Brown are able to offer this work as an example of calm technology—one that enhances the peripheral reach and “increases our knowledge and so our ability to act without increasing information overload” (1995)—without considering the extent to which a work such as *Live Wire* really allows for informed actions. For the same reason, Hansen can celebrate the shift from macroperception to microaffectivity without addressing the ambiguity hidden in *Live Wire* but not invisible to perceptual consciousness: the fact that an artwork logically contradicts the notion of ubiquity and invisibility because by nature its aim is to call attention to itself as an intervention into the everyday life environment.<sup>4</sup> Taking this aspect into account, we should explore the hidden, subconscious symbolic of the way *Live Wire* presents information and wonder what else is at stake in what Hansen calls “revolution in the function of media and in the coupling of sensation and technics” (chapter 1 in this volume). Therefore, I propose, as a supplement to Hansen's discussion of the issue in the context of neurobiology and Edmund Husserl's phenomenology, a more critical approach from a cultural studies perspective linking ubiquitous computing to another noteworthy phenomenon in contemporary culture and media history: “information designed to resist information” (Liu 2004, 179). My starting point is the constant decline of the word in media history.

In his 2001 book *The Language of New Media*, Lev Manovich claims, “The printed word tradition that initially dominated the language of cultural interfaces is becoming less important, while the part played by cinematic elements is becoming progressively stronger. This is consistent with a general trend in modern society toward presenting more and more information in the form of time-based audiovisual moving image sequences, rather than as text” (78). The notion of the decline of the printed-word tradition is in line with the assumption that electronic media, computer, and the Internet undermine the authority and cultural supremacy of the word. Three significant books demonstrate this view: Neil Postman claims in *Amusing Ourselves to Death* (1985) that the inevitable message of the medium television is entertainment and

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distraction; Barry Sander holds in *A Is for Ox: Violence, Electronic Media, and the Silencing of the Written Word* (1994) that literacy is on the decline because of our fascination with electronic media—television, videos, computer games—which fail to provide the narrative power of true literary sources; and Nadin Mihai entitles his book *The Civilization of Illiteracy* (1997) precisely because it addresses an unfolding civilization in which the language of the Internet, interactive multimedia, and virtual reality have become the new languages of human interaction. Hyperfiction author and theorist Michael Joyce predicted in 1995 that the “post-alphabetic image” will soon “either rob us of the power—or relieve us of the burden—of language” (Joyce 2000, 42), and Jay David Bolter, who investigated in his 1991 book *Writing Space: Computers, Hypertext, and the History of Writing* the new opportunities for the word in digital media, spoke in 1996 of the “breakout of the visual” in the digital world, observing that in multimedia the relationship between word and image is becoming as unstable as in the popular press, where images do not appear subordinate to the word anymore (258).

The claim and complaint that the word no longer obtains the cultural authority it traditionally had been given should remind us of the many predictions we heard in the 1990s about the end of the Gutenberg Galaxy. With the profusion of Web logs (blogs) and millions of tweets sent every day, however, one can argue that the written word has certainly regained territory in digital media. Are those blogs and tweets not a response to the pictorial turn that took place more than half a century ago? Or are they only a glitch in technological history, an interregnum in the immanent hegemony of the postalphabetic image, as Joyce claimed in 1995 with respect to the text-based SP OUT (42)? Although it should be mentioned that blogs and tweets also have gone multimedial and that more and more queries on the Internet end up on YouTube, we have to leave the answers to these questions to future debates. In this chapter, I simply wish to explore the role text plays when it becomes an event within digital environments and discuss the reasons and implications of the fact that we have come to live more with the sensation of textuality than with the sense of the text.

To a certain extent, in digital-media text is always an event. As N. Katherine Hayles points out in her essay “The Time of Digital Poetry: From Object to Event,” even the seemingly static text on the screen is the result of the computer’s processing. However, the reader may not be aware of this “eventilization” of the text (2006, 182) because the processing is invisibly embedded behind the interface. Now, if text starts to move or to react to the reader’s action, then the situation changes. In the installation *Overboard* (2004) by John Cayley, a program of carefully designed algorithms allows letters to disappear or to be replaced by other letters, thus undermining the lexical relationship of the word until the original letters are restored.<sup>5</sup> The poem about a man falling overboard during a storm continually drifts in (rising) and out (sinking) of legibility and thus renders visually its own message. Whereas *Overboard* is processed

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without user input, in Natalie Bookchin's *The Intruder* (1999), which combines several arcadelike game interfaces to tell the short story *La Intrusa* by Jorge Luis Borges,<sup>6</sup> the reader moves forward through the text as a player by shooting, fighting, or catching and being rewarded with a piece of the narrative told in a voice-over.

Text as event inevitably shifts the reader's attention from the content of text to its materiality. Although in *Overboard* and *The Intruder* the way in which the text is presented contributes to its verbal meaning, as is the case in classical concrete poetry, in many other instances the event takes over the text, turning it into the raw material for various transformations into visual objects, sound, or (inter)action. In those examples, words are more or less deprived of their linguistic meaning, which limits or liberates respectively the audience engagement with the text to a joyful play or intriguing fascination. The words have not been replaced by the "postalphabetic image," as Joyce predicted in 1995, but they are turned into "postalphabetic text."<sup>7</sup>

I have illustrated the asemanticization of text in another essay (Simanowski 2010), reading Oswald de Andrade's concept of cultural anthropophagy from 1928 as media anthropophagy in the context of the shift from the "culture of meaning" to the "culture of presence" proposed in the aesthetic discourse at the end of the twentieth century.<sup>8</sup> In this chapter, I discuss further such transformation with respect to Julius Popp's installation *Bit.Fall* (2006), which exemplifies how contemporary art relates to (and opposes) ubicomp and demonstrates how communication in mixed-reality spaces shifts attention to the surface of text (materiality, appearance). I conclude the chapter with thoughts on the audience's voyeuristic approach to text stripped of linguistic value and on the code behind such text.

### Impermanent Signifiers

In *Bit.Fall* (2006) by the German artist Julius Popp (figure 9.1) a computer scans news Web pages, pulls keywords (nouns, verbs, and proper names), and writes them as a "waterfall of letters" by means of magnetic vents that enable each of the several water jets to emit individual water drops.<sup>9</sup> The shift in writing—from the invisible processing of words on the Web page to their spectacular processing within the installation—certainly addresses the question of ubiquitous computing and calm technology. Although Popp himself considers *Bit.Fall* a symbol for the fast change of what is currently valuable and meaningful to us,<sup>10</sup> Lutz Koepnick, professor of German, film, and media studies at Washington University in St. Louis, attributes an element of cultural and media critique to this installation, stating that it "foregrounds the utter transience of what we consider news in our world of increasingly global and instantaneous connections" (2006, 69). In a similar way, Popp's former teacher at the Academy of Visual Arts Leipzig, Astrid Klein, considers *Bit.Fall* a critique of technology that addresses the ephemeral and manipulable nature of information.<sup>11</sup>



**Figure 9.1**  
Julius Popp, *Bit.Fall* (2006). Permission kindly granted by the artist.

One wonders to what extent the premise of ephemeral information is correct in an age where television and radio programs are no longer broadcasted “away” but instead accessible online for repeated individual perception. This turn of the ephemeral into the permanent started with tape and video recorder and does not even require any preparation for saving the information needed prior to their broadcast. Digital media and the Internet in particular actually stop the element of transience that had long characterized information and news not presented in printed form. In a way, digital media bestow the quality of script upon any spoken word. It is the specific way information is presented in *Bit.Fall* that reverses this process and gives script the transience of spoken words. Whereas from the cave paintings to contemporary social-media networks, “the perennial role played by media has been to give durable, external support to private, fleeting human experiences,” Hansen notes (chapter 1 in this volume), *Bit.Fall* presents the opposite by making information artificially perishable. Although Popp claims thereby to represent a central experience in contemporary culture, he rather, as I will argue here, represents a specific reaction to this experience.

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Apart from the accuracy of the work's premise, it should be noted that the technology employed in *Bit.Fall* embodies the logic of flux and manipulation. One wonders about the extent to which this embodiment undermines the critical impetus that the critic, the artist, and the artist's teacher see at work in *Bit.Fall*. It is obvious that critical statements about the transience of text in modern life made within the medium text (as an essay, a novel, or a poem) would hardly be as fascinating as this installation is. Do words written by falling water eclipse ("water down"?) the criticism on culture by the fascination of technology? Does the sensual pleasure of the incessant flood of words and of their medial transience as water droplets inevitably erode the philosophical point of view? A media-archaeological perspective may illustrate the problem and help find an answer.

The technology employed in Popp's installation was invented as early as 1982 by Stephen Pevnick, professor of computer art at the University of Wisconsin. The Graphical Waterfalls®, as Pevnick called his technology in 1990, was first exhibited by the Klein Gallery in 1988 at the International Art Exhibition at Navy Pier in Chicago but was soon used primarily outside the art context, presenting, for example, the word *Jeep* or the image of the Mercedes star at spectacular auto shows. "Graphical Waterfalls provide the ultimate WOW factor," Pevnick states on his Web site.<sup>12</sup> It is the "WOW factor" that makes this writing technology so interesting for entertainment and commercial use.<sup>13</sup>

Popp, who declares he was unaware of Pevnick's work, holds that his technology is different—it is simpler, smaller, cheaper—and is used for a different purpose.<sup>14</sup> He considers technology as a tool, like a brush or a camera, with which one can create completely different content and form. One may wonder, though, whether this technology itself is a message no matter the specific content provided. Is the (political) text in *Bit.Fall* only—to use Marshall McLuhan's phrase from his essay *The Medium Is the Message*—the "juicy piece of meat carried by the burglar to distract the watchdog of the mind" (1964, 32)? Or, phrased in a less imputing manner, does the sustained aesthetic framework inevitably and unintentionally compromise the artwork's announced purpose? The car industry at least does not seem to be concerned at all that the perishability of the signifier this technology renders might be perceived as devaluation of the signified. However, if the content does not change the medium's message, the context may—that is, the appearance of the "WOW factor" in the realm of the art world. Before turning to this issue, we should first explore to what extent *Bit.Fall* in fact undermines the signifier.

At first glance, *Bit.Fall* seems to question the stability of words through the utmost instability of writing material, thus addressing the assurance of meaning itself. Such understanding can be challenged from a deconstructive perspective, which links phonocentrism to logocentrism because of the illusory presence and transparency of the

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phonetic signifier in contrast to the distorting materiality of the written signifier. Writing with water imitates the temporality of oral language and equally avoids recontextualization (or *différance*) to which the written word is subjected. Popp even artificially intensifies the “phonocentric” nature of the word by accelerating its transience with a dimmed environment and spotlights set up at the top of the construction so that the word disappears in the dark before the water hits the ground. This process not only makes the word’s real disappearance invisible but also means that the word remains (though only for a short moment) present in its absence. In a deconstructive reading, such contradiction can be explored as the passage in which *Bit.Fall* undermines the very dichotomy its announced message is based on. However, here it must suffice to note that the words uttered by *Bit.Fall* are not only ephemeral, but also decontextualized and that their “recontextualization” in the random order of their appearance hardly allows a deconstructive reading. In this regard, a second glance reveals that *Bit.Fall* stabilizes rather than undermines the signifier. With regard not to the instability of the writing material, but to its constant reuse—the same “ink” is used again and again to write different words (words as oppositional as *Bush* and *Bin Laden*)—we might say that Popp’s installation does contain a certain deconstructive element. However, we doubt that the pragmatic decision of recycling the water justifies reading this reuse as deconstruction and would rather want to point out another aspect of the piece.

Although the materiality of water makes the written text as ephemeral as the spoken word, it does not, despite its transparent material, provide the same transparency—or calm technology—to that matter. In fact, the striking material markings—the “WOW factor” that here ink is fluid not before but after letters have been written—affect the audience’s attention and distort their thinking. Rather than (re)considering the meaning of the appearing words, and rather than reflecting “the utter transience of what we consider news,” to use Koepnick’s words, people will dance beneath this kind of “text rain,” walk through it with an umbrella, try getting to the other side without the text/water hitting them, or just enjoy the beauty of words represented by water drops.<sup>15</sup> In contrast to how they treat oral communication, they will not look *through* the signifiers but *at* them. They will do so, however, not in order to discover how the text deconstructs its own rhetoric strategy, but to enjoy the spectacular way of its presentation. *Bit.Fall* does not correct (or undermine) but instead neglects the semiotic value of the text by shifting it into an artifact, like paint and shape in nonfigurative painting, although it is much “cooler” than abstract painting ever could be. Because this neglect occurs in an artistic environment, one can even consider it as being in line with the artist’s intention. It fits the message of the ephemeral nature of information if one does not recognize, let alone remember and reflect on, the words presented—as long as this absence of reflection is eventually reflected on.

The term *cooler* may surprise the reader as rather nonacademic language. However, it refers to the theoretical concept of “cool” as developed in Alan Liu’s 2004 study *Laws of Cool: Knowledge Work and the Culture of Information*, according to which cool is an ethos of information that is against information, the uselessness of useful information, the use of information to abuse information (185–186). By presenting information out of context and furnishing it with the “WOW factor” of its bizarre materialization, *Bit.Fall* certainly carries out such abuse of information. It does so in contrast to Pevnick’s advertisements that stabilize the fluid words through their repetition and contextualization within a clearly defined situation. In the latter advertisements, the fluid words add, because of their specific appearance, the notion of “cool” to the companies the words present but are not cool in Liu’s sense precisely for communicating this information. Reading Pevnick’s installations against Popp’s reveals the different message in the use of the same technology. Whereas in Pevnick’s case the signified is stabilized, in Popp’s case it is undermined—not by addressing the process of signification, but by ignoring its result.

The “WOW factor” at work in this installation does not necessarily undermine the critical impetus claimed by the artist but actually represents a critical impetus in itself, albeit in a different way than the artist declares—namely, if the ethos of the uselessness of useful information is understood as a critical reaction to the information society with its symptoms of information overload. This shift of attention from the meaning of words to their appearance reads like an ironic response to Weiser and Brown’s notion that “the way to become attuned to more information is to attend to it less” (1995). By bringing technology to the fore rather than turning it calm and invisible, by rendering information useless rather than making it visible, *Bit.Fall* contradicts the aim of ubiquitous and calm computing to provide information unobtrusively at the level of microsensation. Against the background of *Bit.Fall* and similar astounding mappings and visualizations of information, and in taking Jeremijenko’s remark seriously that *Live Wire* is different from the usual “data fetishism of information rhetoric,” we may wonder whether *Live Wire* really supports the agenda of ubiquitous computing or rather represents a playful—and “cool”—relationship to information conceptualized as an event in the center of attraction or an ornament in an otherwise “spectacularly banal office environment.”<sup>16</sup> Such perspective on contemporary art is better understood if linked to the preceding and accompanying aesthetic discourse.

### Revealing Code

Depriving text of its linguistic value and turning information into an ornament can be situated within the aesthetics of the spectacle that is part of the contemporary “society of the spectacle” and offspring of the “postmodern condition.”<sup>17</sup> As is well known, Jean-François Lyotard, in his writing on aesthetics following the description

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of the erosion of grand narratives in *The Postmodern Condition* (1984), focused on the event and the intensity of the (sublime) moment in the expanse of message and signification. This focus has been described as a shift of attention “from the determination of a general truth or general operating strategy to an interest in ‘performativity,’” as Marvin Carlson notes in the context of performance art (1996, 138). With respect to more recent media genres such as film, music videos, and computer games, Andrew Darley similarly notes a “shift away from prior modes of spectator experience based on symbolic concerns (and ‘interpretative models’) towards recipients who are seeking intensities of direct sensual stimulation.” The reader, Darley holds, becomes a sensualist “in pursuit of the ornamental and the decorative, modes of embellishment, the amazing and the breathtaking” (2000, 3, 169).<sup>18</sup>

As far as text in digital media is concerned, I mentioned at the beginning of this chapter the fear (or at least the report and prophecy) of the “breakout of the visual” (Bolter 1996, 258) and the dominance of the “postalphabetic image” (Joyce 2000, 42). The transformation of text from a linguistic artifact to an audiovisual object can also be discussed by means of the concept of the visual as pornographic, as developed in Frederic Jameson’s *Signatures of the Visible* (1992). According to Jameson, “the visual is essentially pornographic” because “it has its end in rapt, mindless fascination”; pornographic films are therefore “only the potentiation of films in general, which ask us to stare at the world as though it were a naked body” (1). As in McLuhan’s dictum that “the medium is the message” and Postman’s use of this dictum with respect to television as inevitable medium of amusement, Jameson ascribes a certain quality to the medium of film and questions its critical-utopian potential. For him, film is part of mainstream culture to the extent that it presents a phenomenon as interesting, attractive, and seductive as a naked body at which the spectator is staring with astonishment and affection.

Jameson’s concept of the visual has been applied to the role text plays in electronic media. Thus, Janez Strehovec—who picks up Manovich’s notion about the cinematic character of the language of new media quoted at the beginning of this chapter—holds that an important part of the textual production in contemporary culture is based on words in motion and that a great amount of it is “presented as naked bodies” (2010, 221).<sup>19</sup> As a case in point, Strehovec refers to Brian Kim Stefans’s *The Dreamlife of Letters* (2000), a flash animation of moving letters that ends, quite adequately, with the sentence “Thanks for *watching*” (emphasis added).<sup>20</sup> Like many other examples of kinetic text in digital media and in contrast to earlier text films such as Michael Snow’s *So Is This* (1982), *The Dreamlife of Letters*, with its syntax of surprise and shortcuts, owes much to the aesthetic of cinema and music video. Hence, Strehovec notes that text, formerly representing the rather elite medium of literature, is refashioned, appropriated, or “hijacked” as something adequate to the contemporary movie industry and club culture.

A similar observation can also be made concerning *Bit.Fall*. Text appears as a captivating event and physical body to be stared at rather than as a linguistic object to be read and understood. Jameson, describing the visual and musical as the physical and not essentially linguistic elements of text, notes: “The more advanced and rationalized activity”—that is, the engagement with text as a linguistic object—“can also have its dream of the other, and regress to a longing for the more immediately sensory, wishing it could pass altogether over to the visual, or be sublimated into the spiritual body of pure sound” (1992, 2). *Bit.Fall*, *Live Wire*, and *Internet Stock Fountain* surely carry out such sublimation into the sensory. The text, in its physicality, is stared at in “rapt, mindless fascination,” to use Jameson’s words (1992, 1).<sup>21</sup>

To be precise, what is stared at is the hidden, unexposed, embedded text: the programming code. The code makes the text—the words pulled from Web sites in *Bit.Fall*, the network traffic data in *Live Wire*, the stock-market numbers in *Internet Stock Fountain*—appear in a particular, fascinating way, and so during this process the code is in fact exhibited itself. However, we do not stare at the code as an alphanumeric equation, but rather as a materialization on the screen or on the scene: the “fluid” letters, the dangling string, and the increasing or decreasing fountain. Staring at the code processing the text or numbers is interreliant with stripping this text of its linguistic value or the numbers of their mathematical nature. Blending McLuhan and Jameson, we can describe the concept in the following way: the pornographic message of digital media is code concealing information. With respect to the issues of ubiquitous computing and calm embeddedness, we can say that the “eventilization” of the text (Hayles 2006, 182), invisibly and permanently taking place within each letter in digital media, is brought to attention by a mode of processing much more sophisticated and spectacular than in regular digital-text production. In this perspective, the pornographic turns into elucidation: making the text illegible makes the code visible.

Such a conclusion can be arrived at with respect to *Bit.Fall* and many other installations employing text as audiovisual objects as well as with respect to other genres of digital art, such as kinetic concrete poetry and mapping art.<sup>22</sup> In fact, the focus on code may, with the application of the title of another seminal text by Jameson (1991), even be considered the inherent “cultural logic” of digital technology. Even though digital technology is primarily invisibly embedded in our lifeworld, we may say that it is this technology’s natural (narcissistic) intention to center-stage its own basic material: code work. The shift from the linguistic to the physicality of text, from the expression of ideas to the thrill of technical effects, demonstrates the desire for publicity and recognition. This desire, however, builds completely on discipline (i.e., the skill of virtuoso programming), for it is the faultless code that generates the “perfect body” (or “visual”) that we cannot help staring at.

The discipline of coding has its counterpart in perception. As this reading of *Bit.Fall* has shown, the thrill of the technical can, beyond sensual stimulation, also be

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approached within a hermeneutic model. Although text deprived of its linguistic value no longer utters a specific message, the way such text is presented is surely meaningful. In the end, the pornographic of the medium lies in the eyes of the beholder: staring *at* the materialization of code can always (and finally should) turn into looking *through* it down to its deeper meaning.

### Notes

1. As Weiser and Brown further explain, “Technologies encalm as they empower our periphery”; however, “a calm technology will move easily from the periphery of our attention, to the center, and back” (1995).
2. For more on Jeremijenko’s work, see [http://tech90s.walkerart.org/nj/transcript/nj\\_04.html](http://tech90s.walkerart.org/nj/transcript/nj_04.html).
3. Roy Want’s *Internet Stock Fountain* (1999) at Xerox’s Palo Alto Research Center indicates by the rate of its water flow whether Xerox shares are up or down.
4. It should be noted that whereas Hansen speaks of *Live Wire* as a work of art in his chapter in this volume (chapter 1), Weiser and Brown refer to it as a “radically new tool” (1995). I thank Luciana Gattas for drawing my attention to this inherent contradiction between ubiquitous computing and art.
5. For more information on *Overboard*, see <http://programmatology.shadoof.net/index.php?p=works/overboard/overboard.html>.
6. For more information on *The Intruder*, see <http://bookchin.net/intruder>.
7. Matthew G. Kirschenbaum uses the term *postalphabetic text* to describe David Carson’s design style, which “refashions information as an aesthetic event” (1999).
8. For a discussion of mapping art similar to Jeremijenko’s *Live Wire* and Want’s *Internet Stock Fountain* from an aesthetic and philosophical perspective, see chapter 5 in Simanowski 2011.
9. For a viewing of *Bit.Fall* and more information on it and Julius Popp, see <http://youtu.be/ygQHj1W0PPM>; <http://www.artnet.com/artist/424543553/julius-popp.html>; and <http://sphericalrobots.org>.
10. See <http://www.youtube.com/watch?v=AICq53U3dl8>.
11. For Astrid Klein’s assessment of *Bit.Fall*, see <http://netzspannung.org/cat/servlet/CatServlet?cmd=document&subCommand=show&forward=%2fnetzkollektor%2foutput%2fdigital-sparks.project.xml&entryId=342596&section=context&lang=en>.
12. Pevnick’s Web site is at <http://www.pevnickdesign.com>.
13. The Wowlab—a visual design studio specialized in commercials, installations, and multimedia work (see, for example, the work *Light Rain* [2007])—announces the WOW factor right in its name (wowlab.net). As for *Bit.Fall*, Jan Karabasz, former collaborator with Popp, utilizes the *Bit.Fall* installation in the context of the *Rhythmus Berlin* revue at Friedrichstadtpalast,

Berlin (opening night, 2 March 2007) where a 65-foot-wide installation (*Bit.Fall's* size is 16 by 26) presents images and words representing Berlin. Karabasz's company Elektronische Steuerungen also offers commercial applications of *Bit.Fall's* technology (see <http://www.el-steuerungen.de>).

14. Email message from Popp to the author, 18 May 2009.

15. Such forms of connecting with the text in *Bit.Fall* is demonstrated in a video from the Nuit Blanche Festival in 2005, available at <http://www.youtube.com/watch?v=vbsAqNlvXE4&feature=related>.

16. From [http://tech90s.walkerart.org/nj/transcript/nj\\_04.html](http://tech90s.walkerart.org/nj/transcript/nj_04.html). For a detailed discussion of mapping art that distinguishes between its naturalistic and poetic version (providing readable or indecipherable information), see chapter 5 in Simanowski 2011.

17. Guy Debord's phrase "society of the spectacle" from 1967 has been used since then to describe the postmodern time—as, for example, by Jameson (1998, 87).

18. For a critical discussion of the prevalence of excessive decoration in postmodern aesthetics and the shift from contemplative distance to sensual immersion, see Hal Foster's 2002 book *Design and Crime*, which refers to the Austrian architect Adolf Loos, who in his 1910 essay *Ornament and Crime*, confronted the aesthetic hybridity of art nouveau.

19. It should be noted that Jameson's presupposition that the "closest relative" of film is the novel rather than theater or video experimental (1992, 4) helps him make the point regarding a shift away from the cognitive action of reading to the voyeuristic action of staring, at which Strehovec is aiming with his reference to Jameson. Seeing the natural relatives of film in vaudeville and circus with their aesthetics of attraction changes the perspective, though not the account about the signature of the visual (for more on this topic, see Gunning 1999).

20. *The Dreamlife of Letters* can be watched at [http://collection.eliterature.org/1/works/stefans\\_the\\_dreamlife\\_of\\_letters.html](http://collection.eliterature.org/1/works/stefans_the_dreamlife_of_letters.html).

21. Here and in the following discussion, text is understood in its alphanumeric nature, including numbers.

22. See my discussion of further installations in Simanowski 2010 and of kinetic concrete poetry and mapping art in chapters 2 and 5 in Simanowski 2011.

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