Interface Epistemology: Hypermedia Work in the Academy

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It's a curious thing to find that a project close to your heart is now historical, but a decade ago I embarked upon a doctoral dissertation in and about hypertext and even saying that word sounds about a million years old, so there you have it.

I want to tell you a bit about the story of writing and reading that project – a native hypermedia work completed at York University in 2000 just as that institution was circulating a discussion paper proposing that all electronic dissertations be submitted with 12 point Times Roman font and one-and-a-half inch margins regardless: the future of writing as pdf. Then, as now, I saw the future of writing somewhat differently: I was particularly interested in the epistemological status of interface, especially the capacity of interfaces to make connections and arguments intelligible to readers.

My dissertation, *Building Feminist Theory: Hypertextual Heuristics,* was an exploration, in hypertext, of the resonances and productive couplings between digital writing technologies and feminist theories. Implicit in the title was the claim that the process of shaping hypertext was itself a form of feminist theory production. Rather than simply identifying feminist hypertexts and explaining them in terms of a feminist hermeneutic, the dissertation used theory to build a new kind of text, a text which sought a form resonant with the bordercrossing narratives and subaltern knowledges it sought to explore. Understanding the interface and the text to be co-constitutive of meaning, then, I struggled at all stages with the choice of interface and with the limitations of code available to me at the time of writing. I'm going to discuss and show you some examples of how the interface to the work evolved, possibly regressed, and, is now, I hope, evolving again.

At the time, I was also starting to read and write hypertext fiction and I loved Deena Larsen's account of how she began writing hypertext:

> *I wrote a series of stories about women in a Colorado mining town. But the stories weren't enough to show the relationships some too secret for words, some the characters didn't understand. So I put the stories in little houses on a model train set and strung different colored embroidery thread to show different connections. But you could not follow the two-inch thick maze of thread. My friends were very supportive. Comments included: 'You idiot. Do this on a computer. Here is how to work HyperCard. Now get this thing out of my basement.'*[1]

I stuck that quotation on my computer and thought it was a great model for academic work in social and political theory. (Yes, it took me a long time to finds a supervisor ;-) But long before I was introduced to hypertext software I, too, wrote hypertextually. I have always written this way: with straws and string and handwritten letters; cross-legged on the floor with my scissors and glue-stick; in an empty room arranging and rearranging four hundred eight 1/2 by 11 handwritten sheets, drawing arrows with thick magic markers (that was my Master's thesis covering an entire room and, yes, it did make me crazy). Like my feeling of 'coming home' to feminism, a concept problematized by now, I experienced digital writing in hypertext as yet another homecoming. To me, putting these two things together – hypertext writing strategies and feminist theories – seemed obvious and irresistible. I was curious, then, to find when I embarked upon the project in the late 1990s that, for the most part, the emerging hypertext theory paid little attention to either women hypertext practitioners, or feminist theories that had come before. The literature, as Burnett also observed at the time, was "conspicuous in its omission of female writers and feminist critics, not to mention writers of color."[2]

And since this panel is in part about interrogating what might not be so new in new media I'll add that this absence of critical attention in the literature was particularly striking given that feminists have always had a particular investment in the creation of new genres and structures and breaking the mold of narrative forms. Feminist theory has a long history of putting forward claims regarding what is at stake in adopting new ways of thinking, storytelling, writing the unspeakable, theorizing empty spaces and absences. As Sara Diamond notes, "the circular pathway, for example, has long been considered a feminist quest myth" remarking, further, that many of the features struggled against in feminist experimental practice - "inciting incidents, narrative peaks, troughs and closure"[3] were, in hypertext, already absent.

When I began to conceptualize my doctoral project, I assumed initially that I would look at a handful of hypertexts that I could argue were radical or otherwise interesting in terms of narrative strategies and use of code, make claims for their 'feminism' and then allow these works to guide my exploration of the 'newness' of the medium. The process of actually working with these texts, however – and my own experience of encountering hypertext as familiar,

as a continuation of my own writing practices – forced a reconsideration of my investment in theorizing hypertext as presenting anything like a radical rupture with experimental practices over the last century. I opted instead to situate feminist hypertext in terms of its continuity with other experimental writing and visual practices and as my definition became more fluid, the dissertation grew to accommodate many different texts, practices and images, many of them not contemporary or digital at all. And this wide-ranging interdisciplinary approach to how literary and argumentative hypertext might be brought together in conversation, how images and text work in a hypertext environment, how feminist theories of print and film, autobiography and critifiction, desire and social difference might engage hypermedia practice resonated strongly with an interest in boundary-crossing evident in both hypertext and feminist scholarship.

I brought other preoccupations to the project, too, of course: my interest in ephemera, the marginal and the relationship of collecting bits and pieces to identity; Walter Benjamin's Arcades project; McLuhan; a fascination with quilting and piecing fabrics and stories, digital stitching together of all kinds; building blocks and the Eames houses of cards; collage work and mash-up.

There are connections here, too, with Matthew's work on amateur prosumer culture and the autobiographical impulse. Almost all of the images I made or adapted referred directly back to the lessons suggested to me by the hypertexts themselves or the feminist theory to which I turned initially to help me to understand these practices. The autobiographical, first-person impulse of these early works was striking and, in the end, images included in the dissertation were, with few exceptions, my own – the exceptions mostly being images taken/stolen directly from the hypertexts that inspired, informed and shaped the work. The pages were in many ways self-portraits, or images of friends, hand to the scanner. I also scanned pieces of fabric, bits of quilting, braids cut off and saved in tissue, petals saved for years between pages of favourite books. And in keeping with the collaborative spirit and collective memory-making enterprise of some feminist hypertexts, the dissertation is also a mnemonic system, filled with small gifts from people who encountered the text along the way to its completion: laughing into my microphone so I could make .wav files, film from an MRI so I could have images of spines and organs, baby pictures, pockets turned inside out to reveal mysterious things to put under my digital microscope . . .

In the end, *Building Feminist Theory: Hypertextual Heuristic*s consisted of over 1400 lexias. But the intellectual core of the project, and the most interesting aspect of hypertextual writing to my mind, was the constellation of ideas held aloft by the technology. In the case of this dissertation, the web of original lexias, quotations, imagery and sound put into conversation was held together by more than 17,000 links. In this way the linking structure was the intellectual core of

the project. Indeed, the linking structure – the ability of this writing technology to hold the all-at-onceness of theory as we build it, to communicate this constellation of ideas, and crucially, to have readers encounter and explore them (though never unmediated, of course) – is, potentially, the most theoretically interesting aspect of hypermedia writing.

As theoreticians, we are, of course, used to reading across texts and complex arguments. And these associative webs we develop as readers are intricate. What we are less accustomed to encountering is the way others read across texts and complex arguments before these are communicated to us as single, if complex, narratives for academic publication. As I look back on the production of the dissertation and the way I hoped it would communicate, I still see the promise of hypertextual writing as allowing me to deliver on disk, an encounter with, at once, my library, my theoretical orientation, the way I made (sometimes contradictory) sense of (these) texts, and understand myself to be positioned by them, my reading and visual art practices, the themes that recur as I come to new understandings, through new encounters and re-readings and how I come to encounter and generate new knowledges. It felt and still feels very de Certeau in the sense that "exhibition, showing, making visible" is understood as a form of analysis and of theory-making. And the process of constructing the work certainly made me feel like I had an insider's intimacy with Adorno's Negative Dialectic. Ultimately, I associate the hypertext with the scaffolding of the academic enterprise, the unconscious of the philosophical line, whose communication, I offer, has real academic, theoretical and aesthetic value, namely: the concretization of a web of signification.

And so you can imagine my surprise – and disappointment (ok, horror) – when the piece began to circulate beyond my committee, the key interlocutors to this work, in its final form – html – and that's not how the piece seemed to function.

One of the first things I came to know when I began to share my dissertation widely with readers was that, more often than not, my readers read nodes and not links. These reluctant bricoleurs read words and quotations only, and so the lexias were understood as the content of the dissertation and the structure itself – basically what constituted the epistemological intervention – its contours, its conventions, any new ground I'd hoped to break – was largely unintelligible to many of them. For some months I understood the work as a catalogue of losses – the loss of polemic, of certain kinds of rhetorical gestures, and of mastery for which I was prepared (this being hypertext, after all) but also the loss of a community of like-minded thinkers with whom to share the project. While I believe new literacies are emerging and even ten years ago we were talking about a new grammar, aesthetics and poetics of digital texts, I had undertheorized the ways in which readers – expert readers of linear texts – would experience hypertextual work at that time.

Soon after I defended, I attended a conference at which Diane Greco, then acquisition editor at Eastgate, proclaimed that the urgent call to readers was "to learn to read archives."[4] And this sounded just right to me, given that something that's 1400 anything long is an archive and a linking structure in itself and doesn't teach anyone to feel comfortable crossing it. I love that this panel is also talking about Xerox and archives, then, both things being close to my heart while working on this project because essentially what I had produced was a large archive with instructions for reading.

Just about that time, too, Lev Manovich declared the database to be the new symbolic form of the computer age and I was intrigued by that, of course, and also with his idea that the specificity of new media might well reside precisely in the way that the database can be layered with multiple interfaces – and that being able to read datasets and collections has, of course, been commonplace in different historical periods. "For centuries," Manovich writes, "a spatialized narrative where all images appear simultaneously dominated European visual culture then it was relegated to 'minor' cultural forms as comics or technical illustration. 'Real' culture of the 20th century came to speak in linear chains, aligning itself with the assembly line of an industrial society and the Turing machine of a post-industrial era. Two competing imaginations, two basic creative impulses, two essential responses to the world."[5]

In response to these ideas, I began to revisit the way my project had evolved. *Hypertextual Heuristics* was first conceptualized as spatial narrative and built using Storyspace – software that enables a spatial layout of information. It was exported to html at the last minute because, at the time, Storyspace was pretty clunky in its handling of rich media. The conversion seemed like a good idea, especially given the potential ease of dissemination of the work over the internet. In retrospect, however, moving from Storyspace to html was a mistake. In html, the work performed like a linear catalogue. What I hadn't bargained for was the way the export flattened out the visual cues given to readers about the relationships of texts to each other and forced a primacy of hierarchical relationships on a text that had not been coded for in the beginning. Listening to Greco and reading Manovich I was struck by the realization that the dissertation functioned problematically because the spatial aspects of my work were no longer apparent and the cues for reading the archive were gone.

In performing the translation from Storyspace to html I had evacuated the spatial dimensions of the project and, in Manovich's terms, aligned myself with the assembly line. This was especially vexing because I had, even before embarking on the project, seen my texts as three dimensional and sculptural – as a thought sculpture. But it was clear that the interface I had chosen meant that the sculptural form of the argument was not intelligible to readers, the contours of both the archive and the argument I was making about it were lost, and the most interesting feature of the writing – the constellation of ideas held aloft by

the technology through its linking structure – failed to communicate. Worse, for a piece that argued for the navigational apparatus itself as a signifying component of the text, the html version worked against the kind of knowledge I was trying to produce. So let me just show you a bit of this.

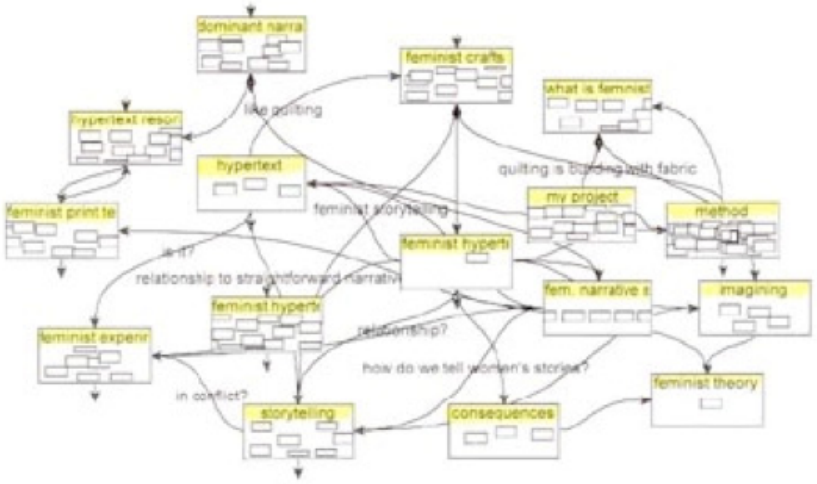

Figure 1: An early screenshot of the dissertation. Spatial, but two-dimensional, a point to which I will return. (An aside: the Storyspace datasets have all begun to disappear… I was going to show the early interface in action for the conference, but the disks are actually erasing themselves from my disks like missives from special agents!)

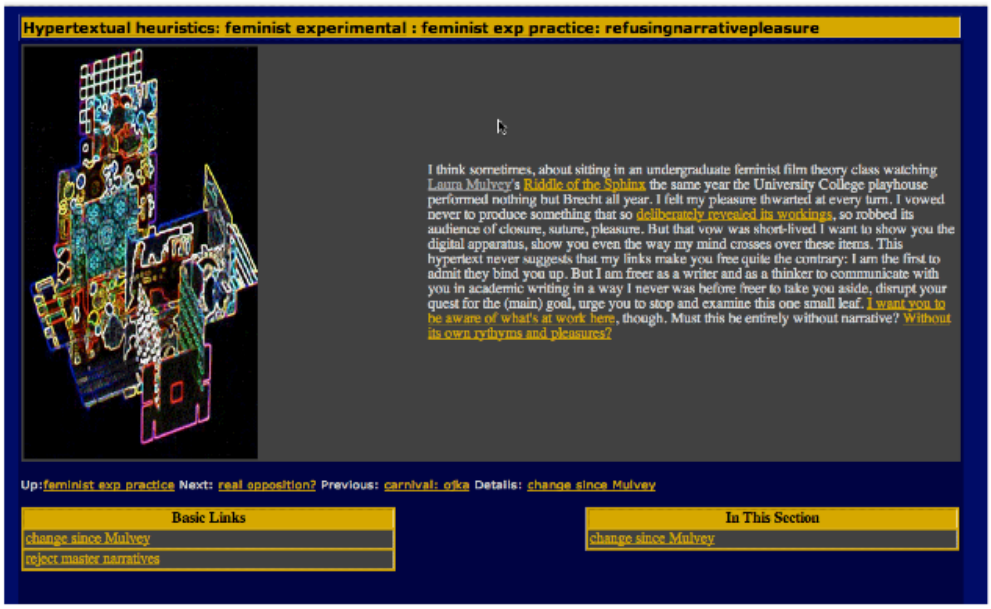

Figure 2: Here are some screen shots from the html version. Note that the menu bars at the top replace the arrows drawn in the Storyspace programme. This isn't simply a design issue: it's an epistemological issue. A struggle with

interface is a struggle with meaning and knowledge production. I'm reminded here of Walter Benjamin: "for the important thing to the remembering author is not what he experienced, but the weaving of his memory, the Penelope work of recollection."[6] In considering what is at stake in theorizing interface epistemology, then, we need to ask how we can make intelligible the linked and coded concretization of the weaver's constellation.

My understanding of the constellation and its philosophical and political importance emerges from my reading of the Frankfurt school. When we want to understand an object of interest – in the case of my doctoral work, for example, feminist hypertext theory – we must not look directly at the object, fetishizing the concept. For Benjamin, the constellation is a multidimensional form: the arrangement or configuration in which a variety of concepts, models, ideas or other materials takes shape. In Adorno's extension of the idea, the constellation is addressed this way: "as a constellation, theoretical thought circles the concept it would like to unseal hoping that it may fly open like the lock of a well-guarded safe deposit box: in response not to a single key or a single number, but to a combination of numbers."[7] McLuhan's prologue to Gutenberg galaxy echoes the idea and approach: "the galaxy or constellation of events upon which the present study concentrates is itself a mosaic of perpetually interacting forms."

I use the word constellation with a nod to Benjamin, Adorno and McLuhan among others, then, but I suggest it's different here in new media – how? Because, crucially, this particular constellation has been coded, because the linking structure is saved in computer memory, memory beyond my own, I can return to it, and share it with you, I believe, if only I can find better ways of transferring this cat's cradle to your hands, without this act of communication collapsing into a puddle of string, or html, or even 2-dimensional Storyspace.

Ten years on, we're already better at reading new shapes and we are learning to read archives in new ways. It's hard to imagine anyone now, for example, who would need assistance in following a web-based link. But finding the right kind of interface for the kind of thought sculptures we make as theorists continues to present challenges. My current work in augmented reality interfaces and storyworlds, while seemingly a long way away from *Building Feminist Theory*, has actually drawn me back to this early work, to re-examine its possibilities and poetics. I'm working to port it back from the html into a form more suggestive of the constellation I'd like to share… maybe add a dash more pleasure and give up a bit of jouissance. I'm working with Thinkmap software – a commercial solution that allows for the construction of a dynamic 3-dimensional interface to the archive I've built, to arrive at an interface that will at least suggest to readers a sense of breadth, the argument I make for the necessity of a shifting conceptual center to the work, and a way of navigating the piece that invites an understanding of the arguments about interrelationships I try to make. I'm also

thinking of porting the whole experience to augmented reality, in the end… a full body thinkmap interface where 1400 nodes can hang like stars, sewn together with virtual string, ready for walk-through.

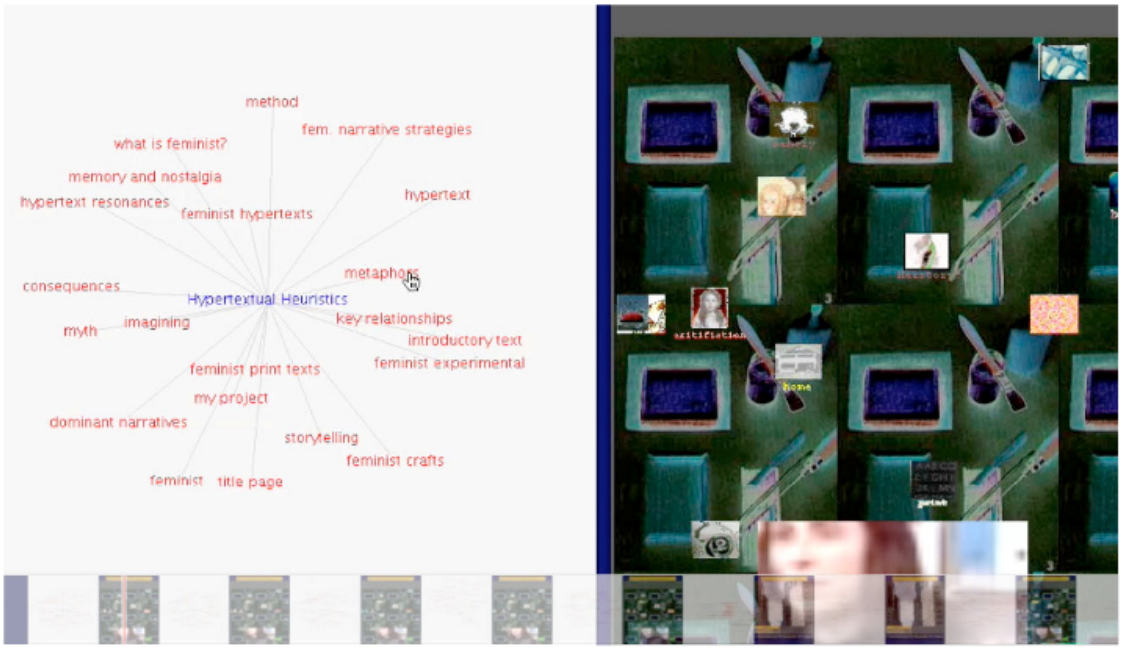

Figure 3: Thinkmap screenshot

What is at stake more generally with respect to knowledge and theory-production here? Which of our interfaces are successes? Failures? For early hypertext practitioner Michael Joyce the litmus test of any hypertext was whether it allowed its users to look at knowledge in new ways.[8] To that I would simply add that working mindfully at the interface gives us new tools to build knowledge, too, to craft knowledge in new ways. Even as my own early work risked intelligibility, this labour was well worth the risk.

Endnotes

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[1] Ley, Jennifer. "So You Thought You Understood Hypertext?" *Riding the Meridian* 1.2 (1999).

[2] Burnett, Kathleen. "Toward a Theory of Hypertextual Design." *Postmodern Culture* 3.2 (1993).

[3] Diamond, Sara. "Gender and Technology," *Variant* 16, Winter/Spring (1994): 65.

[4] Greco, Diane. Comments made during Hypertext 2001, Århus, Denmark, August 14-18th, 2001.

[5] Manovich, Lev. "Database as a Symbolic Form," *Millennium Film Journal* No. 34 (Fall 1999).

[6] Benjamin, Walter. "On the Image of Proust" in *Walter Benjamin: Selected Writings, Volume 2, part 1, 1927-1930* Edited by Michael W. Jennings, Howard Eiland, and Gary Smith.

[7] Adorno, Theodore. *Negative Dialectics*. Continuum, 1973: 162-163.

[8] Joyce, Michael. "Siren Shapes: Exploratory and Constructive Hypertexts," Michael Joyce, "Siren Shapes: Exploratory and Constructive Hypertext," *Academic Computing* 3: 12.