

## Chapter 4

### Contexts for Electronic Literature: Body and Machine

The context of networked and programmable media from which electronic literature springs is part of a rapidly developing mediascape transforming how citizens of developed countries do business, conduct their social lives, communicate with each other, and perhaps most significantly, how they experience themselves and who they understand themselves to be. To play, interpret, and teach electronic literature inevitably raises complex issues about the relation between subjectivity and digital media. How this relation should be configured theoretically is highly contested; at stake is nothing less than our understanding of the human. Although a full analysis of the issue is beyond our scope here, we can approach the issue by exploring two positions at the ends of the spectrum, powerfully articulated by two leading theorists, Friedrich Kittler and Mark B. N. Hansen. Whereas Kittler's approach gives priority to communication media and insists that the human can only be understood within the horizon established by technical media, Hansen places human embodiment at the center and wants to encapsulate technicity within the bounds established by embodied responses. While both positions have distinctive strengths, each erases important aspects from consideration and consequently gives only a partial account of the full complexity of the human-media relation. Extending the arguments of Chapter 2 on intermediation and Chapter 3 on the potential of electronic literature to transform computational practice, this chapter will show how focusing on the dynamics *between* technical media and embodied responses

gives a fuller, more complete framework within which to understand the work that electronic literature does within the context of contemporary culture.

“Media determine our situation,” Kittler famously announces in the Preface to *Gramophone, Film, Typewriter*. Drawing on Marshall McLuhan’s idea that “the medium is the message,” Kittler argues media provide the ground within which human thought, memory, and discourse take place. What a person can record, transmit, and leave behind at his death all depend on the communication media at his disposal. In this respect, Kittler can be seen as continuing Foucault’s archeological model of the episteme, although Kittler departs from Foucault in taking him to task for focusing on discourse and failing to take adequate account of the importance and technical specificity of communication media. Echoing and also transforming Foucault’s claim that “man” is a cultural construction, Kittler argues that “so-called man” is even more an invention of communication media. When “the ancient monopoly of writing” is broken in the nineteenth century by the development of “technical media”—that is, media that employ other techniques than the analogue forms of writing and printing for the creation, storage, and transmission of information—the human situation and indeed the human itself changes accordingly. Photography, telegraphy, phonography and the optical media that precede cinema, as well as cinema itself, change the conditions under which human life can be interpreted and understood. It is in this sense, then, that “media determine our situation.”

Just as Kittler departs from Foucault while also adopting some of his methodologies, so he departs from McLuhan in arguing that it is impossible to “understand” media (alluding, of course, to the title of McLuhan’s best-known work,

*Understanding Media*). Understanding implies interpretation in pursuit of meaning, but if media determine the conditions upon which understanding and interpretation occur, then they themselves provide the horizon within which interpretative activity takes place. Consequently, they necessarily remain beyond that horizon, functioning as the presuppositions that serve as the ground for interpretation. They cannot themselves be interpreted, only grasped through the specificities that enable certain kinds of understanding to take place (and that implicitly disable or foreclose other modes of interpretation). Kittler's characteristic mode of analysis thus focuses on the technical specificities of media, correlating these specificities with the kinds of human understanding and interpretation that take place within and through them.

Given the resolutely anti-humanist stance of Kittler's theoretical orientation, one wonders what drives the epistemic changes that cause technical media to evolve in one way rather than another. The answer, Geoffrey Winthrop-Young cannily argues, is war. "Entertainment is an abuse of military equipment," Kittler wittily remarks, and repeatedly he shows that crucial technical advances come about to meet the needs of warfare. While it is certainly true that war is responsible for the development, if not the discovery, of many late nineteenth and twentieth century media inventions, from wireless telegraphy to virtual reality, not all of them can be attributed to this cause. But given Kittler's orientation, individual human enterprise can hardly be acknowledged as a contributing factor.

### **Hyper Attention and Global Finance**

Among the important recent work on global finance are the ethnographic studies of international currency traders by Karin Knorr-Cetina and Urs Bruegger.<sup>1</sup> Exchange traders typically work for large international banks with offices in the central financial capitals, including London, Zurich, New York, Tokyo, and Singapore. As market makers, they deal with first-tier institutional buyers and sellers involving large amounts of currency exchanges, amounting to 1.5 trillion dollars annually. The traders act as facilitators to ensure liquidity, for example in international mergers that call, say, for dollars to be exchanged for euros. They receive a base salary from the bank but also get bonuses based on the amount of money they make for the bank; in addition, they trade on their own behalf as well. They have no role in production at all. Their income, and the profit they generate for the bank, come solely from price differentials among currency equivalents and from the different rates at which currencies can be bought and sold. Trades involving several million dollars are routinely executed in 2-4 seconds using protocols that recognize a delay of even a few seconds can make the difference between profit and loss. In brief, this is money at its most virtual, moving around the globe in nearly instantaneous electronic exchanges and reflecting rate fluctuations sensitively dependent on a wide variety of fast-changing economic, social, and political factors.

A central concept from Knorr-Cetina and Bruegger's studies is the idea of global microsociality. For sociologists, this comes close to being an oxymoron. Microsocial dynamics customarily apply to local situations such as the dynamics of a given office and are treated with non-statistical models such as rational actor theory, while macrosocial situations involving hundreds or thousands of agents are typically treated aggregatively, for example with statistically weighted surveys. Global microsociality represents a new

kind of phenomenon possible only with advanced communication technologies allowing for nearly instantaneous exchanges between geographically distant locations, precisely the situation that pertains in international investment banks. While the bank's business and offices are global in scope, the traders are tightly connected to each other and their clients through relationships that develop over time and involve reciprocity and trust, qualities not adequately accounted for by graph and network theory. Inflected by the dynamics of global economies, the traders nevertheless operate within microsocial dynamics—hence the necessity for the theoretically novel concept of global microsociality.

Another important idea is the construction of temporality as a place to inhabit. Since some exchanges such as options cannot normally be concluded in a single day, traders at the end of working hours pass their books to their counterparts in the next time zone, so that the books follow the sun around the globe, creating “communities of time” wherein time differentials are crucial to the binding effect. The conditions under which the traders work include numerous screens that they watch intensely throughout the day, the inner circle displaying economic data and current rates, with the outer circle keyed into feeds such as CNN that deliver breaking news about economic, social, and political events. The traders develop a form of parallel processing through a division of sensory inputs, using phones to take orders from brokers through the audio channel and the screens to take in visual data and conduct trades electronically. The environment, however, is dominated by the screens.

Although the spatial locations of events reflected on the screens are important, the predominant effect is of watching time unfold. In Knorr-Cetina and Bruegger's analogy,

the screens create a temporal horizon that unfurls like a carpet unrolling, except that the carpet's design is not determined in advance but is continuously woven and rewoven from temporally-driven events as these come into view, converge and/or diverge, and fade into the past. As new events appear over the ever-transforming horizon, the traders weave from their knowledge of past configurations, present statistics and anticipated tendencies a fabric of temporality, which like the fabled magic carpet is perceived at once as a space one can occupy and as an event as ephemeral and ever-changing as the air currents on which the magic carpet rides.

In this construction, the traders occupy an ambiguous position. On the one hand, they are participants in the place of temporality they create by watching the screens, helping in significant ways to shape the market and related events as they continuously unfold and affect one another (Clark, Thrift and Tickell have written about the interrelations of the market and media, whereby the market not only becomes a media event but a medium in itself, interacting with all the other media events and media<sup>2</sup>). In this sense the traders' actions are mirrored inside the screens, constantly visible to themselves and others. On the other hand, they are also observers outside the screens, watching the action as it unfolds. Screens in various locations all show more or less the same data, so that the traders, by watching the screens, are in effect not only watching their own actions but also the actions of others reacting to their actions as well as their responses to these actions, and so on in a continuing weave of action, response, counter-response, etc., all proceeding at frenetic velocities and near-light-speed transmission times. The net result of these interactions is perceived by the traders as "the market." When asked what the market is, one respondent said it is "who's selling, who's buying, where, which center,

what central banks are doing . . . what the press is saying . . . what the Malaysian prime minister is saying. It's everything—everything all the time.”<sup>3</sup> Note that although location enters into the trader's sense of the market, it is the temporal dimension—everything *all the time*—that constitutes the place of habitation the market both creates and occupies.

This sense of the market as “everything” is reinforced by the traders' experience in being so intimately and tightly connected with the screens that they can sense the “mind” of the market. This intuition is highly sensitive to temporal fluctuations and, when lost, can be regained only through months of immersion in current conditions. Attributing a “mind” to the market of course implies it is an entity possessing consciousness, desires, and intentions; more precisely, it is a mega-entity whose existence is inherently emergent. Containing the traders' actions and everything else, it comes into existence as the dynamic realization of innumerable local interactions. As an emergent phenomenon, the market in Knorr Cetina and Bruegger's formulation is “an object that is not identical with itself,” amplifying to a global scale the continuous flux amid patterned continuities characteristic of living beings.

This is the context in which the screens become objects of intense attachment for the traders. The trading environment, combining continual risk-taking with real financial consequences, often proves highly addictive as well as emotionally draining. For many traders the experience becomes all-consuming, occupying their dreams as well as most of their waking hours. Their involvement extends beyond cerebral to affective and bodily engagements; traders recognize that managing their emotions is a crucial job skill, without which a novice will not last a week. Moreover, they enter the trading world by

taking a “position”—that is, buying or selling currencies—so that their entry into the place of temporality is synonymous with exposure and risk, which they often describe as physical and sexual vulnerabilities, vividly imaged as violent penetrations of the body’s interior spaces. This place of temporality is also highly gendered; almost all of the traders are male, and the metaphors through which they describe their activities are hyper-masculinized. The goal is not to maintain one’s position or to survive but to win, often expressed in highly combative terms. The high stress, meteoric pace, and necessity for instantaneous decision-making make trading a young man’s game; the oldest trader the researchers report was 34 years old. Despite the stress, the attachment is so intense that it becomes addictive. When traders leave the game, some purchase hand-held Reuters’ screens so they can continue to experience the atmosphere, even if tenuously from the periphery.

### **Hyper Attention and Electronic Literature**

Without necessarily subscribing to the ideology of global capital, electronic literary works are also reacting to media-intensive environments. It is no surprise, then, that they manifest similar concerns to those the traders experience. The theoretical concepts developed through the analyses of international currency tradition—temporality as a place to inhabit, the network as an emergent entity, attachment to screens, and the ambiguous relation of the subject to the screen image, at once observer of it and participant in it—are evident in works of electronic literature as well. The differences come in the complex ways in which works of electronic literature position themselves in relation to these effects, at once instantiating their dynamics and interrogating their implications. Hyper attention is thus not only a way to understand electronic literature;



electronic literature is also a way to understand the cultural, psychological, and epistemological implications of hyper attention. Let us turn now to works by Talan Memmott and Young-Hae Chang Heavy Industries to see these negotiations in action.

Attachment to screens, imaged iconographically through facing double funnels, is prominently on display in Talan Memmott's *Lexia to Perplexia*,<sup>4</sup> suggesting that the subjects facing screens are somehow merging with them, so that subjectivity is ambiguously distributed across the screen boundary. Other iconographic designs such as eyes looking out suggest that the technology is not a neutral purveyor of human intentions and desires but also has its own "mind," subject as well as object of visual attachment. The notorious "nervousness" of this work, whereby a tiny twitch of the cursor can cause events to happen that the user did not intend and cannot completely control, conveys through its opaque functionality similar concepts about dispersed subjectivities and screens with agential powers that we saw with international currency traders. Neologisms like "communification" point toward the merging of global capital with information technologies, while the narrative voices that have been funneled through the apparatus seem to speak from a great distance, as if overcome by their own virtuality.

The sophisticated play between Echo and Narcissus, evoked by the icons of eyes and the letters E.C.H.O splashed across the screen, illustrates how these hyper characteristics are deployed in reflective contexts that call for deep attention. Consider the following passage from the opening screen:

The inconstancy of location is transparent to the I-terminal as its focus is at the screen rather than the origin of the image. It is the illusory object at the screen that is of interest to the human enactor of the process—the ideo satisfactile nature of the

FACE, an inverted face like the inside of a mask, from the inside out to the screen is this same <HEAD>[FACE]<BODY>, <BODY>FACE</BODY> rendered now as supposed other.

Cyborgorganization and Its Dys/Content(s)

Sign.mud.Fraud

In Ovid's version of the myth, Narcissus, looking into the reflective pool, falls in love his image and pines for a supposed other who is in reality himself; Echo, loving Narcissus, fades away to a voice doomed to repeat what others say. In Memmott's re-writing of the myth in the context of information technologies, the "I-terminal," a neologism signifying the merging of human and machine, looks at the screen and desires to interact with the image, caught like Narcissus in a reflexive loop that cycles across the screen boundary between self/other. Like the international currency traders who watch the screen from outside and also create what the screen shows, the origin is ambiguously located in the user whose image the screen reflects and deep inside the machine itself. The image takes the anthropomorphic shape of the FACE, whose nature, the "ideo satisfactile" neologism suggests, instantiates ideology, narcissistic satisfaction, and fractal self-similarity. Moreover, the FACE is imaged as if inverted, "like the inside of a mask," suggesting that the reality of the situation is simultaneously masked from the "I-terminal" gazing at the screen and revealed—but revealed through the reflexive procedure of reconstructing from the mask's interior what the presumptive face must look like, an indirect reflection analogous to the onlooker who infers her own identity from its reflection on the screen.

There follows “broken” code, that is, code that is a creolization of computer code with English, evocative of natural language connotations but not actually executable.

The syntax of the html markup is not correct, for the expression

<HEAD>[FACE]<BODY> lacks the closing </HEAD> that would signal the end of the heading before the body starts, as well as the closing tag for the body. Inserted instead is the FACE, suggesting a Cartesian oscillation in which the face is ambiguously located either with the head or body. The next expression, <BODY>FACE</BODY>, continues the play by indicating that the FACE is part of the body. The closing phrase, “rendered now as the sup\posed other,” once again indicates ambiguity in the locus of selfhood, indeterminably dispersed between “posed” other, and its virtual “supposed” twin. The signature, ‘Sign.mud Fraud,’ simultaneously evokes Freud’s famous analysis and debunks it, suggesting that Freudian psychology must be re-thought in the semiotic context of networked and programmable media to recognize the role of the intelligent machine in contemporary constructions of subjectivity, that is, what Scott Butkatman has called “terminal identity” or in Memmott’s lexicon, the “I-terminal”.

While *Lexia to Perplexia* could be played as if it were an idiosyncratic computer game that the user “wins” by manipulating the work until she reaches the final screen, the point is not really to zip through the screens—admittedly not an easy task—to reach the end. While engaging the hyper attentive characteristics of multiple information streams and rapid transformations (images, words, graphics lightning-quick morphing of screens, mouseovers, etc.), the work obviously requires deep attention skills to grasp the complex interactions between verbal play, layered screen design, twitchy navigation and sophisticated dHTML coding. In my experience teaching this work, I find that an

effective strategy is to form two-person teams between experienced gamers and textual critics such as English graduate students who have read considerable critical theory and are practiced in textual exegesis. In the discussions that emerge between team members, the partners typically expresses distaste for some of the work's strategies and admiration for other strategies; the tipping point comes when they discover their critical evaluations are mirror images of one another.

While *Lexia to Perplexia* is primarily concerned with the transformative effect of information technologies on contemporary subjectivity, Young Hae Chang Heavy Industries engages the global microsociality and spatialization of temporality characteristic of information-intensive settings such as international currency trading discussed above. The work is a Seoul-based collaboration between Marc Voge, a French artist, and Young Hae Chang, a Korean artist. Programmed in Flash, their works use timed animation to display sequential blocks of text, with the movement from one screen of text to the next synchronized with an accompanying sound track, typically jazz. With settings that include Japan, Korea, and the African continent, the narratives display an international flavor, often heightened by hip language and a noir flavor. With a restrained color palette and few animations, the work's emphasis falls on sound and text—but text with a difference.

The flashing sequential blocks of text convert the reading experience from eye motion that progresses down the page in horizontal sweeps from left to right (for English text) to looking at the same area on screen where the text constantly replaces itself. The impression is not that the eye moves but rather that the text moves while the eye remains more or less stationary. Agency is thus distributed differently than with the print page

where the reader controls the pace of reading and rate at which pages turn. Programmed as a Flash animation impervious to user intervention (the user's only choice is to let the piece run or stop it and start over from the beginning), the work proceeds at speeds rarely coinciding with a comfortable reading rate, either lingering longer than the reading requires or, more frequently, flashing by so quickly one must strain to catch all the words. The effect is to introduce a disruptive temporality into the spatiality of the (presumptive) page, converting it into a hybrid form in which spatiality and temporality compete for dominance in the place of reading.

As Jessica Pressman has observed, the idea of text that moves while the reader's eye remains stationary was conceived by Bill Brown in the 1920's through a machine that he called the "Readie," a mechanical device intended to display text much as it appears in Young Hae Chang Heavy Industries compositions. Taking his cue from cinema as a time-based medium, Brown imagined reading could be brought up to speed, so to speak, by displaying it as a liner stream of words that flash by much as a highway unfolds at night through the windshield while one is driving fast. The idea was re-invented independently by the Research in Experimental Documents (RED) group at Xerox PARC in 2001, displayed at SIGGRAPH and other venues as a device that flashed text as the user controlled the speed through a foot pedal resembling a gas pedal. Thus the notion of speed, mobility and modernity has been consistently linked with the linear display of flashing text for nearly a century, a conjunction that prompts Jessica Pressman to categorize the productions of YHCHI as "digital modernism." In their works, the speed is controlled through a computer algorithm; this implies that the aesthetic departs from the mechanical version insofar as it involves the rapid processing of code by an

intelligent machine, the interaction of language with the execution of code, and the global reach of networked and programmable media as the piece is accessed and played using the programs and data stored at the Young Hae Chang Heavy Industries web site. All of these factors contribute to an interrogation of global microsociality and temporality as a place to inhabit.

In *Nippon*, global microsociality is emphasized by an intimate address that appears on a screen split between Japanese ideograms above and English words beneath. The two languages do not represent literal translations of one another but rather colloquial speech that employs idiomatic expressions, as if the narrator(s) were equally at home in both of the very different languages. The temporalization of textual spatiality that the flashing text enacts is reinforced by the allusions to other time-based media, particularly film. The self-conscious narrative that begins as if the narrator is delivering instructions to a young woman catering to married men in a Japanese late-night club. In what is apparently one side of a dialogue, the voice cajoles the young woman to use her cigarette as a seduction prop, coaches her on the proper moves, and argues with her about whether she should show stretch to show off her long neck (better not, the narrator admits, because it would reveal the line where her makeup stops). Then the narration move into free indirect discourse, reflecting the young woman's own thoughts on her superiority to the men's wives. By indiscernible degrees, the focalization migrates to free indirect discourse narrating the thoughts of one of the young men in the party as he speculates, among other topics, on how much it would cost to get one of the women to sleep with him. The fluctuating gender politics, world-weary tone, changing narrative

foci, satirical take on the situation, and the difficulty of absorbing the text as it flashes quickly by, all contribute to the work's complexity.

Although it appeals to hyper attention through its speed and context, deep attention is required fully to comprehend the work's narrative strategy and the synergistic interplay of text, music, color, motion, and animation, to say nothing of the similarities and differences between the alphabetic and ideogrammatic scripts moving at different tempos to one another, as well as the nuances, connotations, and implications of the two different languages. If the space of the text has been temporalized, it has also been reinforced as a semiotic system demanding deep attention. The resulting tension between hyper attention's flexibility and speed and deep attention's scrutiny and long focus times mandates that the user intent on comprehending the work will necessarily be forced to play it many times, unable to escape hyper attention by stopping the text-in-motion or deep attention by lapsing into interactive game play.

Electronic literature, then, can be seen as an artistic practice in which the conflicts and synergies between deep and hyper attention play out in contexts that manifest the complex dynamics of temporality as a place to inhabit, subjectivities ambiguously located inside and outside the screen, objects not identical with themselves, and networks as emergent lifeforms. Critical interpretation is not above or outside these dynamics but necessarily located within them, drawn into the matrix by engaging with the very works it seeks to analyze. Whether inclined toward deep or hyper attention, one side or another of the generational divide separating print from digital culture, we cannot afford to ignore the dynamic, frustrating, zesty and intriguing ways in which the two cognitive modes

interact with one another. Our responsibilities as educators, not to mention our positions as practitioners of the literary arts, require nothing less.



## Endnotes

---

<sup>1</sup> Karin Knorr Cetina and Urs Bruegger, "Inhabiting Technology: The Global Lifeform of Financial Markets," *Current Sociology*, 50.3 (May 2002): 389-405; Karin Knorr Cetina and Urs Bruegger, "Global Microstructures: The Virtual Societies of Financial Markets," *American Journal of Sociology* 107.4 (January 2002): 905-50; Karin Knorr Cetina and Urs Bruegger, "The Market as an Object of Attachment: Exploring Postsocial Relations in Financial Markets," *Canadian Journal of Sociology* 25.2 (2000): 141-68.

<sup>2</sup> Gordon L. Clark, Nigel Thrift and Adam Tickell, "Performing Finance: The Industry, the Media, and Its Image," *Review of International Political Economy* 11.23 (May 2004): 289-310.

<sup>3</sup>Knorr Cetina and Bruegger, "The Market as an Object of Attachment," 146.

<sup>4</sup> Talan Memmott, *Lexia to Perplexia* (September 2000)  
<[http://collection.eliterature.org/1/works/memmott\\_lexia\\_to\\_perplexia.html](http://collection.eliterature.org/1/works/memmott_lexia_to_perplexia.html)>.