

UNIVERSITY OF CALGARY

“I Seem to be a Hypertext.”

by

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Do not read this book straight through from beginning to end. These pages contain many different adventures you can have in _____. From time to time, as you read along, you will be asked to make decisions and choices...The adventures you take will be the result of your choices. After you make a choice, follow the instructions to see what happens next...

-Choose Your Own Adventure books

Abstract

We live in a world where there are many understandings of technology. I question my perception of technology—is it something I can control? Is this text?

This thesis explores the textualizing of hypertext. One part focuses on a number of phenomenological issues by reviewing the praxis philosophy of Don Ihde, who observes the *taken-for-grantedness* and *forgetfulness* surrounding technology.

Another part situates hypertext within postmodern theory and linear discourse...What do we take for granted as ‘givens’ in conversation?/ Is technology treated as myth?/ What is hypertext?/ “manhandling [my] text [and] interrupting it”/ intent vs. use/ Is the computer the tool destined for societal emancipation?/ a commodity?

I consider this thesis an embodiment of Roland Barthes *writery* text. Therefore, I have purposely left (some) things open for the reader to deduce. I endeavour to challenge the notion that the author has control over the absolute meaning of the text.

Acknowledgements

I wish, first and foremost, to acknowledge Jim Paul for his continued support and encouragement, but by doing so, I must also thank Susan Moore (a fellow student) for approaching me after my first GDER 600 class to ask why I hadn't heard of Jim Paul; why I wasn't working with Jim Paul; and why I wasn't pursuing phenomenology, hermeneutics and a bunch of other things I had never heard of. In all honesty, I thought who is this hyperactive person and why won't she leave me alone? It was Saturday morning; I just wanted coffee and to be spoken to in soft, slow sentences.

I am indebted to Dagmara Lewkowicz for editing the many drafts of this text and gracefully accommodating my one-day turnarounds. Similarly, I would like to express my gratitude to my family for the rent-free living conditions, free food, laundry service, privacy, and most of all, their ability to help me find things that I have misplaced (on one occasion, the text itself). I would like to thank Bill Hunter for being the first professor to have ever thanked me for trusting him enough to hand in an assignment that was "a little different."

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This also goes out to everybody who asked, "What is your thesis about?", "How is your writing coming along?", "Can I read it when it's finished?" and "Can you get a degree for that?" It is also for the person who said "You should finish your thesis soon because we are getting sick of hearing about it."

Finally, I would like to acknowledge the influence of author Philip K. Dick who inspired me to philosophize about technology without having surfaced in the text until now.

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Trying to think

Trying to (write what I) think

Trying to write what I think (I should write)

(I am) trying to write what I Think I should write

I am trying to write what I think you want me to write

I am trying to write how I think you want me to write.

I (am lying to) write how I think you want me to write.

I (am spying to) write how I think you want me to write.

I am trying to white how I think you want me to white.

I can't write how I link you want me to write.

I can't write how I think

I can't write how (I think) you want me to right.

I can;'t write I think

I acn't write how you want me to (write).

I can't write how you want me to.

I can'tr write how you want (me too.

I acn't write how you want (me to(.

I can;t write how you want

I cab't write how you wan)

I acn't write How you 9want)

I can't write How do you?

I can't write how you do

I acmn't write how do youb do?

(Ican't write) how do you do?

How do you do?

[Introduction, foreword, opening, prelude, preamble]

I write in this voice. I hear it in my head before I see it displayed on the computer screen. Lately, I have begun to question the ability of this voice. Not that it doesn't have anything to say, so much as I am not sure how to begin capturing how to say it. I should have finished months ago. Instead, I have not written anything new in weeks. I just move blocks of text back and forth, from file to file in an attempt to convince myself that I am accomplishing something. I know what I expect of myself and what is expected of me—or at least I think I do—nonetheless, I am worried because I do not seem to be making any headway.

One of the first authors I encountered during my research was Don Ihde. Yet I am not sure how to get his philosophy of technology to surface directly in my writing. My goal is to introduce Ihde's human-machine relations and illustrate how technology mediates experience. Ihde investigates how we live in one world in which there are many understandings of technology and he questions whether it is possible to reorganize the world (with technological advances) without transforming being. Therefore, I feel he is an important philosopher for anyone (teacher or otherwise) who is interested in the question of technology.

This brings me to my computer. I open my word processor and my problems have already begun. How do I begin?

If you think I should introduce Ihde by comparing him to something occurring around me (such as the music playing in the background), turn to page 11.

If you feel a more traditional approach is what is required, turn to page 29.

Once the activity of perceiving through the technology becomes automatic or *constituted*, the technology often becomes transparent to the user—I am accustomed to seeing the world through my glasses, just as I am accustomed to seeing my thoughts reflected back at me through my computer screen (via a word-processor). Thus, I experience my *self* through writing. technics embodied

examples such as a thermometer nailed to a grape arbor post which reads 28 F:

You would “know” how cold it was, but you still would not feel it. To retain the full sense of an embodiment relation, there must be retained some isomorphism with the felt sense of cold—in this case, tactile—that one would get through face-to-face experience...Instead, you read the thermometer, and in the immediacy of your reading you hermeneutically know that it is cold. There is an instantaneity to such reading as it is an already constituted intuition.¹

hermeneutic technics

She never listens.

When someone talks to things, they are thought to be mad. On the other hand, I do not have voice recognition software, but I talk to my computer all the time. Am I crazy?

No. Rather I am acknowledging the social role of technology in the lifeworld. Is it strange to think technologies should be treated as social actors as opposed to neutral tools? In Western culture it is customary to personify technological artifacts. Some people name their cars²; children care for digital playthings (Tamagotchis)³; and some Artificial Intelligence researchers even characterize computer intelligence as human-like. According to Idhe, “Hal [the computer] in *2001*, represents the fears that the ‘brain power’ of computers [could] soon replace human thinking”⁴. alterity relations

The technology is, as it were *to the side*. Yet as a present absence, it nevertheless becomes part of the experienced field of the inhabitant, a piece of the immediate environment.⁵

Examples include background noise (the technological hum of machines. For example the noise made by my computer’s cooling fan is fairly loud), shelter technologies (“human cultures display an amazing continuum from minimalist to maximalist strategies with respect to this version of near background”⁶), and scarecrows (which Idhe refers to as “ancient *automated* devices”⁷). background relations

Turn to page 15

Virtually every experience arises through technology, within the context of (an environment that has been transformed by) technology, or alongside technology. Idhe encounters technology by examining (the ambiguities surrounding) his existence in the world. **Praxis** is the use of know-how (practical knowledge and a level of skill that ensures both effectiveness and efficiency)—It is the relationship between knowing and doing—and **Technics** is described by Idhe as “the symbiosis of artifact and user within a human action.”⁸ Idhe is interested in how human perception is engaged with, through, and among technological artifacts. Idhe breaks these relationships down as follows:

(Human–technology)–World

A user’s experience of the world as enabled through technology. I wear corrective eye-glasses and as I have become so accustomed to viewing the world through them, I generally forget I have them on (I develop a transparency). But occasionally I am reminded that I am wearing them when I catch a glimpse of the frame’s rim in my peripheral vision. In these relations, the technology conceals the experience of the real world and immerses the user in a world of technological perceptions—a circumscribed environment.

A computer in the classroom connected to the Internet helps students reach the world outside. How in turn, does it change their perspective of the world?

Human –(technology-World)

Technology provides a frame of reference to something *other* in the world. Idhe’s examples include reading a map, using a car’s speedometer, and regulating a thermostat.

3) Structures of transformation, the specific shapes of non-neutrality: The primary structure of transformation to which I wish to draw attention is what I shall call the amplification—reduction—transformation.⁹

Technologies bring with them an amplification of certain possibilities and at the same time, a reduction of others. In Idhe's example of the stick with knife, it extended his reach to enable him to gather bananas. The technology "amplified certain bodily possibilities," but it also limited his experience. He was unable to experience the toughness (texture) of the stem and, therefore, didn't experience the entire sense of a 'living bunch of bananas.' Amplification stands out (that is why new technologies are so appealing) and, therefore, the reduction is not noticed until something 'occurs to recall it to mind.' The full experience of the banana is to know the 'feel' of the stem, but this can be easily forgotten when a user is 'wowed' by the ease of obtaining through the device.

The amplification—reduction also constructs a 'selectivity' around the technology. A technology which does one thing very well, will evidently do poorly at something else. Idhe makes an interesting analogy of the difference between writing with an old dip pen and writing with a typewriter:

...I began to play with those [old dip] pens through which there seemed to flow a visually delightful line. But also accustomed as many of us are to composing on the typewriter, I discovered that the ease and speed of writing was slowed dramatically. With the typewriter, thoughts flowed rather unimpededly through the paper, but with the pen one had the time to reformulate a sentence many times before ever reaching the end. In the process I began to discover a difference between the short, clipped sentences of speed typing and the inclination towards the old style of *belle lettres* through the pen. This is not to say the technology *determined* the style, but it certainly *inclined* it.¹⁰

Phenomenology is a difficult term to pronounce, let alone define. However, to put it simply, it is a philosophic methodological approach that draws out the essence of direct experience(s). The method used by Idhe, can be described as hermeneutical phenomenology. Although Idhe's method of inquiry is influenced by the writings of Edmund Husserl (1859-1938), and Maurice Merleau-Ponty (1908-61), he relies primarily on Martin Heidegger (1889-1976) and his '*praxical dimension of human existence*.' Before embarking on his own phenomenological praxis, Idhe addresses some of the fundamental issues concerning technology and society by discussing 'Heidegger's Hammer,' 'Husserl's Galileo' and 'Merleau-Ponty's Feather':

Heidegger's hammer is a famous example, which Idhe employs to illustrate how a user is absorbed by technology. Our relation to the world is one in which we encounter other entities or beings as ready-to-hand. All objects are 'relative to a context' and equipment or tools are seen as having a purpose "in order to ____." Someone just learning to use a hammer, is at first very aware of its possible function/use (something to bang nails into a wall), but eventually adapts to its operation and it becomes an extension of their body. As they get more comfortable with the tool it becomes the means of the experience, not simply an object (and the world then becomes a collection of hammerable things). However, when or if the hammer falls apart or becomes lost, it ceases to be a hammer and loses its being (as Heidegger notes, its being is *concealed*). A hammer is only truly *what it is* in the act of hammering.

Here Heidegger is describing an actional praxis, which implies seeing the world as a *resource well* and as Idhe adds, "This is also to say that such uses 'reveal' a world." ¹¹

This is too weird, I think to myself as I take the record off and put it back into its sleeve.

It is fine to like Kraftwerk but how can my interest in electronic music be confused with the serious examination of ideas? Who is going to accept this? I have heard “write what you know,” but I also have to show that I can research and to some degree, prove that I am *well-read*.

Nonetheless, I lack confidence in my abilities as a *scholar* and thus I am amazed I’ve made it this far. But if I keep this up, the rug will be pulled out from underneath me—someone will call my bluff—or something (more academic-sounding) to that effect.

* * *

I am summoned by the intellectual elite. Although I don’t want to appear fearful, I can’t help but stare at the tribunal nervously.

“Well, thank you for trying. We thought it would be nice to study you.” A distinguished-looking man with white hair and a beard chuckles, before stating matter-of-factly, that, “Writing should be left to intellectuals.” Before, he and his friends disappear down the corridor, they signal for security. In what seems like seconds, I am escorted out. I look back at the ivy-covered tower, disappointed only by my not having the courage to respond to those scholars.

Why did I ever doubt myself?

THE END

I hear a melody that I like and slide the record backwards with my hand so I can hear it again (a *backscratch* in DJ nomenclature). I have now moved into Idhe's second type of experience. *Experience with machines* (**machine as quasi-other**). The record itself is what is experienced. I can respond to the vinyl by using the turntable to both interrupt and interact with the record. Although I am able to relate directly *through* a machine "to something other in the world," such as when I listen to music through headphones, I am also able to relate directly *to* a machine "as something directly within my attention to the world" when I scratch with the record.

However, there is a third type of experience, wherein technology "is neither focal nor so direct,"¹² it is what Idhe calls *experience among machines*. These 'background' relations are not far from us. Idhe cites lighting and heating in our homes and offices as examples of us existing in the 'technological texture' of the world (**machine as immediate world**). I am surrounded by technologies which are so familiar to me that sometimes I don't even notice them, as Idhe writes "we take background relations for granted until they fail or obtrude."¹³

My favourite song on *The Man-Machine*, "Neon Lights" is also the lengthiest (nearly 9 minutes long). I am always mesmerized by the latter part of the track due to the way Kraftwerk weave intricate melodies in and out of the texture. Some of the sounds in this song are machine-like. So much so, that I managed to incorporate the sound of my computer's cooling fan into the song. I only realize that I had done so during the silence between tracks. The next song "the Man-Machine" starts but I can still detect my computer's rhythmic hum. I can't imagine how I was ever able to ignore it. It is now all I hear. Idhe maintains that "computer technology is...somehow both *behind the scene* and yet also *active*."¹⁴ Hence, my experience with "Neon Lights" is a perfect example of this sentiment.

Most commonly, technology transfer is regarded as something old versus new. Pullias (1989) identifies three methods regarding the implementation of 'new' technology in education: "Discard the old and begin fresh; keep part of the old, install part of the new, and ease into full implementation; or disguise what you have been doing for years and try to make it look like a new curriculum."¹⁵ None of these address how technology transforms being. These viewpoints either assume technologies are "merely instrumental and thus implicitly neutral, or [they] assume that technologies are fully determinative and thus uncontrollable."¹⁶ To enter any relation with technology is to be both *in control* and *controlled*.

These issues of control have me bewildered. Compromises must be made. Something has to be lost for something else to be gained. As Michael Heim notes: "The computer doesn't merely place another tool at your fingertips whole. It builds a whole new environment, an information environment in which the mind breathes a different atmosphere."¹⁷

I wonder how technology is shaping the "book" (and my notion of literacy)? Is it still evolving? Will there always be ever-newer notions of "book"? I don't know of anybody who hasn't surfed hypertext on the Internet. I enjoy the genre of hyperfiction (For example Shelly Jackson's *Patchwork Girl*). Each time I read through one, the experience is different because I make different choices. In both hypertext and hyperfiction, reader response is a more powerful concept. The writer gives more authority to the reader, who in turn, makes relationships throughout and outside of the text.

from his real human voice, which I might have heard if I were alongside of him in the recording studio. This may be a metaphorical statement on the part of the band, because a recorded voice is already technologically enhanced (and therefore altered) by some form of technology. Kraftwerk is merely reminding us of this fact by producing such an obvious version, where the listener's experience is that of the technology.

I remember driving somewhere with my father, in his car, listening to his adult-contemporary station, when Cher's "Do You Believe in Love" came on the radio. In part of the song her voice is digitally altered in a blatant way and knowing I listen to 'computer music,' my father turned to me and asked, "How can she perform this live?" Although I was initially offended by Cher's attempt at being hip and glared at my father for insinuating I would know anything about this has-been, if I were to make a guess, I'd venture that she would most likely lip-synch to the music. Still I decided to give her the benefit of the doubt and used the analogy of a guitar pedal instead. Her voice could be altered as she sings in the same way a pedal alters the sound of an electric guitar while it is being played. A guitar pedal is a piece of technology that is an integral part of most rock concerts, but the issue of the sound being live is never in question. This is just one example of the way in which we take for granted technology. Some technologies are not questioned in the way others are, but *every* technology affects experience in some way. However, as Idhe writes, "I do not wish to imply either negative or positive values for the transformation as such, but wish to underline that there is a significant transformation of experience in the use of technologies." ¹⁸ My apologies to Cher.

If Don Idhe's writing were translated into music would it sound like Kraftwerk? After all, in 1978 Kraftwerk recorded *The Man-Machine* and in 1979 Idhe's *Technics and Praxis* was published (where he theorizes about *human-machine* relations). Kraftwerk is a German band who use devices like keyboards, drum machines and sequencers to make their pre-eminent *electronic music* (while playing with the modernist notion of 'the machine as art' by mimicking robots). However, beneath the predictability and accuracy of their robotic overtones lies a humanness—the ability to place grooves in just the right places.¹⁹ They are on all sides of technology, wavering between utopian promise and totalitarian threat. My response to the four theses in Chapter 5 of Idhe's *Technics and Praxis* ("The Existential Import of Computer Technology")—a chapter which summarizes the issues surrounding his human-machines relations (the non-neutrality of technology, the ways technology is experienced by a user, the amplification—reduction—transformation continuum and the computer as *self-reflection*)—is to listen and respond to Kraftwerk's *The Man-Machine*—an album which summarizes the philosophy of the group's music as a whole.

(1) The use of technology is non-neutral, it transforms experience.

As Idhe writes "many of my perceptions are transformed in a mediation, a mediation which in some way employs, encounters, or engages some form of material technological artifact."²⁰ He provides the example of using a stick with a knife attached to garner bananas from a tree. The stick extends his reach and introduces a level of selectivity to the action. [Explained further in the third thesis. See p. 5.]

The first track on *The Man-Machine* album is "The Robots." The chorus consists of the simple lyrics "We are the Robots,"²¹ repeated in a monotone voice processed through a vocoder.²² The singer's *robot* voice heard on the record is noticeably detached

Husserl's Galileo. Heidegger's praxis is actional, whereas Husserl's praxis is "the intuited material, bodily and perceptual world of objects."²³ Husserl was critical of Galileo and his mathematization of the world because he believed the lifeworld *must* be a sensory one:

Husserl's Galileo may be said to inherit and stand between two world dimensions. On the one hand, he lives, as all do, in the world of perception in its prescientific significations, among 'bodies,' including his own. On the other hand, Galileo inherits a culturally acquired special praxis of geometrical thinking which he turns to new use in his physics.²⁴

The true characteristic of the lifeworld is by no means an inferior form of truth when compared to 'the exactness' of scientific truth. Husserl argued that truth was already presupposed in scientific research and claimed that an ontology of the lifeworld must be developed (a systematic analysis between human experience and the material world of things). This lifeworld, in turn, is (or should be) the groundwork of all scientific constitutions of meaning.

Idhe suggests limitations in Husserl's thinking. Mainly that he does not take into account the praxis component of scientific knowledge. Idhe claims Husserl's "view of science concentrates on what science *thinks* rather than upon what it *does*."²⁵ Science is an embodiment of technologies and instruments:

For through instruments, science in its modern form never loses its perceptions. Whereas Heidegger implicitly begins a philosophy of technology in relation to these analyses, Husserl does not yet open the door to such a philosophy.²⁶

* * *

I hesitate for a moment... As you will no doubt have observed, I have stumbled upon the great debate surrounding the origins of scientific thought. Although I am an enthusiastic hard sell concerning all *things* science, this is an invitation to make connections. I could take my writing to new heights. Science is important, therefore people will take notice.

If you think I should investigate 'science' further, turn to page 19

If you think I should skip this inkling and carry on with Merleau-Ponty, turn to page 22

Don Ihde's human-machine relations—embodiment (computer as extension), hermeneutic (computer as language), alterity (computer as 'other'), and (computers as) background—are all part of the single 'world reflection.' Technology affects entire situations, bringing about "interesting and often dramatic changes in the ways humans interpret both their world and themselves."²⁷ Computers are part of the world of both technophobes and technophiles. The omnipresence of the computer has changed my perception of the world: I recognize a global village. In turn, I have changed my perceptions about them (computers are important) and my perception of myself (I can relate to computers. I am computer literate).

Maybe that is why people are finally beginning to appreciate the importance of Kraftwerk's music:

Man Machine, pseudohuman being

Man Machine, superhuman being

[repeat]²⁸

The End

A couple of weeks ago, I brought a class of twelve-year-olds into the computer lab to do some word processing. I approached it interpretively, focusing on programming data (keyboarding and formatting), printing and reading/interpreting the results. However it occurred to one of my students (who is a proficient typist) that keyboarding is faster than writing by hand. She began to see the word processor as a way to capture her thoughts more quickly and started trying to fill the page with text. The computer is an extension of her body (as it embodies her thought process). I noticed her typing away feverishly (as I walked around the room trying to see if each student had successfully changed their font size from 12pt to 18pt). Another student (who dislikes typing) asked if he could print by hand. I asked him "why?" "This *writing* is unnatural," he replied.

To him, the computer provided a more rigid version of the writing process, one lacking the personality he sees in handwriting. His association with 'computer writing' (word-processor as other) is an alterity relation. A couple of other students had already finished and had begun printing out their work. They were accustomed to writing with a word processor. It was second nature to them and they did not understand why I am spending time helping other students do something that was so obvious to them.

Perhaps they were right. This was neither a computer class nor an English class, but an art class. I brought my class to the computer lab because I was trying to introduce text into art making. I ended up spending more than half the lesson teaching them the finer points of Microsoft Word. What started out as a lesson on "Text as an Art form" diverged into an unexpectedly tedious morning for me. All I had wanted to do was to have students print off the text (they had created in advance) to incorporate into their Barbra Kruger ²⁹-type photomontages, but my student's various perceptions of word processing changed things in ways I hadn't expected.

Although it is difficult for this, or any text, to be regarded as something other than hermeneutic, on some level I perceive my thoughts as electronic data. On some level this text is an embodiment of my thought process (writing as a state of mind). Through the flexibility provided by technology (the word processor and desktop publisher) I am able to show that I have ideas which constantly trip over themselves. **technics embodied**

Anything which involves the interpretation of language, codes or reading, is experientially hermeneutic. **hermeneutic technics**

Human-(technology-world). Here the primary attention is on the instrumentation. Technology mediates a user's perspective of the world. The skill required for understanding this text—reading—is dependent on learning a specific language.

In a March 1, 1994, article in the *Wall Street Journal* ("Befuddled PC users Flood Help Lines, And No Question seems Too Basic):

...A Dell technician...says he once calmed a man who became enraged because "his computer had told him he was bad and invalid." [The technician] patiently explained that the computer's "bad command" and "invalid" responses shouldn't be taken personally.³⁰

These anthropomorphic relationships are a common response to technology and occur in ancient non-Western cultures as well: **alterity relations**

The religious object (idol) does not simply 'represent' some absent power but is endowed with the sacred. Its aura of sacredness is spatially and temporally present within the range of its efficacy. The tribal devotee will defend, sacrifice to, and care for the sacred object.³¹

This text was born out of the writer's block I was encountering. When I first began to struggle, my first notion was to change environments. I retreated to my family cottage to read, clear my head and hopefully, write. The reading and the clearing of my head occurred but I was still unable to write. I had too much time. Time is, for the most part, a **background relations** background relation. I needed to be busy—working full-time where I could *find* time—

'Human' is outside the brackets. Although, technology is still intervening, the focus now is on the instrumentation. The perception of the world is via technology, I only actually know how fast I am travelling because I can see my speed displayed on an instrument on my car's control panel.

A computer in the classroom connected to the Internet helps students reach the world outside (and the world outside to reach inside students). What do they see and how are they seen by the technology?

Human—technology (-World)

Technology is something *other* in the world. Here Idhe illustrates how technology distances a user from the world. Idhe refers to this stage of technological otherness as *quasi-otherness*. A common response to playing a video game is the *I refuse-to-be-fooled-by-a-clever-machine* mentality that a player possesses when competing against 'the computer.'

A computer in the classroom connected to the Internet helps students reach and play with the world outside. Why then, do most no longer want to go outside to play ?

* * *

I wonder if the rhetorical questions tacked on to the end of my explanations of Idhe's diagrams seem out of place. They might break up the flow of my writing or appear as afterthoughts. Nevertheless, I am sincere and earnest. I want teachers to get their students thinking about the limitations of the Internet—to question whether it is anglicizing the world and notice the ways in which (all) information is biased and untrustworthy. I also want students to recognize what is missing or absent from their perceptions of the world when they form their opinions based on things occurring on a screen.

In the second strand, Idhe illustrates how the introduction of the machine reorganized social power in the factory system. It was introduced to standardize the product but in the process standardized the worker. Furthermore, the mechanization of the factory introduced a technological order as well as a social order. Likewise, a computerized society is about a shift in power. (Without editorializing on whether computers make life more efficient or less efficient, they inevitably transform experience.)

Kraftwerk is about revealing how technology transforms experience while still managing to (somehow) not allow their music to be completely transformed by the technologies they utilize. However, that has not stopped other people from using the technology of the sampler to literally transform the experience of Kraftwerk's music. There is a station break (the pause between programs for an announcement of station's identity) currently running on *Much Music* which uses the first few bars of the song "The Man Machine" and I'm not sure if the editors at *Much Music* are the ones who borrowed from Kraftwerk or if it is part of a song by another artist who has sampled Kraftwerk that these editors have used to make their video montage.

* * *

This Idhe/Kraftwerk example started as an easy 'in' to my topic, but it is so lengthy it might now be my topic. I have tackled three out of four of Idhe's theses—there is but one left. Do I continue? Or should I attempt to focus on something which addresses the concerns of those who teach with technology (whom I perceive to be my intended audience)?

If you feel I should go on to the fourth thesis, turn to page 18

If you think I should refer to a teaching experience (in hopes of making things more relevant), turn to page 14

(4) The existential import of computer technology is a ‘world reflection.’

Through existential relations—machine as self extension, machine as quasi-other, and machine as immediate world—individuals alter the way they perceive their world by focusing on one interpretation or image of the world (which in turn influences the way they perceive themselves). When a person relates to something it reflects back on them. I interpret myself in terms of my world.

Technology affects culture, but in so doing, culture affects technology as well. What is prominent about technology gets amplified and what is overlooked or reduced by technology gets forgotten. As Idhe writes, “what is needed as much as the attention to the possibilities of amplification is the needed critique which reminds us of reduction.”³²

* * *

Does this make sense?

If it is unclear to me, surely you too will be confused. What is Idhe trying to say? More importantly, what am I trying to say? I am almost done with these examples, perhaps I can write my way out of this one. However, I do want to be honest.

If I should carry on and be forthright about my confusion with Idhe’s fourth section,
turn to page 21

If I should work through this and come to terms with what Idhe is writing about,
turn to page 13

Scientists have increasingly been satisfied to present quantitative measures of phenomena, without ever asking what the measures mean in human terms. Although I realize a debate about science will inevitably lead me away from my topic (Don Idhe and/or hypertext). I still attempt to engage in one. Idhe purposely stays away from these types of debates. Although, he treads near them:

Science and its mode of seeing is now part of our macroperceptual world. It is a cultural acquisition that situates the very bodily perception we retain, but it overlaps or does not overlap with what must be, for us, a lost prescientific world.³³

I am not an expert on scientific theory, but I still want to challenge it. I believe science is privileged in Western culture because it is a sacred language. One which is purposely confusing (with all its Latin names and intangible equations) in order to keep the numbers of people who are able to understand it, down to a minimum, so they (the scientists of the world) can maintain power. Before I am able to re-think this huge statement, I have already wandered across campus to what I regard as “the science-area” and began yelling, “I’m on to you. I know what you guys are all about!”

It takes me most of the night, but eventually someone working in the lab comes out to see what I am carrying on about. It is a girl in a white lab coat. She takes me inside.

* * *

I am not sure when or where I was released. I’ve lost all perception of time and my sense of direction is gone. I am hopelessly lost. In my last moments, before I succumb to the hot sun, I think I have found a lake of clear refreshing water. But there is only sand under my feet.

The End

because I can't stop writing or adding to what I have already written. It is so easy for me to continue my thoughts—that I can't stop. I may never be able to end this.

By allowing technologies to transparently satisfy my desires (which apparently is to produce a text of megalomaniacal proportions), I have uncovered “the dangerous seduction of technological devices” as Hubert Dreyfus writes: *technics embodied*

It is probably too late—many versions of things you ‘know’ are traditions that history has handed-down.³⁴ The language I use is a shared, common language. One known to you. Through this language _____ can be communicated to you hermeneutically and it is through this language that you can attempt to understand me. *hermeneutic technics*

As Idhe notes, “Through hermeneutic relations we can, as it were, read ourselves into any possible situation without being there.”³⁵

Within this text its thingness is accentuated by the Choose-Your-Adventure metaphor. You may experience this text as a quasi-otherness, when you are required to make decisions. The choices provided, such as “*If you decide I should go ahead with this example, turn to page 23 : If you think I should back out, turn to page 21,*” prompt you to respond to the text—to this thing that is the text. It is my attempt to suspend the belief that this text is unchangeable and simulate a world where the reader controls their own destiny. However, the text doesn't physically change—it is still fixed into permanence by the very nature of it being printed. *alterity relations*

But it didn't take long for me to realize that ironically what I was trying to escape (the high-technology of my living environment) is what actually helps me to concentrate. When I write I am in front of my computer, but there are also various things *happening* in the background (often simultaneously). I play music, watch TV (with the sound turned down), talk on the phone and surf the Internet (incidentally, I recently switched browsers to Opera which enables me to view a split-screen of up to four pages). *background relations*

Turn to page 32

Writer's block can be such a debilitating force. The most common advice is "let it go, begin in the middle", but things don't come that easy. "Idhe as Kraftwerk" came to me after countless attempts. It was difficult to write Idhe into anything and this example seemed to fit because it was so simple (at least the first three parts were). Yet here I am, chin deep with no way out. I don't understand the fourth thesis. Does this distract from my understanding of the previous three ?

It weakens my argument. However, misunderstanding is part of the way I experience the world. Why then am I so afraid to admit it? There is no reason for me to sort this out and tack on an appropriate conclusion, (although I feel obligated to).

Writing may be the fundamental learned process we (in the West) have for placing our thoughts before us, but thoughts don't start at the beginning, create a middle and follow with a conclusion. If I wanted to, I could easily change or delete words with a stroke of a key and impose sequence afterward...but I am tired of these language games.

* * *

Then before my eyes, I see what I have been searching for—the answer to all of this—and in a fleeting moment, it disappears.

I wait for its return, and I wait and wait and wait and wait...

THE END

Merleau-Ponty's feather. Both Heidegger and Husserl were precursors for Merleau-Ponty, who Idhe calls “the perceptual aesthetician.”³⁶ Merleau-Ponty is important for Idhe's philosophical praxis because he illustrates how humans incorporate the world into their bodies—“a strict phenomenological correlation between a ‘lived’ body and the perceived world.”³⁷ Merleau-Ponty's examples include an organist, a typist, a woman with a feather in her hat, a blind man using a cane, and a person driving an automobile. In a sensationalized way, these ‘objects’ become part of the user, and the user becomes part of these objects. This body-world relationship “anticipates a different role for technologies within the realm of perception and praxis”³⁸ because the body can be extended through technological artifacts.

The woman with a feather in her hat “may keep a safe distance between the feather in her hat and things which might break it off. She feels where the feather is just as we feel where our hand is.”³⁹ Similarly, a person driving an automobile can enter a narrow opening “without comparing the width of the opening with that of the wings, just as I go through a doorway without checking the width of the doorway against that of my body.”⁴⁰

These are what Idhe terms, embodiment relations:

Here is the basis for perception at a distance, mediated through...technology; and here is the latent phenomenology of instrumentation. One can see that this analysis complements Heidegger. In the hammer example the tool “withdraws”; but in the Merleau-Pontean feather...it is part of world which is reached through this withdrawal.⁴¹

Ideas venture off in various directions, often unwilling to commit to any one line of an argument. This text not only represents my journey through this text, it is me travelling through it.

technics embodied

Idhe is correct in his assessment that technologies 'change the basic situation,'

Knowing how to read (and in this case understanding what it is like to write) the English language is essential for realizing/experiencing this text. To understand writing, you have to perform it.

hermeneutic technics

Hermeneutic relations need an object or frame of reference. The space this text occupies is a reference to _____ (my journey through it —Embodiment, the thing itself—Alerity) as well as a reference to the world of words and the act of interpreting them. How do you as a subject stand in front of this object and find out what it is?

According to Idhe, a computer's otherness is a 'quasi-otherness', because "its genuine usefulness still belongs to the borders of its hermeneutic capacities." ⁴² Quasi-otherness can occur in a video game, or with any "technology that fascinates and challenges." ⁴³ In video games the machine is other—a conquerable opponent.

How is this text other? Is it a conquerable opponent?

alterity relations

Not quite. Its otherness is revealed in Heidegger's notion of a *thing thinging*. Although it is difficult for this, or any text, to be regarded as something *other* than hermeneutic, there is this phenomenon of the thing thinging before us.

to be inspired to write. Allotting time to actually sit and do it just added undue pressure. For this reason, the trip to the cottage was unsuccessful.

I also couldn't get any *work* done up there because I wanted my *things*. Naturally my computer is important—the wordprocessor and a desk top publisher contribute to my style of writing.

background relations

Turn to page 20

The album *The Man-Machine* itself is rudimentary (by today's technological standards) but that doesn't detract from the overall feel. Kraftwerk were well aware of technology's ability to amplify some aspects and reduce others. The problem with playing synthesizers and signing through vocoders for some, is that it all sounds too artificial or machine-made—that was Kraftwerk's goal. But what separates their music from much of the techno produced now (twenty-two years later) was the subtle humanness lurking beneath their machine-driven surface. A sequencer can help place rhythms and beats accurately in place, more steadily than a human can, but these gains in accuracy must be weighed against the loss of human expressiveness and emotion. Kraftwerk flirted with the notion of being a machine and at times are quite convincing, but for me, their appeal is their rhythm and beat structures, which have too much feeling in them to be produced by machines alone. They may sing "We're functioning automatic/And we are dancing mechanic" but clearly they know when to override the machine.

A computer can only select out of a range of human experience and as Idhe notes:

The computer orders a dimension of possible experience. But more than this, it selects out of both the entirety of human experience analogues, not only language but a certain selectivity within language.⁴⁴

For the most part, a human's interaction with a computer would be placed within Idhe's distinction of *experience with a machine*. In fact Idhe takes this distinction one step further and calls it a hermeneutic function (meaning roughly to interpret a text), because a relation with a computer is "analogous to 'writing' (programming into a computer language) and 'reading' (interpreting the output)." ⁴⁵

This third part is rather lengthy. Perhaps I am losing you? What should I do?

Continue and explain this third thesis further, turn to page 26

Move on to the fourth thesis, turn to page 18

I have now provided sufficient background information on Don Idhe's phenomenological techniques (embodiment, hermeneutic, alterity and background relations) to examine how they occur simultaneously in the world, by relating them to my own writing.

A computer selects and amplifies our “calculational, deductive, factorial and functional analytic experience”⁴⁵ and reduces it to data which is binary and linear. Therefore it can only allocate a measurement of possible experience. The problem with electronic or techno music, is that much of it is over quantized (a function on some sequencers which modifies the information in its memory to improve the rhythmic accuracy and correct playing errors). This is not to say that Kraftwerk does not quantize their beats and set them within an allotted time signature, for example a 4/4 kick drum, because that is where their robotic meticulousness comes from. However, to quantize is to restrict some other element and Kraftwerk fulfills this missing (human) section by layering their highly quantized songs with unmechanized instruments like flutes (and sometimes they even mix in *live* drum sounds to help create their funky rhythms).

In his book *Snap to Grid: A User's Guide to Digital Arts, Media and Cultures* (2000), Peter Lunenfeld uses the command “snap to grid” as a metaphor for how human users operate and reason through machines. The command “snap to grid” is a function in various computer design programs used to inform the computer to take hand-drawn lines and position them precisely within a set margin. As Lunenfeld writes “Snap a freehand sketch of a rectangular shape to a grid and it immediately becomes a flawless, Euclidean rectangle.”⁴⁶ This command may help artists with spacing, continuity and overall exactness, but these gains in precision are accompanied by a loss of spiritedness. “Snap to Grid” and quantization work on the same principal: They are near-perfect at executing certain aspects (exact precision) but neglect aspects at the other end of the continuum (those relating to the idiosyncrasies of human behaviour). Lunenfeld proclaims that “artists regularly disable the snap to grid function the moment they open an application,” but I don't. When I create on a computer I do so because I want the straight lines and accuracy of the machine.

Teaching with technology is difficult. Not only does the instructor have to be able to troubleshoot (answer technical questions), but they must also have to be able to react to (and attempt to understand the origins of) the various responses of their students—which an unforeseen encounter with technology will likely bring to light.

As Idhe writes:

Because humans are also existentially and necessarily related to what they perceive as their world, they 'bring it close' so that ultimately they also interpret themselves in terms of their world. Put most simply, the 'image' of the world expressed as the interpretation of what world is, is self reflected back, ultimately, into a self-interpretation in the process of 'bringing close.'⁴⁷

That is why I have moved my computer out of my bedroom. I need distance. I am on vacation now. And I still have another week until I face my next group of technology-curious students.

The End

“TECHNICS EMBODIED”

Embodiment relations (**technology as self-extension**) occur when the world is perceived through technology—For example, seeing through eyeglasses, or a telescope. Hearing through headphones or a hearing aid. As Idhe notes:

In extending bodily capacities, the technology also transforms them. In that sense technologies in use are non-neutral. They change the basic situation, however, subtly, however minimally...⁴⁸

“HERMENEUTIC TECHNICS”

Idhe’s description of a hermeneutic relation (**technology-as-other**) is a user’s experience of “a special interpretive action within the technological context”⁴⁹—For example, reading a textual translation such as a graph or a map, regulating a thermostat, or monitoring instruments in your car’s control panel. Idhe provides simple but effective

“ALTERITY RELATIONS”

Alterity (a term Idhe borrows from Emmanuel Levinas⁵⁰) relations (**technology-as-quasi-other**) occur when a user’s experience is that *of* the technology—For example, having a (limited) conversation with a telephone answering machine. Within the experience of this machine (a device which provides a pre-recorded answer to an incoming caller, enabling them to record a message”) is a cool robotic female voice which helps me retrieve my messages. If I enter the wrong password, she says “I’m sorry that is not the correct password. Please re-enter your password.” If I miss it again, she says “Sorry you are having trouble. Please try again later. Good-bye.”

Sometimes I talk back to her. “Don’t disconnect me...”

“BACKGROUND RELATIONS”

Background relations are experiences with those technologies “which remain in the background or become a kind of near-technological environment itself.”⁵¹ These are not what Idhe terms as a transparency or an opacity. Rather these are relations where,

Don Idhe is a phenomenological scholar and author of numerous books—including *Technics and Praxis* (1979) and *Technology and the Lifeworld* (1990)—which centre around a philosophy of technology. His approach is to observe the *taken-for-grantedness* and *forgetfulness* which envelop technology, by looking at the *things* around him and presenting these experiences in terms of human-machine relations (embodiment, hermeneutic, alterity and background). As a consequence of (or made possible by?) the examples he provides, I have become aware of the simultaneity of experiencing technology in multifarious ways. This helps open up perspectives for theorizing about technology beyond the dualism of *old versus new*. However, there is a trade off—it makes the process of writing more difficult because writing itself is a technology. Therefore, I see more than one possibility for writing this text. For example, the topic of writing—writing about writing. I am aware of my vulnerabilities (It takes tremendous courage to extend my thoughts to others), I am mindful of the limits of language (Writing is a totally simulated environment), I question my perception of this text—Is it a thing I can own and control? (There is a ‘thingness’ about it beyond interpretation and my thoughts being transformed through it). Beyond this there is also a certain reverence toward language itself in the world (Why is it so important for me to write? Researchers could already fill a library using the theory of historical writing alone, what could I add to this? Who will even take notice? Or better yet, who decides if what I am writing is important?)

If you feel “...This helps open up perspectives for theorizing about technology beyond the dualism of *old versus new*,” needs further explanation, turn to page 9.

If you think my next step should be to introduce the central theme(s) of Idhe’s phenomenological praxis, turn to page 4.

If you believe I should present some of the theories employed by Idhe, turn to page 6.

Error 404: Not found

The End

However, I disable the command sometimes for the very reasons Lunenfeld cites, “because the gains in predictability and accuracy are balanced against the losses of ambiguity and expressiveness.”⁵²

As Martin Heidegger observes “the essence of technology is by no means anything technological.”⁵³ A computer is “context blind” and does not respond to the fluctuating environment which surrounds it, but to a pre-set program. Idle presents an example in two strands. In the first strand, a computer is employed for organizing data (student records for a graduate school where Idle teaches) and takes what is a simple task and makes it more complicated. The computer is only able to categorize data in ranges (grades A, B, C) but can not read existing overlapping data (non-grades R for continued research and S,U for supervised teaching projects) which has to be entered by hand. More ‘flexible’ sections are then created, which results in a considerable amount of paperwork (which still doesn’t solve the problem). When the registrar proposes to add even more sections, Idle imagines a student worker being hired ‘just to carry the bulk of the paper’ and fears needing ‘to buy more file cabinets for storage of records.’⁵⁴ Although (in this example) the result of the technology is a negative one, Idle is not interested in arguing the ‘ultimate possibilities or impossibilities’ of a computer. This problem could be rectified by ‘the abilities of an ingenious programmer.’ However, the best one could hope to do, is resolve the situation by making this ‘area of judgemental competence’ less conspicuous to the user. A computer can only determine a *range of possibilities* resulting in what Idle refers to as an ‘inclination’ towards certain kinds of experience simulated by a computer.⁵⁵ The computer transforms experience and, therefore:

the distribution of power is now being ordered roughly according to how close one is to the source of the technical use of the computer...[his] Department is on the receiving end (least power), the registrar is closer to the source (more power), but the actual developer and programmer and determiner of order has the decisive power.⁵⁶

Because the word processor makes writing easy for desiring subjects and this ease in writing solicits us to enter discourses rather than produce finished works, the word processor...solicits us to substitute it for pens and typewriters, thereby eliminating the equipment *and the skills* that we appropriate for modern subject/object practices. It takes a real commitment to focal practices based on stable subjects and objects to go on writing personal letters with a fountain pen and to insist that papers written on the word processor must reach an elegant finish. If the tendency to rely completely on the flexibility of technical devices is not resisted, we will be left with only one kind of writing implement promoting one style of practice, namely those of endless transformation and enhancement.⁵⁷

technics embodied

Whether you are reading this in a comfortable chair in your office or home, or on a noisy subway, the 'bookness' of this text doesn't change. You know you are on, page 32. But you are also somewhere else. You are within the text you are holding in your hands. Idhe writes "Textual transparency is hermeneutic transparency, not perceptual transparency."⁵⁸ Language is the place in which there is *this* space between you and this thing which is this text.

hermeneutic technics

What changes is how the text is received. The formula is familiar enough to keep you from getting lost (Thanks in part to the formatting of newspapers and magazines). But, not so familiar that you remain rooted in the habits associated with reading. As Heidegger writes, "In the default of nearness, the thing remains annihilated as a thing in our sense. But when and in what ways do things exist as things?"⁵⁹ You experience this text and engage in an alterity relation when you become aware of the presentation of the text as a thing in itself.

alterity relations

My experience in and of the world is multilayered and my writing only began to take shape when it reflected this view. This text is a staging of (what Idhe refers to as) the "*technosphere* within which we do a good deal of our living."⁶⁰

background relations

The End

Think of **this** as a *writing into*, with the hope that **I** may write my way out. It may be helpful for prospective readers to understand, **this** is an act of implicitly aural/oral readership, merely in the guise of the printed word. Although I choose a form of writing **which** is intentionally printed (not digital), I hope to question the fixed permanence of book-technology by writing in a style which **approaches the** potential of **hypertext**. Jay David Bolter believes "the printed book **is** an extreme form of writing, not the norm."⁶¹ If so, then what is the 'norm'? Of all available idioms, hypertext is latest to challenge the print-bound book. It has **already** begun to change the way people read and write (while grappling with issues of time and space) and the shape of the printed word **itself**. It is my attempt to address the skepticism that exists in my own technological present. Forms that simultaneously utilize the communicative abilities of different layers of text are generally associated with entertainment or advertising, but not frequently enough with the serious examination of ideas. One of the most difficult obstacles for **a** writer to overcome is to be able to recognize the extent to which the printed word has determined and delimited almost every aspect of Western culture. It is therefore **necessary** to question assumptions about the whole concept of writing in discussing the impact of hypertext on our culture. Hypertext is an emerging form of expression, with an emerging set of rules and conventions. How can I express a **plurality** of narratives and avoid being deemed as someone who lacks focus?

paste

```
<!DOCTYPE HTML PUBLIC "-//other codes//DTD HTML/EN">
<html>
<head>
<title>mindless entertainment</title>
<meta http-equiv=Content-Type content="text/html; iso-8859-1">
<meta name="Author" content="d2b">
<meta name="Description" content="Does hypertext strive to satisfy the postmodern condition by challenging grand narratives?"></head>
```

cut

Can I admit up front that I am seeking to pursue a question **which** I cannot possibly answer? Technology is far too complex to be defined exclusively in terms of good or evil. It is a trickster with possibilities which **are infinite**.⁶² The best I can do is to circle around the texts which have helped me realize my confusion is normal.

This is an introduction (of sorts) to the section beginning with a Frontispiece by William Ivis, Jr., (if you haven't already read this section) turn to page 87

(2) Within overall experience, there are a number of primary categories such that the user of a technology may experience technological artifacts in several different ways depending on how the artifact is related to the user. ⁶³

The first type of experience is *through a machine*. Idhe experiences the bananas through the stick, and even writes that he specifically “felt them being cut *at the end of the stick itself*.”⁶⁴ Therefore technology has the capacity to extend experience through it (**machine as self-extension**) .

I put on headphones and listen to “Spacelab” the second cut on *The Man Machine*. I hear ascending arpeggios and an electronic kick drum as the song builds up momentum. What I am hearing is extended beyond time and space. I experience the Kraftwerk of 1978 through the headphones of my technological present. The headphones (recorded music, and record player) form a connecting link between me and Kraftwerk.

If you think I am begining to stray off topic,
Turn to page 7

If you want me to continue with the Kraftwerk analogy,
turn to page 8

It bothers me that some students would rather interact with a simulated environment than go outside for recess on a beautiful day.

*** * ***

Is the air as fresh as I remember it being? Was the sun this hot?....

Come to think of it, what did I really like about recess?

It was crowded, noisy and much too short. The games were fun, but the playground was always off limits. In fact, I used to cheer when the weather was bad and we were awarded an indoor recess. Would I take foot hockey or dodge ball over a colour Gameboy (a portable video game console which allows a user or 'gamer' to interact [play] within a simulated simulated environment[complete with a colour screen] anytime, anyplace)?....

*** * ***

Technology shapes experience and changes everything. For example, hypertext has altered the way in which I think about and approach writing. There is a restlessness and instability about the structure (visual display) of hypertext which I am drawn to...

Notes

- ¹Don Idhe, *Technology and the Lifeworld* (Bloomington and Indianapolis : Indiana University Press, 1990), p.85.
- ²Neil Young went beyond naming his car—he wrote a song for his called “Long May You Run.”
- ³Tamagotchis are the original virtual pets made by Bandai company. They look like cute calculators. However, they need to be virtually fed, virtually bathed, virtually played with, and kept virtually healthy or they will virtually die.
- ⁴Don Idhe, *Technology and the Lifeworld*, p.106.
- ⁵Ibid., p. 109.
- ⁶Ibid., p. 110.
- ⁷Ibid., p. 109.
- ⁸Ibid., p. 73.
- ⁹Don Idhe, *Technics and Praxis* (Dordrecht Holland: D. Reidel Publishing Company, 1979), p.56.
- ¹⁰Ibid., p. 57.
- ¹¹Don Idhe, *Technology and the Lifeworld*, p.34.
- ¹²Don Idhe, *Technics and Praxis*, p.55.
- ¹³Ibid., p. 56.
- ¹⁴Ibid., p. 56.
- ¹⁵Dave Pullias “Where do we go from here?” *ATTE Journal* (Winter 1989) pp. 3-4.
- ¹⁶Don Idhe, *Technology and the Lifeworld*, p.140.
- ¹⁷Michael Heim, *The Metaphysics of Virtual Reality* (New York: Oxford University Press, 1993), p.13.
- ¹⁸Don Idhe, *Technics and Praxis*, p.53.
- ¹⁹As a result Kraftwerk have been extensively sampled, perhaps most prominently by Afrika Bambaataa who took parts of ‘Trans-Europe Express’ and ‘Numbers’ and combined them to produce ‘Planet Rock’ which served as a blueprint for hip hop culture. In Detroit, young black musicians such as Derrick May, Juan Atkins, Kevin Saunderson and Carl Craig all fed on Kraftwerk’s hypnotic rhythms to develop what later became known as techno. Many of the British pop groups who gained notoriety in the 1980’s, such as The Human League, OMD and Cabaret Voltaire also built on Kraftwerk’s electronic breakthroughs, taking the sequenced-synthesizer sound to wider audiences. In fact you would be hard pressed to find any musician working within the frame of electronic music who has not been directly (or indirectly) influenced by the music of Kraftwerk.
- ²⁰Don Idhe, *Technics and Praxis*, p.53.
- ²¹Kraftwerk, “We are the Robots,” from the album *The Man Machine* (Los Angeles, Capital Records, 1978).
- ²²The Vocoder (Voice Operated reCORDER) is a composite device consisting of an analyser and an artificial voice. The analyser detects energy levels of the human voice measured over the entire audio frequency spectrum via a series of narrow band filters and plays them back as an artificial or ‘robot’ voice.

- ²³Don Idhe, *Technology and the Lifeworld*, p.35.
- ²⁴Ibid., p. 35.
- ²⁵Ibid., p. 38.
- ²⁶Ibid., p. 38.
- ²⁷Don Idhe, *Technics and Praxis*, p.64.
- ²⁸Kraftwerk, "The Man Machine," from the album *The Man Machine* (Los Angeles, Capital Records, 1978).
- ²⁹Barbara Kruger is an artist who works with photographic silkscreens. She is most famous for black and white photographs with text highlighted by a red stripe. "She describes her use of text and image as an attempt to couple 'the ingratiation of wishful thinking with the criticality of knowing better. To use the device to get people to look at the picture, and then to displace the conventional meaning that that image usually carries with perhaps a number of different readings.' In other words to destroy the apparent seamlessness of the text-image union in advertising and editorial." Tony Godfrey, *Conceptual Art* (London: Phadion Press Limited, 1998) pp.336-337.
- ³⁰Jim Carlton, "Befuddled PC Users Flood Help Lines, And No Question Seems To Be Too Basic," *The Wall Street Journal*, March 1, 1994, pp. B6.
- ³¹Idhe, *Technology and the Lifeworld*, p.35.
- ³²Don Idhe, *Technics and Praxis*, p.65.
- ³³Don Idhe, *Technology and the Lifeworld*, p.38.
- ³⁴See Hans-Georg Gadamer, "Part III: The Ontological Shift of Hermeneutics Guided by Language" in *Truth and Method* Second Revised Edition, trans. Joel Weinsheimer and Donald G. Marshall (New York: Continuum, 1989), pp. 381-474.
- ³⁵Don Idhe, *Technology and the Lifeworld*, p.92.
- ³⁶Ibid., p. 38.
- ³⁷Ibid., p. 39.
- ³⁸Ibid., p. 39.
- ³⁹Maurice Merleau-Ponty, *Phenomenology of Perception*, 52-53, as quoted by Idhe in *Technology and the Lifeworld*, p.39.
- ⁴⁰Ibid., pp. 39-40.
- ⁴¹Don Idhe, *Technology and the Lifeworld*, p.40.
- ⁴²Ibid., p. 106.
- ⁴³Ibid., p. 101.
- ⁴⁴Don Idhe, *Technics and Praxis*, p.58.
- ⁴⁵Ibid., p. 39.
- ⁴⁶Peter Lunenfeld, *Snap to Grid: a User's Guide to Digital Arts, Media, and Cultures* (Cambridge, MA: MIT Press, 2000) xvi.
- ⁴⁷Don Idhe, *Technics and Praxis*, p.64.
- ⁴⁸Don Idhe, *Technology and the Lifeworld*, p.75.
- ⁴⁹Ibid., p. 80.
- ⁵⁰ "Although Levinas stands within the traditions of phenomenology and hermeneutics, [in] his distinctive work, *Totality and Infinity*...the term 'alterity' came to mean the radical difference posed to any human by another human, an *other* (and by the

ultimately other, God).” Don Idhe, *Technology and the Lifeworld*, p. 98

⁵¹Ibid., p. 108.

⁵²Peter Lunenfeld, *Snap to Grid*, xvi.

⁵³Martin Heidegger, “The Question Concerning Technology,” in *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977), p. 4.

⁵⁴Don Idhe, *Technics and Praxis*, p.61.

⁵⁵Ibid., p. 61.

⁵⁶Ibid., pp. 61-62.

⁵⁷Hubert Dreyfus, “Highway Bridges and Feasts: Heidegger and Borgmann on How to Affirm Technology.” An earlier version of this essay was delivered as the 1996 Bugbee Lecture at the University of Montana,

<<http://socrates.berkeley.edu/~frege/dreyfus/Borgman.htm>>.

⁵⁸Don Idhe, *Technology and the Lifeworld*, p.82.

⁵⁹Martin Heidegger, “the Thing,” in *Poetry, Language, Thought*, trans. Albert Hofstadter (New York: Harper and Row, 1971), p. 168.

⁶⁰Don Idhe, *Technics and Praxis*, p. 14.

⁶¹Jay David Bolter, *Writing Space: The Computer, Hypertext and the History of Writing* (Hillsdale, N.J.: Lawrence Erlbaum, 1991) p. 4.

⁶²Roland Barthes, *S/Z* (New York: Hill and Wang, 1974) p. 10.

⁶³Don Idhe, *Technology and the Lifeworld*, p. 53.

⁶⁴Ibid., p. 54.

- Amerika, Mark, and Lance Olsen. "Smells Like Avant Pop: An Introduction, Of Sorts." *In Memoriam to Postmodernism*. Ed. Mark Amerika and Lance Olsen. San Diego: State University Press, 1995.
- Barber, Katherine, ed. *The Canadian Oxford Dictionary*. Don Mills, Ontario: Oxford University Press, 1998.
- Barrett, Edward, ed. *Text, ConText, and Hypertext: Writing with and for the Computer*. Cambridge: MIT Press, 1988.
- Barthes, Roland. *S/Z*. New York: Hill and Wang, 1974.
- Birkerts, Sven. *The Gutenberg Elegies: The Fate of Reading in an Electronic Age*. Boston: Fawcett Books, 1995.
- Bolter, Jay David. *Writing Space: The Computer, Hypertext and the History of Writing*. Hillsdale, NJ: Lawrence Erlbaum, 1991.
- Blackwell, Lewis and David Carson. *The End of Print: The Graphic Design of David Carson*. San Francisco: Chronicle, 1996.
- Brody, Florian "The Medium is the Memory." Peter Lunenfeld, ed. *The Digital Dialectic: New Essays on New Media*. Cambridge, MA: MIT Press, 1999.
- Buckingham, David. "Teaching About the Media" *The Media Studies Book: A Guide for Teachers*. Ed. David Lusted. London: Routledge, 1991: 12-35.
- Bush, Vannevar. "As We May Think." *Atlantic Monthly* 176 (July 1945): 101-8.
- Bussy, Pascal. *Kraftwerk: Man, Machine and Music*. Middlesex, England: SAF Publishing Ltd, 1988.
- Carlton, Jim. "Befuddled PC Users Flood Help Lines, And No Question Seems to Be too Basic." *The Wall Street Journal*, March 1, 1994: B1, B6.
- Cirlot, J. E. *A Dictionary of Symbols 2nd edition*. London: Routledge, 1971.
- Clarke, Arthur C. *Profiles of the Future: An Inquiry into the Limits of the Possible*. New York: Harper & Row, 1958. [rev. 1973, 1984.]
- Cotton, Bob and Richard Oliver. *Understanding Hypermedia 2.000: Multimedia Origins, Internet Futures*. London: Phaidon, 1997.

- Cuban, Larry. *Teachers and Machines: The Classroom Use of Technology Since 1920*. New York: Teachers College Press, 1986.
- Davis, Eric. *Technognosis: Myth, Magic, and Mysticism in the Age of Information*. New York: Three Rivers Press, 1998.
- Debord, Guy. *The Society of the Spectacle*. Donald Nicholson-Smith, trans. New York: Zone Books, 1994. [orig. 1967.]
- Dreyfus, Hubert. "Highway Bridges and Feasts: Heidegger and Borgmann on How to Affirm Technology." <<http://socrates.berkeley.edu/~frege/dreyfus/Borgman.htm>>.
- Febvre, Lucien and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing 1450-1800*. New York: Verso, 1976.[orig. 1958]
- Feenburg, Andrew. *Questioning Technology*. New York: Routledge, 1999.
- Foster, Hal, ed. *The Anti-Aesthetic: Essays on Postmodern Culture*. Port Townsend, Wash.: Bay Press, 1983.
- Foly, Louise Munro. *Forest of Fear (Choose Your Own Adventure 54)*. Toronto: Bantam, 1986.
- Gadamer, Hans-Georg. *Truth and Method* Second Revised Edition, trans. Joel Weinsheimer and Donald G. Marshall. New York: Continuum, 1989.
- Gibson, William. *Neuromancer*. New York: Ace, 1984.
- Godfrey, Tony. *Conceptual Art*. London: Phadion, 1998.
- Hwang, Francis. "Invisible Industry." *Art Byte* (March/April, 2000): 40-41.
- Heidegger, Martin. "The Thing." *Poetry, Language, Thought*, trans. Albert Hofstadter. New York: Harper and Row, 1971.
- Heidegger, Martin. "The Question Concerning Technology." *The Question Concerning Technology and Other Essays*, trans. William Lovitt. New York: Harper & Row, 1977.
- Heim, Michael. *The Metaphysics of Virtual Reality*. New York: Oxford University Press, 1993.
- Idhe, Don. *Technics and Praxis*. Dordrecht, Holland: D. Reidel Publishing Company, 1979.

- Idhe, Don. *Technology and the Lifeworld*. Bloomington and Indianapolis: Indiana University Press, 1991.
- Jackson, Shelley. *Patchwork Girl* (Storyspace). Cambridge, MA: Eastgate Systems, 1995.
- Joyce, Michael. *Afternoon* (Storyspace). Cambridge, MA: Eastgate Systems, 1990.
- Lanham, Richard. *The Electronic Word: Democracy, Technology, and the Arts*. Chicago: University of Chicago Press, 1994.
- Landow, George P. *Hypertext 2.0: The Convergence of Contemporary Critical Theory and Technology*. Baltimore: Johns Hopkins University Press, 1997.
- Leibold, Jay. *Grand Canyon Odyssey (Choose Your Own Adventure 43)* Toronto: Bantam, 1985.
- Logan, Robert. *The Fifth Language: Learning a Living in the Computer Age*. Toronto: Stoddart, 1995.
- Lunenfeld, Peter. *Snap to Grid: a User's Guide to Digital arts, Media, and Culture*. Cambridge, MA: MIT Press, 2000.
- Lyotard, Jean-François. *The Postmodern Condition*. Minneapolis: University of Minnesota Press, 1984.
- McLuhan, Marshall. *The Gutenberg Galaxy*. Toronto: University of Toronto Press, 1962.
- McLuhan, Marshall and Quentin Fiore. *The Medium is the Massage: An Inventory of Effects*. New York: Bantam, 1967.
- Merleau-Ponty, Maurice. *Phenomenology of Perception*, trans. Colin Smith. New York: The Humanities Press, 1962.
- Montgomery, R. A. *The Abominable Snowman (Choose Your Own Adventure 13)*. New York: Bantam, 1982.
- Negroponte, Nicholas. *Being Digital*. New York: Knopf, 1995.
- Oppenheimer, Todd. "The Computer Delusion," *The Atlantic Monthly* (July 1997).
<www.theatlantic.com/issues/97jul/computer.htm> .
- Postman, Neil. *The Disappearance of Childhood*. London: W.H. Allen, 1983.

- Postman, Neil. *Technopoly: The Surrender of Culture to Technology*. New York: Vintage, 1993.
- Pullias, Dave. "Where do we go from here?" *ATTE Journal* (Winter 1989): 3-4.
- Rushkoff, Douglas. *Playing the Future*. New York: Harper Collins, 1996.
- Rutsky, R.L. *High Techne: Art and Technology from the Machine Aesthetic to the Posthuman*. Minneapolis: University of Minnesota Press, 1999.
- Sterne, Laurence. *The Life and Opinions of Tristram Shandy, Gentleman* (Hertfordshire: Woodsworth Editions Limited, 1996. [orig. 1760-7.]
- Taylor, Mark C. and Esa Saarinen, *Imagologies: Media Philosophy*. New York: Routledge, 1994.
- Ulmer, Gregory. *Applied Grammatology: Post(e)-Pedagogy from Derrida to Joseph Beuys*. Baltimore: Johns Hopkins University Press, 1995.
- Walter, John L. "On Phonography: How Recording Techniques Change Music and Musicians." *Times Literary Supplement* April 26, 1996: 10.
- Wittgenstein, Ludwig. *Philosophical Investigations*. 3rd ed Trans. G. E. M. Anscombe. New York: Macmillan, 1968.

UNIVERSITY OF CALGARY

"I Seem to be a Hypertext."

by

Gregory K. Seale

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
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CALGARY, ALBERTA

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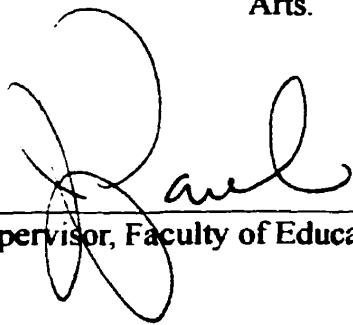
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The Method of the twentieth century is to use not single but multiple models for experimental exploration—the technique of the suspended judgement.

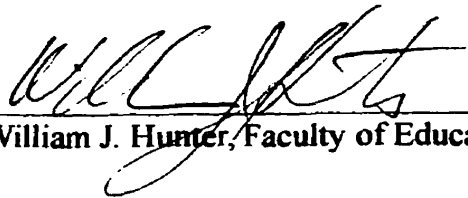
-William Ivins, Jr.

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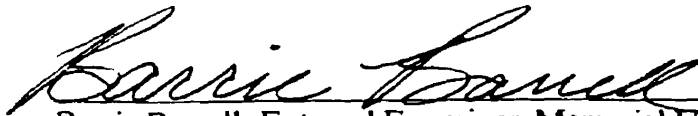
The undersigned certify that they have read, and recommend to the Faculty of
Graduate Studies for acceptance, a thesis entitled "I Seem to be a Hypertext." submitted
by Gregory K. Seale in partial fulfillment of the requirements for the degree of Master of
Arts.



Jim Paul, Supervisor, Faculty of Education



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November 28, 2000
Date

Abstract

We live in a world where there are many understandings of technology. I question my perception of technology—is it something I can control? Is this text?

This thesis explores the textualizing of hypertext. One part focuses on a number of phenomenological issues by reviewing the praxis philosophy of Don Ihde, who observes the *taken-for-grantedness* and *forgetfulness* surrounding technology.

Another part situates hypertext within postmodern theory and linear discourse...What do we take for granted as ‘givens’ in conversation?/ Is technology treated as myth?/ What is hypertext?/ “manhandling [my] text [and] interrupting it”/ intent vs. use/ Is the computer the tool destined for societal emancipation?/ a commodity?

I consider this thesis an embodiment of Roland Barthes *writery* text. Therefore, I have purposely left (some) things open for the reader to deduce. I endeavour to challenge the notion that the author has control over the absolute meaning of the text.

Acknowledgements

I wish, first and foremost, to acknowledge Jim Paul for his continued support and encouragement, but by doing so, I must also thank Susan Moore (a fellow student) for approaching me after my first GDER 600 class to ask why I hadn't heard of Jim Paul; why I wasn't working with Jim Paul; and why I wasn't pursuing phenomenology, hermeneutics and a bunch of other things I had never heard of. In all honesty, I thought who is this hyperactive person and why won't she leave me alone? It was Saturday morning; I just wanted coffee and to be spoken to in soft, slow sentences.

I am indebted to Dagmara Lewkowicz for editing the many drafts of this text and gracefully accommodating my one-day turnarounds. Similarly, I would like to express my gratitude to my family for the rent-free living conditions, free food, laundry service, privacy, and most of all, their ability to help me find things that I have misplaced (on one occasion, the text itself). I would like to thank Bill Hunter for being the first professor to have ever thanked me for trusting him enough to hand in an assignment that was "a little different."

I also need to express my thanks to professors from Ryerson Polytechnic University: Ed Slopek-for always being able to direct me to the exact resource I needed; and Donald Gillies-for his assistance, support, feedback and guidance.

This also goes out to everybody who asked, "What is your thesis about?", "How is your writing coming along?", "Can I read it when it's finished?" and "Can you get a degree for that?" It is also for the person who said "You should finish your thesis soon because we are getting sick of hearing about it."

Finally, I would like to acknowledge the influence of author Philip K. Dick who inspired me to philosophize about technology without having surfaced in the text until now.

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My friends and I generally meet on Thursday afternoons for coffee. Although our conversations are verbal, face-to-face interactions, I have come to see them as (Does hypertext strive to satisfy the postmodern condition by challenging grand narratives?) hypertextual. It is not that the words we use adequately describe the process or product of hypertext. Although, we may use terms such as form, content, font, image, size, shape, space, modern, or postmodern, we are not defined by, or limited to these labels. It is essentially how we use language and the layering of our ideas that is akin to hypertext. We play with words and develop meaning(s) among ourselves.

Our conversations often repeat themselves, returning to the beginning and splintering off in various directions. I wish I could hold it all in my head at once, but as an alternative, I scribble this question down on a napkin :

What do we take for granted as 'givens' in these conversations?

After much thought I conclude that faith in progress is a given. As my friends and I are talking, I realize that all of us have emphatically embraced the computer. Why even consider questioning it? The omnipresence of the computer is leading it to be hailed as the archetype for the future—with the belief that the future is leading us somewhere. Technological determinism implies that *our* technology is universal and that newer technologies will sequentially replace older ones and uphold the myth that *newer = better*. Computerization is inevitable and we can only choose to accept or reject the institutions

After much thought I conclude that the way we have come to communicate is a given. I can make free associations in conversation with my friends but if I try to do the same in writing, it becomes seemingly more difficult. Hence the adage, *talk is cheap*. Books are privileged in Western culture and there are certain conventions that come with this position, mainly linearity. To challenge the book and the very idea of what constitutes a 'text' is to challenge culture itself. I find the paradigm of writing difficult and stifling, but I cannot help writing myself into a predicament. How strong a case can I make about the difficulty of writing while using

that come along with it. Despite this I am optimistic about hypertext. Only, I can't fathom why.

I am sceptical of the way the West is obsessed with technology: there has to be some sort of backlash because technology cannot possibly fulfill all it promises to—yet paradoxically I am interested and even excited by new-better possibilities. I live amidst this confusion, trying to separate the 'hype' from the hypertext (and I probably perpetuate it further having written this). Perhaps it is best to use the analogy of the moth to the flame to illustrate my point. I realize I can be burned by the flame, in fact, I half-expect it, but I am inextricably drawn to it.

Technology is (treated as) a myth

According to Greek mythology, the gift of fire was brought to the earth by Prometheus ('forethought') to aid his bother Epimetheus ('afterthought'), who was given the task of creating living creatures and failed miserably

the written word?

The last thing I want to do is confuse readers with **trickery**, but I also don't want to write a poor argument, which might only prove *I have difficulty expressing my thoughts through writing*. I endeavour to write a good argument, which proves *I have difficulty expressing my thoughts through writing*.

Hypertext theorists Jay David Bolter, George Landow and Richard Lanham call attention to the fact that writing is also a technology. To read and write (and speak, for that matter) requires skills which must be learned. Yet most take these skills for granted, as Landow remarks:

Technology in the lexicon of many humanists, generally means "only that technology of which I am frightened." In fact, I have heard humanists use the word technology to mean "some intrusive, alien force like computing," as if pencils, paper, typewriters, and printing presses were in some way natural.¹

The written word permeates through Western culture and, according to Bolter, it "enhances the human capacity for social organization—by providing a culture with

because he wasted all the useful traits such as cunning, courage and fur on animals. To help humans (and his brother) survive, Prometheus stole fire from the sun and presented it to our human ancestors. He is punished by Zeus for his **trickery** and is chained to a rock until he is rescued by Hercules¹

Fire is said to spark the 'techocultural imagination' and therefore technology can be thought of as a Promethean gift—holding both the power to save society and destroy it. As media theorist Eric Davis notes:

Freethinkers from the Enlightenment on have embraced the Promethean flame as an antiauthoritarian symbol of human self-determination, while neo-Luddites demonize it as a corrosive and destructive force that may well reduce the earth to a crisp.⁵

As Arthur C. Clarke noted,

"Any sufficiently advanced technology is indistinguishable from magic."
Technology is magical. The stories and myths which have immortalized *techne* in

Western culture (in sci-fi novels, comic books, video games, television programs, and feature films) also distance people from experiencing technology, by implying technology is not real but fantasy (or just the opposite—technology draws one in so completely the experience is hyperreal and appears more real than reality).

The phenomenon of techno-animism makes it hard for me to distance myself from these fables to gain the perspective I require to be critical. Some technophiles are far too

fixed laws, with a history, and with a literary tradition."² To rethink the book is not to replace something natural with something technological—the book is already technological.

Of all the mythological characters, perhaps Hermes should be called god of technology. Besides mastering the technology of language, he is also an inventor (in one fable, he turns a turtle's shell into a lyre³), but more famously he is equated with **trickery**. To some, these are the same thing, as Eric Davis states:

Hermes embodies the mythos of the information age not just because he is the lord of communication, but because he is also the mastermind of *techne*, the Greek word that means the art of craft...in Homer's tongue, the word for "trickiness" is identical to the one for "technical skill."⁶

boisterous for my liking. To continually praise technology for what it might do, what it could do, takes away from its ability of doing something now. Perhaps the current myth that 'computers are a portal to another world' is so prominent because years of *Star Trek* made it so. It is easy to view technology as an escape or an illusion because that is how the West has promoted it. I can dismiss this belief as nothing more than a marketing ploy or a Hollywood script, but my understanding of technology is muddled. Those who know I am interested in technology and education try to ascertain my stance. However, I am not on either side of the nature/culture divide. I believe technology evolves along with human nature, yet I am also enchanted by the mythologies. I see technology as both *Frankenstein* and *Star Trek*, and it is these shapeshifter possibilities that simultaneously fascinate and repel me. Whenever technology poses a threat to the way I do things, it is Mary Shelly's monster. But, when it reduces complexity and makes life easier, it is as fascinating as the Holodeck⁸ in *Star Trek: The Next Generation*. I believe in both of these visions and I flip-flop between them as it suits me.

Perhaps that is why I am having such difficulty writing about hypertext (and why I doubt I will ever be able to finish). It is almost a cliché to say the information age demands a new paradigm for communication and to spite this, I have heard the opposite, that there is no paradigm shift at all—that everything new culminates in what is well-established. I wonder: Can it be both? Certainly hypertext, by way of the Internet, is a new paradigm for communication, but as Marshall McLuhan said, "We look at the **Where do I begin?** present through a rearview mirror."⁹ Thus, hypertext can be said to be conversational, yet I am so mixed-up I am starting to see conversations as hypertextual.

Our existence in the industrial developed parts of the world is “technologically textured.” Ideas are difficult to capture with language, but words are not so much textured.” Therefore my goal must not be to reinforce, but to reveal how the casualness of our captured and defined as they are chosen and provided. As post-structuralist experiences with technology is affecting us—the difficulty is determining to what extent philosopher, Giovanna Borradori remarks, “language cannot be used but only There may be future generations who differ from those of us who have been raised on print excavated.”¹⁰ In 1960, Ted Nelson developed the ideas that formed the basis literacy. Although, computer literacy can neither precede nor replace conventional literacy of his Xanadu project (a hypothetical database linking the sum of all published human knowledge) and by 1965, he had coined the words ‘hypertext’ there are established media, such as film, television and video, which have caused people and ‘hypermedia.’¹¹ In 1984, William Gibson created the term “cyberspace” to rethink their views of the world, and although hypertext clearly links to these earlier in his novel *Neuromancer*.¹² Even though Nelson’s work is not as blatantly media, I look toward the future and where it is taking us (is it uncharted territory?) when far-fetched as Gibson’s, both texts, are works of fantasy, of fiction, but now I I ask “Does hypertext strive to satisfy the postmodern¹³ condition by challenging grand have to approach these terms as if they are tangible objects (although I wonder narratives¹⁴?” Hypertext is significant right now, because it continues to exploit the rapid if I am any closer to touching these things than they were). It doesn’t matter development of computer and telecommunication technologies causing me to think about whether I embrace it or condemn it, I am equally enslaved by my misunderstanding of what technology is. I see technology as a challenge, not as a distinct communicative abilities and different expressive forms. The same technology used to experience hypertext, can also be used to create it. Therefore it is about a shift of power fate one must choose for or against. The question is one of being, not having between subject/object, author/reader, teacher/student and/or producer/consumer. Although ing. Therefore the goal for embracing technology should be to define life—the concept for expressing ideas using multiple media is one that has hardly begun to be style, rather than accessorize it. Yet, technology has become more about tackled, with producers becoming consumers and vice versa, it is important to know how, obtaining newer-better goods and less about using them. or to at least try, to involve multilinearity in the production/consumption of meaning.

Most people, when asked to comment on technology, will probably make reference to computerization or some form of mechanization. However, I view technology as more pervasive than machinery alone. I see it as encompassing not only the hardware (in a sense much larger than computers), but also the software, operating instructions, rules, procedures, processes, or any other preprogrammed response to circumstances (the phenomenological experiences associated with imagined actual experiences as well as the hermeneutic response of acceptance/suspicion). However, the connection between computers and hypertext is undeniable. The hypertext/hypermedia revolution as I know it has come to exist because of the personal computer and programs such as Apple's *Hypercard*, Tim Berners-Lee's "WWW Program" and Marc Andreessen's graphical World Wide Web browser, *Mosaic*. Although I can now identify that issues of multilinearity and a decentred text have been significant in contemporary Western thought for some time,¹⁵ the current debate about a shift away from linearity is taking place over, through, among, in, on, and because of, the Internet.

(Do I have to state somewhere that I have intentionally placed 'blank' space throughout this text to encourage readers to write in their comments?)

I return from the washroom to rejoin our group's coffee conversation. What are they talking about now? Those Choose-Your-Own-Adventure novels we read as kids? It took a while to get here, how ironic! I thought of our conversation as hypertextual and now, although they are reminiscing about the past, they are talking about hypertext (in the present). These books simplify the notion of hypertext by breaking it down to just text and choices.¹⁶

What is hypertext?

The term 'hypertext' is vague. There are hypertextual systems designed to deliver technical information. There are hypertextual spaces designed for creative fiction, (like those at Eastgate¹⁷ where you can download Michael Joyce or Shelly Jackson 'hyperfictions' for \$19.95 US) and others based on instructional or entertainment space (anything and everything from "www.jennicam.com" to "www.jodi.org"). There are digital hypertexts

(the so-called ‘true’ hypertexts which are produced, edited, and distributed in digital form); proto-hypertexts (those available on paper, such as Laurence Sterne’s *The Life and Opinions of Tristram Shandy, Gentleman* [1760-7] or James Joyce’s *Finnegan’s Wake* [1939]) and translations of hypertexts from print to screen, screen to print, and a million varieties in between.

Perhaps, hypertext can be defined by referencing theorists who have dedicated entire books to hypertext nomenclature such as George P. Landow (*Hypertext 2.0*, 1997), Richard Lanham (*The Electronic Word*, 1993) and Jay David Bolter (*Writing Space*, 1991). Perhaps I could return to the source, to Theodor H. Nelson, and his definition “[which] refers ... to a form of electronic text, a radically new information technology, and a mode of publication,”¹⁸ or possibly Nelson’s teacher, Vannevar Bush (commonly cited as the founder of hypertext) and his influential essay “As We May Think” published in *Atlantic Monthly*, July 1945. Any one of these would help me to better describe hypertext. But I had heard of the term and had even used it before I ever encountered any of these authors.

Hence I should be able to explain hypertext in terms of my experience with it. Do I use it habitually? Granted, I begin most of my days by reading/writing e-mails (which are sometimes linked to graphics, video clips and music files) and then I usually read portions of my favourite daily webzines like www.feed.com or www.salon.com...and there are always my coffee shop conversations. Yet, no matter how I try to summarize the phrase—it falls short. I can come up with words like *cross-referencing*, *linking*, *connections*, *relations* and *non-linear*, but as I jumble them around I don’t find anything that satisfies me.

A SEEMINGLY NON-LINEAR CROSS-REFERENCING SYSTEM WHERE RE-

LATED SUBJECTS ARE CONNECTED (CONCEPTUALIZED/REALIZED) THROUGH ELECTRONIC LINKS.

When conveying the meaning of something, choices are made and limits are set. Specific words are chosen over others:

A LINKING SYSTEM BASED ON CONNECTIONS WHICH CAN BE CROSS-REFERENCED NON-LIN- EARLY ACCORDING TO RELA- TIONS.

you have to connect the dots and see what big picture comes into play.

Admitting that I do not know the direction in which to go, permits me to think about the problem of developing what I ultimately want, even when I don't know what that is.

A (POST-)STRUCTURE OF RE- LATIONS MEDIATING READ- ERS TO CROSS-REFERENCE CONNECTIONS THROUGH NON-LINEAR LINKS.

When I first
glanced at
Imagologies
(1994) by
Mark C.
Taylor and Esa
Saarinen, I
found it diffi-
cult to read,
not because
there was no
narrative or
logical thread
to tie the
sections
together, but
because I
thought they
were being *too*

C:\> _“In the worlds of hypertexts, art forms are not autonomous but overlap without end. Word, image and sound intersect in the bowels of the machine and are projected in such a way that one must read, look and hear simultaneously.”¹⁹

cute with their
text. This
angered me
because I
couldn't take
them seri-
ously, at least
not at first.
Although I
was accus-
tomed to
thinking in
fragments and

“Hypertexts free the play of signs that has always constituted writing”

.....This play is both trivial and deadly serious

.....Lighten up so you get serious--;

.....Get serious so you can lighten up.”²⁰.....

We sip coffee and discuss the latest innovations at our favourite on-line design companies (this week, as so often the case, it is Brooklyn-based www.volumeone.com). We marvel at the rapid evolution of web technology. Yet we do not all see hypertext the same way. Are we all talking about the same entity? This thing, this structure, is it an arena for

teaching
children about
the signifi-
cance of
soundbites (or
lack thereof).
I wasn't able

discussion or an escape from one?

Conversations about the technical process of hypertext are too incidental for me. Although I am fascinated by Javascript or Flash and listen intently as my friends describe how they are using these latest innovations to create livelihoods for themselves, I bring literary criticism, philosophy and aesthetics into the discussion. In minutes, our conversation has circled hypertext. Although, nobody has concisely defined 'hypertext,' as a group we have demonstrated it. There is a rhythm to the various splinters of conversation, to the imagining of our ideas. The discussion connects us through our experiences with computers in real time to real time coffee conversations.

Rather than coming up with a working definition for 'hypertext,' I begin to question how difficult it may be to find a group of people who don't know what is meant by linking and hypertext. The World Wide Web has pervaded Western culture so expansively it more or less defines the terms.

their students to new ways of conceptualizing images, text and the entire model of modern communication. Although, I am not quite sure if they succeed, they do illustrate how difficult it is to do something unconventional. The framework of the book has an energy, in that it is spontaneous. I am sure many people would have trouble even calling it a "book". Different groups or individuals could debate this ad nauseam, but to what end? It is clear however, that the authors feel this debate (or any debate for that matter) is more important than the outcome. Statements are just thrown out for discussion... But that is why I find them refreshing.

I am so influenced by *Imagologies* that I am paying homage to the authors by,

to recognize
this book as
the anti-
scholarly text I
so desired—
but it is.
Imagologies
represents an
experiment in
joint teaching
by two faculty
members over
a great dis-
tance (Finland
to America).

They expose

“manhandling [my] text [and] interrupting it” with my favourite segments from their book.

Roland Barthes' S/Z

**“Technology never catches up with itself.
[The word “hypertext” is not in my spell-checker.]”²¹**

Roland Barthes' analysis of the *writerly* vs. the *readerly* is useful for explaining a new type of reading experience and thus, illustrates the important shift hypertext is creating for the linear West (and for information processing as a whole). Whereas Barthes only refers to the use of hypertext in general, the majority of the hypertext on the World Wide Web could be characterized as a model of his 'writerly' text.

In his self-characterized “essay,” *S/Z* (1974), Barthes demonstrates that there is no author who provides *absolute meaning* to the text—it is the reader who provides his/her own meaning to it. Barthes' writing circles around *Sarrasine*, a short story by Balzac and plays with its interpretation by “manhandling the text, interrupting it.”²² as he *re-reads* the story using different treatments.

A reader of a *writerly* text can deduce meanings, that the original author of the text has no control over. A reader can enter a text through any signifier and shift towards any other signifier as he/she pleases. This “writerly text,” he says, “is ourselves writing.” The text produces the reader and the reader becomes the space.

The *readerly* or *classic text*, is, on the other hand, “what can be read, but not written,” (obviously represented by Balzac). A reader of a classic text has “no more than the poor freedom either to accept or reject the text,”²³ and is required to follow an established sequence, facing signifiers mostly as the author has intended. Nevertheless, at least some portion of the readerly text has the writerly text within it, because the reader brings a duplicity (their own connotations) to the reading.

Thus **connotation** becomes a central concern. Barthes writes that connotation “is a determination, a relation, an anaphora, a feature which has the power to relate itself to anterior, ulterior, or exterior mentions, to other sides of the text (or of another text).” He adds that connotation is located in *sequential space* (meaning is generated by the proximity of sentences and “proliferates by layering”) and *agglomerative space* (certain parts of the text will relate to other meanings outside of the text). ‘The closure system of the West’ has tried to eliminate the ambiguity which surrounds connotation in an attempt to force all discourse into precise denotative habits. “Connotation,” Barthes writes, “must therefore be rescued from [this] double contestation and kept as the namable, computable trace of a certain plural of the text.”²⁴

There is no doubt Barthes’ writing has influenced hypertext theory. In *Hypertext 2.0: The Convergence of Contemporary Critical Theory* (1997), George Landow writes “Roland Barthes describes an ideal textuality that precisely matches that which in computing has come to be called hypertext.”²⁵ Although Barthes mentions ‘computable trace’ in the above quote, in *Writing Space: The Computer, Hypertext, and the History of Writing* (1991), Jay David Bolter proclaims that Barthes “did not know about computers.”²⁶

However, I am not sure I agree completely with Bolter. For example, in *lexica* (122), Barthes breaks down a line from *Sarrasine* by describing it as a “byte (in computer terminology), a section of program fed into the machine, a sequence equivalent, as a whole...”²⁷ Clearly he is using *Sarrasine* as a type of program (arguably a metaphor for the computer), yet at the same time it is the product (or in the case of the computer, the output) of such a program. This raises the issue of how text is defined by print and according to Bolter:

Barthes’ writing is decadent in the sense that it is a decline or falling away from an ideal form of writing for the age of print. The great monographs of the 19th-century

essayists and historians...showed what printing could achieve; by comparison, Barthes is intentionally playful and perverse. These are traits he shares with such writers as Kierkegaard, Nietzsche, and Wittgenstein, each of whom in his own way attacked the development of systematic, linear argument.²⁸

Bolter is correct in his description of Barthes' writing. It is very much a reaction against the linear archetype. Nevertheless, the narrative structure that Bolter links to the height of the 19th century is still prevalent in today's society. Linearity is what is being subverted by new, hyperlinked, multiple narratives. Although Barthes does not approach computers from a technical standpoint, his writing must be informed by the computer...or perhaps information technology is informed by it. *S/Z* is full of phrases like *link*, *network*, *web* and *path*.²⁹ If Barthes truly "did not know about computers" then he has managed to articulate the *writerly*, because I (the reader) see his text as a prototype for hypertext and a product of it. Therefore, if Barthes is not writing about the computer, then I am (and a host of others—notably George Landow) producing his text in my own terms, forging meanings from what I have already read and experienced. This text does little for my understanding of Balzac (I have never read *Sarrasine* out of this context) but it has expanded my understanding about hypertext.

Yet, his knowledge of computers, or lack thereof, does not matter as much as his description of the reader. If the reader is "no longer a consumer, but a producer of the text"³⁰ we have reached a turning point. If the writerly text exists within the confines of information (depending on the connotations different readers bring to it) perhaps, it suits electronic text better, yet *S/Z* exists in print. Is Barthes' writerly text interchangeable with hypertext? The ideal textuality he seeks is one where:

networks are many and interact, without any one of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one; the codes it mobilizes extend as far as the eye can reach, they are indeterminable (meaning here is never subject to a principle of determination, unless by throwing dice); the systems of meaning can take over this absolutely plural

text, but their number is never closed, based as it is on the infinity of language.³¹

S/Z, not only suggests but demonstrates, that text is a “multidimensional space.” Does Barthes choice of medium affect his meaning? Does mine?

“ If an electronic text can be published in printed form, is it really electronic? The alternative would be to give up print and publish an electronic text. But the technology necessary for accessing electronic texts is still rather limited. Furthermore, most of the people we want to reach remain committed to print. There is no sense preaching to the converted. Our dilemma is that we are living at the moment of transition from print to electronic culture. It is too late for printed books and too early for electronic texts. Along this boundary we must write our work.”³²

The distinction between denotation and **connotation** is taken for granted when a society's intent for a technology is not differentiated from its use. Philosopher Andrew Feenberg cites 15th century China, as an example. The Chinese reportedly built the largest fleet of grand ships the world had ever seen, but couldn't agree on a mission and dismantled the entire fleet which allowed Asia to be subsequently acquired by the Europeans and not the other way around.³³

“Translucence
has become a
signifier of the
ultramodern.”³⁴

comments

Francis Hwang

wryly, in an

intent vs. use

Feenberg also notes that when the first personal computers were

article titled
 “Invisible Indus-
 try” in a recent
 issue of *Art*
Byte. Every-
 where I turn I
 find that form is
 trouncing func-
 tion and no-
 where is this
 more evident
 than in the
 marketing of the
 Apple iMac.

The computer’s
 packaging is
 peddled fore-
 most as function
 and in its latest
 television advert
 they ask “Do
 you buy your
 iMac to fit your
 decor or do you
 match your
 decor to fit your

marketed, they promised limitless possibilities, although they came
 with no applications. This leads me to question what good *a com-
 puter in every classroom* does for a school if only some of the
 classrooms have teachers with ideas on how to utilize them ?

Although I could argue somewhat credulously that
 computer technology is not autonomous, I believe the deployment
 of computers is, because most parents argue that their children
 require practical experience with computers and, therefore, they
 are needed in schools. For them, computers represent a future—
 the promised, possible future. Technology is a process or a com-
 ing-to-presence (Ge-Stell) and is not realized by simply obtaining
 or having it as a potential tool; it is about its use.

Is the computer a tool destined for societal emancipation?

It is hard not to preface this question with some reference to
 Martin Heidegger and “The Question Concerning Technology” or to
 his “Discourse on Thinking.” According to Heidegger, technology is
 what prevents people from appreciating being and when we view the
 world technologically we are discarding ourselves, as a tool for our
 own use. If we are able to “deny [technical devices] the right to domi-
 nate us,” he assures, “Our relation to technology will become wonder-
 fully simple and relaxed.”³⁵

Heidegger is concerned with helping society realize a free rela-
 tionship to technology. Although he wrote well before the time of the
 personal computer, there is a need to pursue his arguments as they

iMac?" A computer is now about what it looks like, since Steve Jobs and his company have ingeniously fetishized³⁶ their computers to be quieter (it uses no cooling fan and is therefore two to eight times less noisy)³⁷ and better looking than the obtrusive, grey machines of the past. The iMac features a see-through plastic casing, available in a choice of colours, allowing a user to see the inner workings and presumably,

provide a rebuttal for the 'digerati' who are propagating the instrumental rationality of technology. There are many selling the service of something that is all things to all people. Can they deliver?

The danger within aiming to create a global consumer village is that we begin to be ordered into the very 'standing-reserve' of technology. Users embody objects lying in wait: to connect, to buy, to use and to consume. I would like to pretend the Internet's success can be attributed to its ability to embody information transparently to the user. Hence clicking a mouse takes on the unconscious act of turning a page in a print bound-book (yet the click is considered 'active' and page-turning is considered 'passive'). However, for many, the success of the Internet is realized when consumers are able to embody it as an extension of their credit cards.

Technology is a commodity (and is therefore about power)

The digerati are the computer hegemony; the digital elite who have established themselves as the ones whose opinions about technology matter the most (Bill Gates for example). Digerati is derived from 'literati', which the Canadian Oxford Dictionary defines as "educated and intelligent people who produce or are well-versed in literature,"³⁸ and (to some degree) 'glitterati', defined by the above as, "the fashionable, wealthy set of literary or show-business people."³⁹

the performance of their computer—which is humorous because there are so many aspects of computer operations which are invisible. Can cyberspace or wireless technology ever be seen? Or more importantly, with this window to the computer's soul, does the iMac bestow more knowledge upon a user about how it works?

“To resist electronic technology is as futile as trying to turn back the tides. It has already swept over us in ways we have yet to realize. It is not a question of whether to accept or reject this new world but of who is going to use it and how. To resist the possibilities opened by the mediatrix is to leave this extraordinary technology in the hands of others.”⁴⁰

The contrast between *what is* and *what might be* is a political issue and technolization depends on business culture to assign functions to its technologies, like *a computer in every classroom* or the potential of the Internet being fulfilled by commerce. These societal impulses affect the very definition of these functions. Therefore, a problem or concern over the widespread institutionalization of technology should be about issues of control. The emergence of large-scale high-tech corporations is enhancing the commodification of the computer, the Internet and all the institutions that come along with them. Although these megacompanies form a patchwork of systems emphasizing communication, this kind of technological development still leaves human beings to represent the unrealized potential of their technologies.

These large high-tech companies vie amongst one another to donate technology to schools because they are eager to get their products into the hands/heads of children. A school's endorsement is a valuable accolade which can translate into sales (Parents often want to purchase the exact machines their children are using at school for use at home). I have had students write down model numbers and specifications from the machines in the computer lab because their parents

Probably not. wanted to know what kind of equipment they were using in class. It
 Again this is never occurred to me that their parents wanted to buy the same comput-
 just another ers we use, until a parent stopped me after class to ask where she could
 ploy to sell the purchase a video camera “just like the one we use in class.” I told her
 public on the our cameras were nine years old and that I was having difficulty replac-
 magical pow- ing the parts. I felt uncomfortable in the position of sales representative
 ers of comput- and directed her to a store I felt could offer her the best selection and a
 ers. Apple fair price. However, she wanted what we were using and didn’t under-
 cannot promise stand how buying a ‘different’ camera could benefit her son. I had been
 to show what teaching her son for two weeks and it was only a ten week course. I
 cannot possi- explained to her, that I was teaching “Introduction to Video”, not a class
 bly be seen, as specifically about this particular video camera.

Hwang pro- These large high-tech mega-companies exert power over the
 fesses, “Argu- schools who rely on them to donate technology (or at least lower costs
 ably, technol- under a special education incentives) by turning these schools and their
 ogy is ap- teachers into (reluctant) promoters of their products.

proaching a

future where it “If the global classroom simply replicates the
 is everywhere structures of power that have made it possible
 and nowhere at and provides no critique of contemporary
 once.”⁴² socio-political configurations, it is a failure.”⁴¹

The premise of Jean-François Lyotard’s *The Postmodern Condition* (1984) is: ‘that the status of knowledge is altered as societies enter what is known as the postindustrial age and cultures enter what is known as the postmodern age.’⁴³ Access to information is an important political and social issue particularly since the production of knowledge is

creasingly translated into quantities of information. Providing public **access** to information and constructing new ways for individuals to participate in the making and translation of information-holding databases is integral for establishing a truly globalized community. The World Wide Web demonstrates both a struggle over access, as well as the difficulty of establishing a genuinely open information system.

Three years ago, a parent approached me at an (AML) Association for Media Literacy meeting to ask if I could volunteer my time to teach with computers at her son's school. The school had a computer lab, but it was located in the library and consequently students used these computers almost exclusively for research. Her son was interested in graphics. However, the library was closed during lunch and he took a bus home immediately after school, so his only opportunity to use a computer at school (outside of the context of a research tool) was before classes, early in the morning. She wanted me to run graphics workshops over the lunch period for interested students. (I admit this is an extreme case and times have changed — it was three years ago. However, I still question how this school was utilizing its computers. Access to information is important, but so is access to all the other possibilities of the computer.)

“A revolution in the making: On the net, authors become propertyless.”⁴⁴

Lyotard considers that ‘the miniaturisation and commercialization of machines is already changing the way in which learning is acquired, classified, made available, and exploited.’⁴⁵ Most of the knowledge in computerized societies is becoming ‘exteriorized’ and the Internet is widening the gaps between the ‘haves’ and the ‘have nots.’ What concerns Lyotard is how these new channels of knowledge are experienced. Computer technologies are swallowing up English-speaking countries and information is being marketed as something tangible. For Lyotard, this commodification of knowledge questions its legitimacy:

Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production: in both cases, the goal is exchange. Knowledge ceases to be an end in itself, it loses its “use-value.”

He adds:

Knowledge in the form of an informational commodity indispensable to productive power is already, and will continue to be, a major—perhaps the major—stake in the worldwide competition for power. It is conceivable that the nation-states will one day fight for control of information, just as they battled in the past for control over territory, and afterwards for control of access to and exploitation of raw materials and cheap labour.⁴⁶

Knowledge is about power and the means for acquiring knowledge is imposed on Western culture through our choice in methods in communication, and as Landow points out:

Since hypertext promises to make materials living within a hypertext environment much easier to obtain, it simultaneously threatens to make materials not present seem even more distant and more invisible than absent documents are in the world of print.⁴⁷

Therefore, Lyotard foresees a change in the entire structure of organized learning and posits: “The notion that learning falls within the purview of the State, as the mind or brain of society” will concede to the view that “society exists and progresses only if the messages circulating within it are rich in information and easy to decode.”⁴⁸ What happens when what has been written in the old can no longer be read in the new? That question is difficult to answer since, as Lyotard maintains, knowledge and power are:

...two sides of the same question: who decides what knowledge is, and who knows what needs to be decided. In the computer age, the question of knowledge is now more than ever a question of government.⁴⁹

Furthermore, Lyotard foresees the function of school changing:

It is not hard to visualize learning circulating along the same lines as money, instead of for its “educational” value or political (administrative, diplomatic, military) importance; the pertinent distinction would no longer be between knowledge and ignorance, but rather, as is the case with money, between “payment knowledge” and “investment knowledge”—in other words, between units of knowledge exchanged in a daily maintenance framework (the reconstitution of the work force, “survival”) versus funds of knowledge dedicated to optimizing the performance of a project.⁵⁰

Lyotard employs ‘Language Games’⁵¹ to argue that in the West, narrative knowledge seemingly has been subjugated by scientific knowledge. The latter is ‘governed by

the demand for legitimation' and, as the West continues to demonstrate, it cannot accept anything that fails to conform to the rules (the requirement for proof) of its own language game.⁵² Narratives, by contrast, are legitimated by the simple fact that they 'do what they do.'⁵³ Although science likes to pretend it is about truth and narrative is just a story—science is, at its core, one more story and the more science denies this the more it confirms its existence as a story.

Postmodernism challenges such truth-story dualisms and hypertext plays a fundamental role in the breaking up of some of the most pervasive 'Grand Narratives.' As the power to make (or not make) decisions is increasingly determined by questions of access to (mis)information, anyone who embraces hypertext, will, as Landow contends, "already have rejected the solace and reassurance of linear narrative or will soon find their attachment to it loosening."⁵⁴ Therefore, it is necessary to look further into the relationship between humans and computers and attempt to understand the effects of digitization as hypertext offers some insight into the complex relationship between the postmodern and the modern—where the new is (at times) presented as a break from its predecessor and (at others) as an exaggerated extension of it.

"In the age of the fragmentary, with its exponentially increasing administrative and technical structures, the synthetic function of philosophy must loom large. This is not a call for totalizing discourse of the kind criticized by leading theorists of the postmodern, but is an appeal to undertake the effort to discern connections and interrelations for the purpose of evaluation and intervention."⁵⁵

When computers were first brought into my high school they were placed within the curriculum of business, presumably because if they were brought in with math, they would seem like giant calculators. At that point in my life, I was reading an assortment

“Whether intended or unintended, the postmodern fragment calls into question the metaphysics of the modern fragment. And yet, can postmodern fragmentary styles elude the structures of metaphysics?”

of books tinged with left-wing politics and writing poetry about not becoming a ‘suit’ and therefore I liked courses in history and the arts. As a result, I equated the term ‘business’ with corruption and greed and therefore never took a ‘computer class’ because I thought it would only prepare me for the careers I wanted no part of. Nevertheless, I still used computers outside of school and I also satisfied my curiosity for technology by making a video in grade twelve English, based on a poem I had written called “The Whiteshirts.” Years later, I completed a degree in Media Arts and began making short films and teaching with technology.

To elude is not to escape. Even though there is no exit from metaphysics, the metaphysical is not necessarily all-encompassing,

Neil Postman is an odd ally, for he is responsible for championing many of the myths I find myself crusading against (such as the notion that television is responsible for the disappearance of childhood by exposing children to adult ways),⁵⁶ but in *Technopoly: The Surrender of Culture to Technology*, he writes

“Embedded in every tool is an ideological basis, a predisposition to construct the world as one thing rather than another, to value one thing over another, to amplify one sense or skill or attitude more loudly than another.”⁵⁷

totalizing, or exhaustive. To write fragments that are not modern would be to remain forever elusive.”⁵⁸

I was once warned about assigning television viewing as a follow-up to a lesson, because the teacher I was assisting was aware of parents who did not want to expose their child to the ‘evils’ of

I could not agree more. My dilemma about teaching and technology has always been, and continues to be, about how to emphasize the skills that are not currently valued. One such skill is learning to communicate through images. Just as reading and writing are acquired skills, expressing oneself through images is a learned process. A computer class can teach students to program in HTML and upload their Web pages on the Internet, but even proficient programming does not guarantee that these students are communicating their intended messages.

The English teacher who prompted me to interpret my poems through video, pushed me to express myself visually. Like any English class we

television programming. I couldn't comprehend their reasoning and argued the only way to deal with these so-called 'evils' was to tackle the issues on television first hand and discuss why certain things are permitted and why other things are considered inappropriate. Television is often blamed for children's social and behavioural problems but as David Buckingham reveals, in "Teaching about the Media," in *The Media Studies Book* (1991), children aren't the uncritical consumers or victims they are often portrayed to be. Viewing television is about interpreting information and the meanings children construct from it are important for teachers to help us "understand more about what our students *already* know before we start trying to teach them what we think they ought to know."⁵⁹

were asked to read a section from a novel and write an essay on the ideas contained within. But sometimes she would ask us to make drawings of these ideas. At first I

found it hard to literally picture an idea which was based in words, but eventually I was able to draw upon visual metaphor and discovered how images could develop meaning and purpose. I soon learned that such as the case with words, I had to understand my images and their meanings before I could expect others to do the same. I could never ask a student to attempt to create a hypertext document or surf the Web without this skill set. However, the ability to use images is rarely stressed outside of visual art, but the Internet is a technology used by all disciplines. It is absurd to introduce students to a world of complex symbiotic relationships (those between sound, image and text) and only prepare them to deal with part of what they encounter.

There are always ambiguities surrounding a new technology. Recent technologies, particularly the Internet, have a *destining of revealing* toward the direction in which our technics are leading us. Here in the West, we want and expect instant gratification. Although, the Internet provides various communication capabilities, for a moment, consider it instead, exclusively as an “instrument for the distribution of data.”⁶⁰ People gain access to the knowledge they require simply by clicking. When a question arises, my first instinct is to go on-line and enlist a search engine. The Internet is infinite, incomplete—or at least the search engines are—and constantly changing, but more often than not, I find an answer I am seeking.

Why should I care about any of this? I am not a teacher so-to-speak (meaning that I don’t operate within ‘the school system’) because I have trouble convincing most people that I have something *to teach*. Since I deal with technology I am offered ample career opportunities as an IT (Information Technology or more apply Internet Technology) specialist. Thus far, the jobs I have interviewed for mostly seek technicians. A technical job is too difficult for someone like myself who learns to use technology

The Internet reduces by fumbling with it intuitively.

information to “that

which is standing-reserve” (in Martin

Heidegger’s sense),

and changes my

information seeking

experiences. “In

extending bodily

capacities, the tech-

nology also trans-

forms them”⁶² and

therefore technology

is non-neutral. Con-

trol is illusory. I can

command a compu-

ter, but reciprocally

it commands me. As

Heidegger states,

“the essence of

modern technology

shows itself in what

we call

Enframing.”⁶⁴ Every-

thing is affected by

technology because

My questions about the computer and education are onto-

logical. Technology is not about the proliferation of devices and

my interest in teaching is not about breaking down these devices

into quantifiable skills. It is about trying to understand these

devices in relation to the world. I am interested in hypertext

because of its intimacy with language. It is now equally important

to know how to communicate visually, orally and compositionally.

Marshall McLuhan believes “Heidegger surf-boards along the

electric waves.”⁶¹ In comparing the Heideggerian *standing reserve*

to the way a surfer is propelled by a wave, McLuhan has centered

in on my plight. I am paddling on my surfboard looking for the

right wave—The one which takes me to where I can teach beyond

the detached, linear, individualistic mentality of print. But, to talk

about forms of instrumentation, the computer for example, trans-

forming the previous contexts of linearity without eliminating the

old forms is difficult, if not impossible. The dominant view of

narrative is so deeply embedded in Western tradition, it is perplex-

ing for most people to understand the change⁶³ digitization brings

about. Linearity must become *a choice*, not *the choice* and the

West will only be able begin to respond to linearity by seeing some

of the limits of it.

The brilliance of this particular McLuhan soundbite (apart from

the obvious foreshadowing of “surfing” being the very metaphor

currently used for browsing the web) is how he alludes to the

blurring of boundaries between work and play (business /pleasure).

it is a stage
in the history of
being. He uses
“standing reserve”
to represent how

Surfing in the ocean is fun and “the surfer” is generally regarded as a carefree ‘slacker’ (idler), but anyone who has tried to surf knows it takes great concentration. The Internet is stigmatized foremost as a leisurely activity. Yet, it carries with it a materiality—the potential to conduct business and do research.

technology turns objects into raw materials and appears to make everything controllable.

In Western culture we are caught up in the clutches of our own techniques and often lose sight of what is sacrificed in the categorization of humans as resource. To ‘de world’ an object and artificially separate it from its context, so it becomes an interchangeable matter cut off from its own history, is to conceal the possibility of other forms of revealing. Progress is a state of control wherein everything is allocated with a name and/or a function.

In *Questioning Technology* (1999), Andrew Feenberg explores Heidegger's critique of 'autonomous technology' and agrees technology cannot be understood through its usefulness or as in my experience, with the concern over me teaching television—through its uselessness.

“I suspect academics realize that the changes already under way call into question the very foundation upon which the university is built—print culture and everything that goes with it. To make matters worse, the general public is largely unaware of what is at stake in recent technological developments.”⁶⁵

When we label technologies and classify them as smart, obsolete, obtrusive, evil or whatever: “Instead of a world of authentic things capable of gathering a rich variety of contexts, we are left with an ‘objectless’ heap of functions.”⁶⁶ If, as Heidegger cautions, we are only concerned with “pushing blindly with technology or what comes to the same thing, to rebel helplessly against it and curse it as the work of the devil,”⁶⁷ we are not extracting the potential there is to be discovered through technology.

There is not only one way to perceive something. Writing is unpredictable, difficult to question,⁶⁸ and fundamentally altered by computer technology. With new forms of spatial representations, like hypertext, allowing information to be accessed at intersecting multifarious levels rather than simple linear trajectories, the natural referent is losing or has lost its credibility and instead the new referent is being determined by the specific context. In that sense, Guy Debord's *Society of the Spectacle* applies to electronic space:

If the spectacle - understood in the limited sense of those "mass media" that are its most stultifying superficial manifestation - seems at times to be invading society in the shape of a mere apparatus, it should be remembered that this apparatus has nothing neutral about it, and that it answers precisely to the needs of the spectacle's internal dynamics.⁶⁹

Technology does not create distinctions between *this* and *that*, it explodes them. For example, on the Internet, the differentiation between public and private dissipates, as does business versus pleasure, knowing versus doing, useful versus useless and a whole host of other social orders. The question is not about whether computers are 'objects of play' or 'learning machines' because indisputably, they are both. What is probably most unnerving about this for teachers, is the proximity of the two. Pedagogy of the Internet is still in its infancy, but as educators increase their use of on-line databases, course homepages, and Web citations in essays, they must continually ask questions about technology. How are students being asked to use this technology? In what ways does this particular technology change the situation? Do students notice any changes?

The question “what does this medium do *for* society?” must be weighed against, “What does this medium do *to* society?” For there is a great deal to be unmasked in the world of computers, particularly this myth of neutral technology. It is often supported by the claim that the computer is only as good or bad as the data it is given: *Garbage In, Garbage Out*. Some people maintain that computers provide endless possibilities and insinuate they bring forth freedom. Is freedom the ability to express oneself in the form of a language? All forms of communication are circumscribed environments with *a range* of possibilities. This certainly includes computer programs.

Technology should not create a demand but fulfill one that already exists. As Landam notes in his preface, “The machine puzzles us less than the demand for it. In the decade since [the personal computer] became a commonplace device, it has worked a revolution not only in computers but in the mythology surrounding them.”⁷⁰

I observe the expectations people place on technology when I teach. One of my classes is titled “Time and Space in Film and Video.” It is a school ‘studio visit’ program at the

The presence of the computer changes entire situations. What effect will reading text off a computer screen have on book culture? Will it make the front-to-back reading of novels more difficult? How will it affect writing? Electronic text suggests many new ways of doing things and although I cannot possibly answer these questions, I feel

On Saturday afternoons I teach video to a group of High School students (age 14-18) at an art gallery in a major metropolitan city, and last week (02/12/00) I overheard a group of them discussing a school assignment. They were upset because their teacher was not accepting any research done via the Internet and banned them from using it altogether. I thought this might be a reaction on the part of the teacher

gallery designed to help students (grade 6 to 8) make a connection between image and meaning. It consists of two parts. The first part deals with photography wherein the students create a still-life by arranging various objects and backgrounds to create meaning. The idea is that the photograph will represent something other than 'pretty' objects. The second part deals with gesture wherein the students create meaning by using their bodies to convey messages. They produce a 'living picture' with a video

they are worth pursuing. The computer is breaking down boundaries between active and passive learning and in turn questions the *Grand Narratives* which are the basis of the school system. However, declaring technology as being *all good* or *all bad*, rather than seeing it as a series of *pros/cons* or *gains/losses* which inevitably will be subject to change, is to replace these boundaries with new ones. There is a certain danger in positioning the computer as *the* saviour for education.

In "The Computer Delusion" by Todd Oppenheimer, published in the July 1997 issue of *The Atlantic Monthly*, he contends that schools are "indulging in a consumer frenzy" and that "most will probably find themselves with more electronic gear than they need."⁷¹ Judging by the title one can guess this is an article opposing the computerization of the classroom and he surmises that the computer is just the latest technology to be located here—as education's possible redeemer. The article starts by establish-

against previous essays students submitted which were comprised completely of Web quotations and perhaps, the teacher was wary of the validity of some of their sources. But when I asked them, to my surprise one of them responded, "No. Our teacher thinks the Internet encourages us to plagiarize."

"Has your teacher gone over issues of intellectual property with you?"

"Not exactly. He said with books we know not to steal stuff."

They confided in me that they still planned to use the

camera, without using any sound to help convey their intended expressions and in the process define metaphor. It is all done through gesture. Afterwards, we take up the images they created in their groups and I am generally impressed by the students' comprehension. They say things like "our photograph looks better than the real objects do," or "although we meant our picture to be _____, we understand why you see it as _____." These students are making huge leaps in understanding how to	ing a history of empty promises made by a number of people who predicted how various technologies would revolutionize education (for example, in 1922 Thomas Edison speculated that motion pictures may some day displace textbooks, and in 1945 William Levenson, director of Cleveland public schools, remarked that "the time may come when a portable radio receiver will be as common as is the blackboard"). By using this <i>if history repeats itself</i> stance Oppenheimer anticipates that the computer may be just another costly mistake, one which will probably be blamed on the machines rather than on the claims of technology advocates: There is no good evidence that most uses of computers significantly improve teaching and learning, yet school districts are cutting programs—music, art, physical education—that enrich children's lives to make room for this dubious nostrum, and the Clinton administration has embraced the goal of "computers in every classroom" with credulous and costly enthusiasm⁷² Oppenheimer's argument is that a computer cannot make a bad teacher	Internet to narrow their topics down because Internet search engines were easier to use than library catalogues. Another student who was not initially involved in the conversation (and who attends a different High School) overheard our conversation and said: "The Internet is like how I am thinking, I can just type in a combination of words that I am interested in and then read a bit of the first few sites that come up. If I don't find my topic, I try different words....It is much easier then going all the way to
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communicate with images.

However, when I read the feedback surveys filled in by the visiting teachers who have brought their classes to the program, I am angered by their commentary (despite the fact that they are trying to be positive). The teachers are constantly suggesting that I inform their students more about the computer applications I use. The course has nothing to do with the computer apart from the fact that the camera we use is digital. The class lasts two hours and it is truly the only way to get an image back to

miraculously turn into a good one and he worries that funds are being misappropriated away from other areas of need. Although he opposes the current push for the computer, he is also aware that education cannot survive without technology. Therefore, "the solution is not to ban computers from classrooms altogether" but curb spending and think about the computer in terms of what it can bring versus what will be lost. Is it worth forfeiting historically proven activities which enhance learning such as art classes, sports teams, school trips and extracurricular activities such as school plays and pageants, to buy computers?

Ironically, by taking away the things that make the experience of going to school unique, educators may be eliminating themselves. Lyotard believes, 'professors' (academics) will no longer be needed: [since] much of the work they currently undertake can and will be taken over by computerized data network systems.⁷³ Comput-

the stacks to find out I'm on the wrong track....I would find out the names of the books and encyclopedias other people used who have webpages about things I am interested in and then I'd use those books to impress my teacher."

I asked "Do you think there is anything dishonest or limited about this method?" And then I realized I was talking to a generation accustomed to having information at their fingertips and to ask them to keep it at arms length, like their teacher had requested, is (at least in their eyes) a step backwards. Nevertheless, it was not

them within the time frame (I would prefer to shoot the photos on a tradition view camera, but opted for a digital, due to time and funding restraints). When the pictures are downloaded onto the computer they open automatically in Adobe Photoshop.⁷⁵ I put them through a basic filter to clean up the image and sometimes I use the crop tool to resize the pictures, before printing them out. Nearly every teacher feels their class has lost out by not learning this computer application, therefore failing to recognize the impor-

ers can provide many interesting opportunities, but there are still some things they cannot possibly provide. These things should also have a place within a school's curriculum because they are a fundamental part of *going*⁷⁴ to school.

Robert Logan is concerned with embracing the computer as a language and criticizes the school system for its lack of ability to adapt to the new:

Even though a failure of the school system has been recognized for a number of years, little, if any, remedial action to make structural changes has taken place. This is due in part to the conservative nature of the education community. The main reason for the failure, however, is that contemporary education lacks a mission that is in tune with today's social and economic environment, which has evolved and changed at a much faster rate than our schools. It is not so much that the content of the curriculum is out of date as it is that the style of education is not suited to contemporary needs and challenges. Stop gap measures like adding computer science to the curriculum or using computers as teaching tools will not remedy the ills of education.⁷⁶

Although he is a computer enthusiast, his views are similar to Oppenheimer's in that they are both calling educators into action. Rather than excepting or rejecting the computer, hypertext and the Internet as possible saviours for the education system, Logan believes teachers must discuss how the perspective of the world is being changed by computer technology and infomania. The Internet presents an excellent opportunity for such discussion and should be, if it is to become part of the way students

about my class anyway so I dropped it (Although I am intrigued by the notion of an Internet search engine resembling the thought process...).

tance of the lesson. Despite not learning this computer application (which is so extensive it is not possible to even scratch the surface within a two-hour time frame), these students are preparing themselves to be better information processors in a world which is increasingly image-based.

ordinarily experience things. Why not ask students how many Web pages they have come across which use a language other than English? Or how many sites they encountered which carry corporate advertising?

In Oppenheimer's conversations with Stanford's Larry Cuban, Cuban argued that "Schooling is not about information. It's getting kids to think about information. It's about understanding and knowledge and wisdom."⁷⁷ Similarly, Logan argues "If our institutions are to remain relevant and serve the needs of society, they must make better use of these communications and information-processing technologies."⁷⁸

If the computer is different from motion pictures, portable radio receivers, film strips, or the television, it must be established as such. Providing students with the opportunity to become active participants in their own education will allow the computer's potential to be experienced in the now. Otherwise, amassing computer equipment simply to be counted and displayed for parents and community to behold with the promise of a better future ("Someday we will have students using these computers to...), or not working with what a school has because of the myth that there is better equipment on the way, will not only hurt schools who could have used the funding elsewhere, but will ultimately keep technology from being accepted by learning institutions. Oppenheimer concludes his argument, with a quote from Michael Bellino, an electrical engineer at Boston University's Center for Space Physics, who appeared before the Massachusetts Board of Education to protest after a school eliminated 'proposed art, music, and physical-education positions in favour of buying computers':

'The purpose of the schools [is] to', as one teacher argues, 'teach carpentry, not hammer.'... We need to teach the whys and ways of the world. Tools come and tools go. Teaching our children tools, limits their knowledge to these tools and hence limits their futures.'⁷⁹

For the past several decades, philosophers and critics have been arguing about the end of history and the closure of the book. But these debates consistently miss the crucial point. The issue is neither philosophical nor literary but technological. History ends and the book disappears when narrative continuity collapses in the instant. Speed is the agent of this collapse. To attempt to resurrect history or reopen the book is to try to put the brakes on the speed that has become our milieu.'⁸⁰

We order more coffee. Someone says "I can't comment on hypertext....it's too new. We don't really know enough about it yet."

It is true. In Lucien Febvre and Henri-Jean Martin's The Coming of the Book (1958), the authors sight their preliminary problem as being 'how to arrange the book and where to set limits to the subject':

If it were a matter of writing a history of printing during the first three centuries of its existence we would be forced to divide the work according to the stages of development of printing technology. Even then I do not know if this would produce the best results, for the methods used in 1787...were very much those which Gutengerg would have recognized as being employed in his own shop, had he been able to reappear and visit a printing press in France.'⁸¹

They are talking about the best way to describe the coming of print over centuries. They can address the movement away from the handwritten manuscript (available to only a few) to the printed manuscript (available to the masses), in terms of a paradigm shift according to sheer popularity. This distinction between the handwritten and printed, is commonly thought of as *the* transition between the first and second stages of writing, but it takes place over several hundred years. How can I set limits on hypertext? In his interestingly titled essay "The Medium is the Memory" Florian Brody reasons,

Time is as much a human convention as it is a condition of existence. Every 'user' of time perceives it on an individual level that is in turn informed by social and cultural conditioning. The way we define the concepts of past, present, and future (and even

"To think at the speed of light -- this is the impossible challenge! The way we were educated in print culture does not prepare us to communicate in that urgent instant. We must start to think, perceive, criticize and synthesize in new ways that make communication in the various media both possible and profitable."⁸²

the unidirectionality of time) are reflected in all media and, furthermore, are actually enforced by the way we use media. It is precisely because time and space are the cornerstones by which we define our environments that they are central categories within any discourse about media.⁸³

The rapid rise of computers and the World Wide Web is legitimizing hypertext by exposing millions to it. It has only been six years since Netscape Navigator introduced this new way of experiencing and accessing information to the general public and only sixty-two years since Vannevar Bush and John H. Howard patented the Rapid Selector (a system for storing and retrieving documents stored on microfilm).⁸⁴

"Speed, speed and more speed. Would it be possible for a revolution to occur so quickly that no one even noticed it?"⁸⁵

Hypertext has appeared so quickly it can no longer be thought of as merely theoretical. A reader can consume, produce and publish text instantly. The fact that millions of people can voice opinions in a way never before possible is an indication of the arrival of a new stage for publishing and communication. Even if the movie is rarely ever as good as the book, technology may very well be our ontology in the West. Perhaps, it is difficult for teachers to find a way to reach students who, through contacts with digital text, are becoming increasingly independent of them. Teachers will soon have to face students who fundamentally read hypertext by seeing through the disorientation and

confusion that beleaguers those who are grounded in the static linear world of print-based text. A teacher can become a better technician and learn to reduce technical support calls, in hopes of keeping computers as transparent as possible. Or teachers can attempt to not take computers for granted and embrace hypertext, as something that not only enables people to gain access to information, but to also think critically about the entire information enterprise and information society. But is it possible to do both?

“Our ‘book’ will, in a certain sense, be a non-book. It should not be limited by the linear logic of the past, which urges the reader to proceed from the first page to the second, and then continue in the order marked by page numbering, from left to right, down and up, following page-turning conventions all the way to the end. Like a hypertext, the reader should be free to chart alternative courses through the wordmass we fabricate. The work must also be riddled with gaps, spaces and openings that invite the reader to write.”⁸⁶

I see hypertext as conversational as well as conversation being hypertextual and that is just one of the many problems I have encountered in my writing. I probably have much in common with Tristram Shandy from Laurence Sterne's *The Life and Opinions of Tristram Shandy, Gentleman*, because he is a narrator who never leaves the reader alone. He is always revealing things in a roundabout way by introducing and interrupting the linear narrative "...when a man is telling a story in the strange way I do mine, he is obliged continually to be going backwards and forwards to keep all tight together in the reader's fancy..."(book, 6, chapter 33).⁸⁷ Tristram does not so much as interrupt, as full on attack the conventions of the novel. For example, Chapter 24 of Book 4 is missing (he declares he 'tore it out' and there are missing page numbers to verify this) so he explains what was lost in Chapter 25. However, Tristram is truly visionary in how he involves the reader in the construction of the meaning. He expects the reader to fill in the gaps he creates in the plot. Omissions are evidenced by asterisks. Sometimes there is an asterisk for each missing letter and it is a game for the reader to decode, while other times he leaves blanks for the reader encouraging them to add their own words.

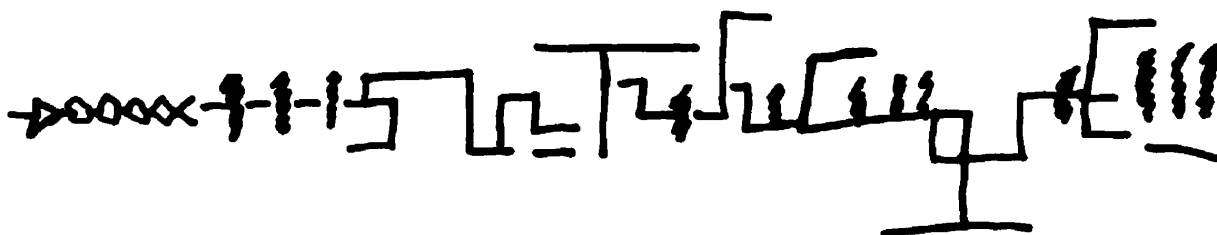
Here is my attempt:

Please ***** **** for me. ** ** ***** ***** ***** I ever expected. * ** ****
 ***** I am_____.

My favourite section of *Tristram Shandy* is book, 6, chapter 40, where he draws squiggly lines to represent the way he has moved through the first, second, third and fourth volumes. Although the fifth volume is not a straight line, it is closer than his pervious attempts, and therefore he thinks he has been 'very good'. After borrowing a writing-master's ruler he draws a straight line and promises to stick to it, but before attempting says:

Pray can you tell me, — that is, without anger, before I write my chapter upon straight lines — by what mistake — who told them so — or how it has come to pass, that your men of wit and genius have all along confounded this line, with the line of Gravitation?^{ss}

A line of my narrative looks like this:



The idea of the great, inescapable book belongs to the age of print that is now passing which is the greatest as well as the most destructive of technologies.

in the high tech, through which other futures emerge, are brought to life. “brought forth.” In the next chapter I will explain the struggle for the essence of technology

Prometheus is hell-bent in the cockpit, but Hermes has snuck into Mission Control, and Of course you would. That's why we'll work through this daunting revolution. That, and the magnitude aboard with the teaching language sits "proof" (LIX), its power: Dissolve all metalanguage to another (XLII LIX LXXXVII).

This sketches the outline of a politics that would respect both the desire for justice and the desire for the unknown

Err Msg: This Program Has Performed an Illegal Operation and Will Be Shut Down

Notes

- ¹ George P. Landow, *Hypertext 2.0: The Convergence of Contemporary Critical Theory and Technology*. (Baltimore: John Hopkins University Press, 1997), p.26.
- ² Jay David Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale, NJ: Lawrence Erlbaum, 1991), p.33.
- ³ Erik Davis, *Techgnosis: Myth, Magic, and Mysticism in the Age of Information* (New York: Three Rivers Press, 1998), pp.13-14; J.E. Cirlot, *A Dictionary of Symbols 2nd edition* (London: Routledge, 1971), pp.266, 361-2.
- ⁴ Davis, *Techgnosis*, p.15.
- ⁵ Ibid., p.14.
- ⁶ Ibid., p.17.
- ⁷ In, *Profiles of the Future: An Inquiry into the Limits of the Possible* (New York: Harper & Row 1958, [rev. 1973, 1984]), Arthur C. Clarke states his three Laws, the third of which is: "Any sufficiently advanced technology is indistinguishable from magic."
- ⁸ The "holodeck" is the "Holographic Environment Simulator" aboard the Starship Enterprise on the television series Star Trek: The Next Generation. To me it represents the utmost in entertainment (although it is a work of fiction). Basically when a character enters the Holodeck, they enter a simulated environment that reproduces any place in space or time they may want to visit, with near real-life fidelity, allowing them to meet and interact with anyone in that simulated environment.
- ⁹ Marshall McLuhan and Quentin Fiore, *The Medium is the Massage : An Inventory of Effects* (New York: Bantam, 1967) n.p.
- ¹⁰ Giovanna Borradori, "Leading Words Home in Brian Boigon, ed. *Culture Lab 1*, (New York: Princeton Architectural Press, 1993), p. 120.
- ¹¹ Bob Cotton and Richard Oliver, *Understanding Hypermedia 2.000: Multimedia Origins, Internet Futures* (London: Phaidon, 1997), p.28.
- ¹² William Gibson's *Neuromancer* is a futurist science-fiction story regarded as the inaugural 'cyberpunk' novel (a sci-fi novel featuring high-tech urban counterculture). It is the first in a trilogy by the author, followed by *Count Zero* and *Mona Lisa Overdrive*.
- ¹³ Postmodernism means many things to many people. Although my thoughts on postmodernism have been shaped by various things (including writings by Hal Foster, Mark Amerika, Albert Borgman and others), for the purposes of this text I am attempting to stay as close as possible to Jean-François Lyotard's *The Postmodern Condition* (Minneapolis: University of Minnesota Press, 1984), wherein he describes postmodernism as "incredulity towards metanarratives," p. xxiv.
- ¹⁴ Grand Narratives are the various popularized stories and myths of modern storytelling which have become a 'crutch' for individuals to turn to when they feel their experiences have become marginal. Assuming they can no longer recount their life story, they buy into these prefabricated ones. An example of this is the grand narrative of success : To get the better job, the better house, the luxury car and access to better restaurants, power, sex, designer drugs etc. Who's goals are these, the individual's

or society's?

¹⁵See Landow, *Hypertext 2.0* and Richard A. Lanham, *The Electronic Word: Democracy, Technology, and the Arts* (Chicago: University of Chicago Press, 1994).

¹⁶The Choose-Your-Own-Adventure series of books were popular in the 1980s. Although, the books are like a game, they are very story-based. There are no special rules or gimmicks just text and choices (for example "You have reached a cave. If you want to enter. Turn to page 51. If you want to turn back turn to page 23"). The series spans every imaginable genre and includes 184 books. The first was published in 1979.

¹⁷Eastgate Systems Inc. is a hypertext distributor and developer located in Watertown Massachusetts, their slogan is "At Eastgate, we create new hypertext technologies and publish serious hypertext, fiction and non-fiction : serious interactive writing." They can be located at <www.esatgate.com>.

¹⁸Theodor Nelson, *Literary Machines*, 0/2, as quoted by Landow in *Hypertext 2.0*, p.3.

¹⁹Mark C. Taylor and Esa Saarinen, *Imagologies:Media Philosophy* (New York:Routledge, 1994), Telewriting 6.

²⁰*Ibid.*, Styles 7.

²¹*Ibid.*, Telewriting 6.

²²Roland Barthes, *S/Z* (New York:Hill and Wang, 1974), p. 15.

²³*Ibid.*, p.5.

²⁴*Ibid.*, p.8.

²⁵Landow, *Hypertext 2.0*, p.3.

²⁶Bolter, *Writing Space*, p. 161.

²⁷Barthes, *S/Z*, p. 78.

²⁸Bolter, *Writing Space*, pp. 114-15.

²⁹Landow, *Hypertext 2.0*, p. 43.

³⁰Barthes, *S/Z*, p. 4.

³¹*Ibid.*, pp. 5-6.

³²Mark C. Taylor and Esa Saarinen, *Imagologies*, Telewriting 6.

³³Andrew Feenberg, *Questioning Technology* (New York: Routledge, 1999), p. 85.

³⁴Francis Hwang, "Invisible Industry," *Art Byte* (March/April, 2000): 40.

³⁵Martin Heidegger, *Discourse on Thinking*, trans. J. Anderson, (New York: Harper & Row, 1966)p. 54, as quoted in Feenberg, *Questioning Technology*, 185.

³⁶On "Technological Fetishism and the Techno-Cultural Unconscious," see R.L. Rutsky, *High Techne: Art and Technology from the Machine Aesthetic to the Posthuman* (Minneapolis: University of Minnesota Press, 1999), pp 129-158.

³⁷These figures come from an announcement made by Apple CEO Steve Jobs, in October 1999, which were cited by Hwang in his article "Invisible Industry," *Art Byte* (March/April 2000):41.

³⁸Katherine Barber, ed., *The Canadian Oxford Dictionary* (Don Mills, Ontario: Oxford University Press, 1998), p. 837.

³⁹*Ibid.*, p. 594.

- ⁴⁰Mark C. Taylor and Esa Saarinen, *Imagologies*, Net Effect 1.
- ⁴¹*Ibid.*, Pedagogies 6.
- ⁴²Hwang, "Invisible Industry," *Art Byte* (March/April 2000): 41
- ⁴³Lyotard, *The Postmodern Condition*, p 3.
- ⁴⁴Mark C. Taylor and Esa Saarinen, *Imagologies*, Net Effect 10.
- ⁴⁵Lyotard, *The Postmodern Condition*, p.4.
- ⁴⁶*Ibid.*, pp. 4-5.
- ⁴⁷Landow, *Hypertext 2.0*, p.287.
- ⁴⁸Lyotard, *The Postmodern Condition*, p.5.
- ⁴⁹*Ibid.*, p. 9.
- ⁵⁰*Ibid.*, p. 6.
- ⁵¹'Language Games' is a philosophical concept Lyotard borrows (and builds upon) from Wittgenstein. Basically it refers to the context(s) in which people learn to use words. Individuals tend to change meaning and thus, change language games often without noticing. This causes different kinds of problems for society. Wittgenstein's focus is "philosophical confusion" whereas Lyotard's focus is the enormous injustices which result from language games.
- ⁵²Lyotard, *The Postmodern Condition*, p. 27.
- ⁵³*Ibid.*, p. 23.
- ⁵⁴Landow, *Hypertext 2.0*, pp.183-4
- ⁵⁵Mark C. Taylor and Esa Saarinen, *Imagologies*, Media Philosophy 11.
- ⁵⁶Neil Postman, *The Disappearance of Childhood* (London: W.H. Allen, 1983).
- ⁵⁷Neil Postman, *Technopoly: The Surrender of Culture to Technology* (New York: Vintage, 1993),p.13.
- ⁵⁸Mark C. Taylor and Esa Saarinen, *Imagologies*, Styles 4.
- ⁵⁹David Buckingham, "Teaching About the Media" in David Lusted, ed., *The Media Studies Book: A Guide for Teachers* (London: Routledge, 1991), p 31.
- ⁶⁰"The major networks, such as the French Teletel and the Internet were originally conceived by technocrats and engineers as instruments for the distribution of data," Andrew Feenberg, *Questioning Technology*, p.191.
- ⁶¹Marshall McLuhan, *The Gutenberg Galaxy* (Toronto: University of Toronto Press, 1962), p.248.
- ⁶²Don Idhe, *Technology and the Lifeworld* (Indianapolis: Indiana University Press, 1990), p.75. [To see section on Idhe, turn this text over.]
- ⁶³As Douglas Rushkoff points out humans have an inability to cope with change. "Just as there are human genes with no instructions other than to resist mutation, there seem to be human beings with no other programming than to resist cultural change." Douglas Rushkoff, *Playing the Future*, (New York: Harper Collins, 1996) p.16.
- ⁶⁴Martin Heidegger, *The Question Concerning Technology*, trans. W. Lovitt (New York: Harper & Row, 1977), pp.25-26.
- ⁶⁵Mark C. Taylor and Esa Saarinen, *Imagologies*, Communicative Practices 7.
- ⁶⁶Feenberg, *Questioning Technology*, 184.
- ⁶⁷Heidegger, *The Question Concerning Technology*, 25-26.
- ⁶⁸I am referring again to the difficulty of differentiating between a connotative or denota-

tive understandings of written texts.

⁶⁹Guy Debord, *The Society of the Spectacle*. Donald Nicholson-Smith, trans., (New York: Zone Books, 1994), thesis 24. It was originally published in 1967 and Debord's commentary was largely a reaction to the influx of broadcast television he had witnessed in the years prior to the writing of this book.

⁷⁰Lanham, *The Electronic Word*, ix.

⁷¹Todd Oppenheimer, "The Computer Delusion," *The Atlantic Monthly* (July 1997), <www.theatlantic.com/issues/97jul/computer.htm> .

⁷²*Ibid.*, from abstract.

⁷³Lyotard, *The Postmodern Condition*, p.53.

⁷⁴I am a largely in favour of distance learning and the many opportunities the personal computer and the Internet can provide for students. However, there are also some benefits to 'going' to school as well. A student should be able to choose what type of education suits his/her lifestyle best, but if aspects of attending school continue to be eliminated, the choice to not go will be much easier to make.

⁷⁵Adobe Photoshop is software used for photo retouching, image editing and colour painting.

⁷⁶Robert Logan, *The Fifth Language: Learning a Living in the Computer Age*, (Toronto: Stoddart, 1995) p. 8.

⁷⁷Todd Oppenheimer, "The Computer Delusion."

⁷⁸Robert Logan, *The Fifth Language*, p. 215.

⁷⁹Todd Oppenheimer, "The Computer Delusion."

⁸⁰Mark C. Taylor and Esa Saarinen, *Imagologies*, Speed 9.

⁸¹Lucien Febvre and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing 1450-1800* (New York: Verso, 1976) [orig.1958], p. 12.

⁸²Mark C. Taylor and Esa Saarinen, *Imagologies*, Speed 2.

⁸³Florian Brody, "The Medium is the Memory" in Peter Lunenfeld, ed. *The Digital Dialectic: New Essays on New Media* (Cambridge, MA: MIT Press, 1999), 139.

⁸⁴Bob Cotton and Richard Oliver, *Understanding Hypermedia 2.000*, p.28.

⁸⁵Mark C. Taylor and Esa Saarinen, *Imagologies*, Speed 9.

⁸⁶*Ibid.*, Gaping 13.

⁸⁷Laurence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman* (Hertfordshire: Woodsworth Editions Limited, 1996 (orig. 1760-7)), p. 351.

⁸⁸*Ibid.*, p. 333.

References

- Amerika, Mark, and Lance Olsen. "Smells Like Avant Pop: An Introduction, Of Sorts." *In Memoriam to Postmodernism*. Ed. Mark Amerika and Lance Olsen. San Diego State University Press, 1995.
- Barber, Katherine, ed. *The Canadian Oxford Dictionary*. Don Mills, Ontario: Oxford University Press, 1998.
- Barrett, Edward, ed. *Text, ConText, and Hypertext: Writing with and for the Computer*. Cambridge: MIT Press, 1988.
- Barthes, Roland. *S/Z*. New York: Hill and Wang, 1974.
- Birkerts, Sven. *The Gutenberg Elegies: The Fate of Reading in an Electronic Age*. Boston: Fawcett Books, 1995.
- Bolter, Jay David. *Writing Space: The Computer, Hypertext and the History of Writing*. Hillsdale, NJ: Lawrence Erlbaum, 1991.
- Blackwell, Lewis and David Carson. *The End of Print: The Graphic Design of David Carson*. San Francisco: Chronicle, 1996.
- Brody, Florian "The Medium is the Memory." Peter Lunenfeld, ed. *The Digital Dialectic: New Essays on New Media*. Cambridge, MA: MIT Press, 1999.
- Buckingham, David. "Teaching About the Media" *The Media Studies Book: A Guide for Teachers*. Ed. David Lusted. London: Routledge, 1991: 12-35.
- Bush, Vannevar. "As We May Think." *Atlantic Monthly* 176 (July 1945): 101-8.
- Bussy, Pascal. *Kraftwerk: Man, Machine and Music*. Middlesex, England: SAF Publishing Ltd, 1988.
- Carlton, Jim. "Befuddled PC Users Flood Help Lines, And No Question Seems to Be too Basic." *The Wall Street Journal*, March 1, 1994: B1, B6.
- Cirlot, J. E. *A Dictionary of Symbols 2nd edition*. London: Routledge, 1971.
- Clarke, Arthur C. *Profiles of the Future: An Inquiry into the Limits of the Possible*. New York: Harper & Row, 1958. [rev. 1973, 1984.]
- Cotton, Bob and Richard Oliver. *Understanding Hypermedia 2.000: Multimedia Origins, Internet Futures*. London: Phaidon, 1997.

Cuban, Larry. *Teachers and Machines: The Classroom Use of Technology Since 1920*. New York: Teachers College Press, 1986.

Davis, Eric. *Techngnosis: Myth, Magic, and Mysticism in the Age of Information*. New York: Three Rivers Press, 1998.

Debord, Guy. *The Society of the Spectacle*. Donald Nicholson-Smith, trans. New York: Zone Books, 1994. [orig. 1967.]

Dreyfus, Hubert. "Highway Bridges and Feasts: Heidegger and Borgmann on How to Affirm Technology." <<http://socrates.berkeley.edu/~frege/dreyfus/Borgman.htm>>.

Febvre, Lucien and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing 1450-1800*. New York: Verso, 1976. [orig. 1958]

Feenburg, Andrew. *Questioning Technology*. New York: Routledge, 1999.

Foster, Hal, ed. *The Anti-Aesthetic: Essays on Postmodern Culture*. Port Townsend, Wash.: Bay Press, 1983.

Foly, Louise Munro. *Forest of Fear (Choose Your Own Adventure 54)*. Toronto: Bantam, 1986.

Gadamer, Hans-Georg. *Truth and Method* Second Revised Edition, trans. Joel Weinsheimer and Donald G. Marshall. New York: Continuum, 1989.

Gibson, William. *Neuromancer*. New York: Ace, 1984.

Godfrey, Tony. *Conceptual Art*. London: Phadion, 1998.

Hwang, Francis. "Invisible Industry." *Art Byte* (March/April, 2000): 40-41.

Heidegger, Martin. "The Thing." *Poetry, Language, Thought*, trans. Albert Hofstadter (New York: Harper and Row, 1971).

Heidegger, Martin. "The Question Concerning Technology." *The Question Concerning Technology and Other Essays*, trans. William Lovitt. New York: Harper & Row, 1977.

Heim, Michael. *The Metaphysics of Virtual Reality*. New York: Oxford University Press, 1993.

Idhe, Don. *Technics and Praxis*. Dordrecht, Holland: D. Reidel Publishing Company, 1979.

- Idhe, Don.** *Technology and the Lifeworld.* Bloomington and Indianapolis: Indiana University Press, 1991.
- Jackson, Shelley.** *Patchwork Girl* (Storyspace). Cambridge, MA: Eastgate Systems, 1995.
- Joyce, Michael.** *Afternoon* (Storyspace). Cambridge, MA: Eastgate Systems, 1990.
- Lanham, Richard.** *The Electronic Word: Democracy, Technology, and the Arts.* Chicago: University of Chicago Press, 1994.
- Landow, George P.** *Hypertext 2.0: The Convergence of Contemporary Critical Theory and Technology.* Baltimore: Johns Hopkins University Press, 1997.
- Leibold, Jay.** *Grand Canyon Odyssey (Choose Your Own Adventure 43)* Toronto: Bantam, 1985.
- Logan, Robert.** *The Fifth Language: Learning a Living in the Computer Age.* Toronto: Stoddart, 1995.
- Lunenfeld, Peter.** *Snap to Grid: a User's Guide to Digital arts, Media, and Culture.* Cambridge, MA: MIT Press, 2000.
- Lyotard, Jean-François.** *The Postmodern Condition.* Minneapolis: University of Minnesota Press, 1984.
- McLuhan, Marshall.** *The Gutenberg Galaxy.* Toronto: University of Toronto Press, 1962.
- McLuhan, Marshall and Quentin Fiore.** *The Medium is the Massage: An Inventory of Effects.* New York: Bantam, 1967.
- Merleau-Ponty, Maurice.** *Phenomenology of Perception*, trans. Colin Smith. New York: The Humanities Press, 1962.
- Montgomery, R. A.** *The Abominable Snowman (Choose Your Own Adventure 13).* New York: Bantam, 1982.
- Negroponte, Nicholas.** *Being Digital.* New York: Knopf, 1995.
- Oppenheimer, Todd.** "The Computer Delusion," *The Atlantic Monthly* (July 1997).
<www.theatlantic.com/issues/97jul/computer.htm> .
- Postman, Neil.** *The Disappearance of Childhood.* London: W.H. Allen, 1983.

Postman, Neil. *Technopoly: The Surrender of Culture to Technology*. New York: Vintage, 1993.

Pullias, Dave. "Where do we go from here?" *ATTE Journal* (Winter 1989): 3-4.

Rushkoff, Douglas. *Playing the Future*. New York: Harper Collins, 1996.

Rutsky, R.L. *High Techne: Art and Technology from the Machine Aesthetic to the Posthuman*. Minneapolis: University of Minnesota Press, 1999.

Sterne, Laurence. *The Life and Opinions of Tristram Shandy, Gentleman* (Hertfordshire: Woodsworth Editions Limited, 1996. [orig. 1760-7.]

Taylor, Mark C. and Esa Saarinen, *Imagologies: Media Philosophy*. New York: Routledge, 1994.

Ulmer, Gregory. *Applied Grammatology: Post(e)-Pedagogy from Derrida to Joseph Beuys*. Baltimore: Johns Hopkins University Press, 1995.

Walter, John L. "On Phonography: How Recording Techniques Change Music and Musicians." *Times Literary Supplement* April 26, 1996: 10.

Wittgenstein, Ludwig. *Philosophical Investigations*. 3rd ed Trans. G. E. M. Anscombe. New York: Macmillan, 1968.