WHAT HYPERTEXTS CAN DO THAT PRINT NARRATIVES CANNOT

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> I only wish I could write with both hands so as not to forget
> one thing while I am saying another.
> - Saint Teresa, *The Complete Works of St. Teresa of Jesus*.
> (quoted in Bolter 21)

When people ask me what I write about, I tell them "interactive narratives." This particular bit of information is usually greeted with furrowed brows, so I try to clarify things just a tad: "Narratives written in hypertext," I add and wait for recognition to dawn. Most people, it turns out, have *heard* of hypertext–they just don't know what it is. "It's non-linear writing," I generally begin. The responses to this range from the equally-mystified-but-I've-had-enough-now-thank-you, "Oh," accompanied by a bob of the head (and a rapid shuffle safely out of conversational distance) to the demand, "But how can we read or write non-sequentially? Isn't language itself by definition both sequential and linear?" From here, I find myself embarking on a lengthy monologue, and what often turns out to be a thankless and somewhat hopeless enterprise–to attempt to describe something that exists in virtual, three-dimensional space to readers accustomed to uni-dimensional pages, to conjure up for a vision of a text which need not necessarily be read sequentially to readers unable to conceive of reading any other way, to talk about narratives which physically read differently every time you turn to them. And I end up directing all these explanations, to make matters still more bewildering, to readers accustomed to books frozen in static, unchanging type contained between two covers.

How can we best describe hypertexts–and their fictional counterpart, interactive narratives –to print readers? We can begin, perhaps, with Ted Nelson's definition–"non-sequential writing with reader-controlled links." (Nelson 1) Not a bad source, considering Nelson both created the concept and coined the term itself and then attempted to picture what such an environment might do to the shape of the short story or novel (Bolter 105). Or, if we have immediate access to a Macintosh, I can produce some interactive narratives (such as Michael Joyce's *Afternoon* and *WOE*, and Stuart Moulthrop's *Forking Paths* and *Victory Garden)* all which have appeared in recent years and, then, set the skeptical reader loose amid any of their spaces. But readers unaccustomed to hypertext have difficulty orienting themselves in what is undoubtedly a new and alien space, and a preliminary brush with this "non-linear" form of reading can be at least as confusing as it is illuminating.

To know what hypertext is, as print readers, we need to understand it in light of what it isn't and how it differs from the printed word. And, since interactive narratives represent,

arguably, the most "revolutionary" form of hypertexts–as examples of hypertexts which most directly challenge our definitions of what the act of reading entails–they also provide the best fodder for defining what hypertexts *do* and, further, of what they *do* that print narratives cannot.

> "Begin at the beginning," the King said gravely, "then proceed
> straight through to the end. Then stop."
> –*Alice in Wonderland*

Readers of print narratives begin reading where print begins on the first page of the book, story, or article and proceed straight through the text to the end. Although reading print narratives involves readers' thumbing back through the pages to clarify an impression or recall a name and a continual looking forward or predicting what will happen next (Smith 76-77; Slatin 871), we nonetheless move more or less straightforwardly through *Pride and Prejudice* or *Huckleberry Finn*. Although it is possible to begin reading *The Great Gatsby* at the point where Daisy and Gatsby are reunited for the first time in Nick's living room, the reader who begins reading a print narrative *in medias res* is placed in a situation somewhat analogous to a filmgoer who has arrived in the darkened cinema forty minutes into a feature. Placed in these circumstances, we struggle merely to establish who is who and understand just what is taking place–and we bring to the text none of the opinions, expectations and anticipations which would otherwise be available to us had we followed the narrative from its beginning. The reader's gradual progression from beginning to end follows a carefully scripted route which ensures that "the reader does indeed get from the beginning to the end in the way the writer wants him or her to get there" (Slatin 871).

Most hypertext narratives have no single beginning. In Stuart Moulthrop's *Victory Garden*, readers are confronted with no fewer than three lists which seem, at first glance, to represent a Table of Contents: "Places to Be," "Paths to Explore," and "Paths to Deplore." Unlike a table of contents, however, these lists do not represent a hierarchical map of the narrative, providing readers with a preview of the topics they will explore during their reading and the order in which they will experience them (Bolter 22). The first **place** (a segment of text which appears in its own window) or **path** (a sequence of **places** established by the author) in the list has no priority over any of the others–readers will not necessarily encounter it first and need not encounter it at all in the course of their reading. Each of the words or phrases, instead, acts as a contact point for readers entering the narrative. By choosing an intriguing word or particularly interesting phrase, readers find themselves launched on one of the many **paths** through the text. In print narratives, reading the table of contents–if there is one–is generally irrelevant to our experience of the narrative itself: our reading experience begins with the first words of the narrative and is

completed by the last words on the last page. In *Victory Garden*, however, readers are unable to begin reading without browsing through the lists of **places** and **path***s* and then selecting one. *Victory Garden* requires its readers to begin making decisions about the text–where their interests lie and which pathways through the text seem most likely to satisfy them–illustrating one of the many paradoxes apparent in this fledgling genre of hypertext fiction.
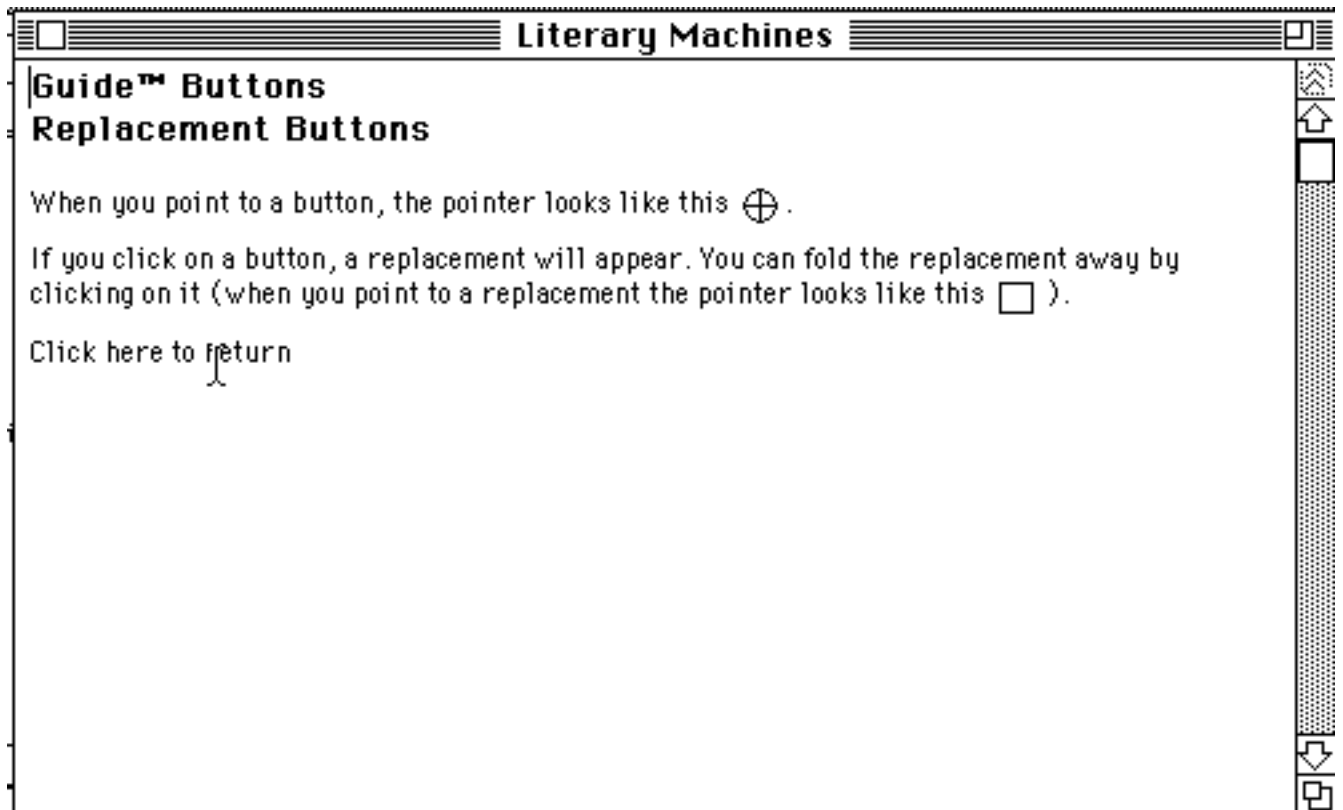
Although readers can never "hold" a hypertext book or dog-ear its pages physically, they, nonetheless, actually interact with the text far more tangibly than do readers of print novels. A piece of hypertext fiction is inscribed in digitally encoded information on a floppy disk; like a CD, the disk gives no indication of the length of the material within it or any possible divisions its readers may discover. Readers of *The Great Gatsby* know just how many pages it takes for them to experience Fitzgerald's novel in its entirety. Likewise, anyone picking up a vinyl record album knows whether Samuel Barber's *Adagio for Strings* or the Rolling Stones' "Can't You Hear Me Knocking" is a long piece of music or a relatively brief one: the distance between the thick, smooth bands separating one set of densely cut grooves from another is generally a good indicator of the duration of a piece of music. Readers of *Afternoon*, on the other hand, don't know what the hypertext contains until they load it into their Macintosh or PC–the narrative remains intangible (and invisible) until they encounter it on their computer monitors. But in the physical intangibility of interactive narratives lies one of the keys to their flexibility. Because the narrative is not fixed and locked into place in typeset lines, readers can interact with the story in what they choose to read. Like one of the popular "Build Your Own Adventure" stories, hypertext narratives encourage readers to shape the outcomes of the stories they read by the decisions they make in the reading process. And, since hypertexts remain physically intangible and lack the clearly defined, singular beginnings and endings of conventional print books, the possibilities for creating one's "own" story from a hypertext narrative are considerably greater than they are from reading a print "Build Your Own..." narrative, which has highly visible beginnings, endings, and limitations.

Like print books, hypertexts come in all different sizes. At one end of the spectrum, large hypertexts are represented by the sprawling network of materials George Landow created at Brown University for a course on post-colonial fiction, with the hypertext including everything from reference material on literary technique to maps of the British Empire to the fictional works themselves–all of which ran on powerful workstations (Landow 47). At the other end of the scale, small hypertexts represented by the likes of Michael Joyce's *Afternoon*, fit onto a single 800K floppy disk and runs on a modest Macintosh Plus. To read hypertexts, readers generally load the hypertext onto a PC or Macintosh hard disk and begin moving through the text by clicking directional arrows or by clicking on words in the text which have been flagged–either by a change in the shape of the cursor as it passes over them or by boxes which can appear around the word when a certain combination of keys on the keyboard is selected. Newspapers, journals, and

magazines are presented to us in formats which control how readers move through its pages: academic journals and magazines such as *The New Yorker*, for instance, nearly always present their articles in continuous chunks. Apart from skipping pages taken up by full page ads, readers never need to turn to a page 60 or 150 pages away to continue reading an article they've begun, as they do when they open, say, *The Washington Post* or *Cosmopolitan*. Similarly, hypertexts can be presented in a variety of formats, depending on the application or program in which they are produced. Apple's *HyperCard*, for example, uses the familiar metaphor of 3" x 5" notecards to present text and graphics, permiting readers using Apple Macintoshes to move forward or backward through the stack of cards (which contain about a third of a page of text or graphics) by clicking on directional arrows on the bottom of each card. Readers can also move between certain cards or stacks of cards by selecting words in the text which are highlighted when readers press the option and command keys on the keyboard at the same time. Since no standard format or official protocol exists establishing choices readers have for moving through hypertexts, hypertext narratives–such as John McDaid's *Uncle Buddy's Phantom Funhouse*, below–incorporate instructions into the contents of the hypertext.
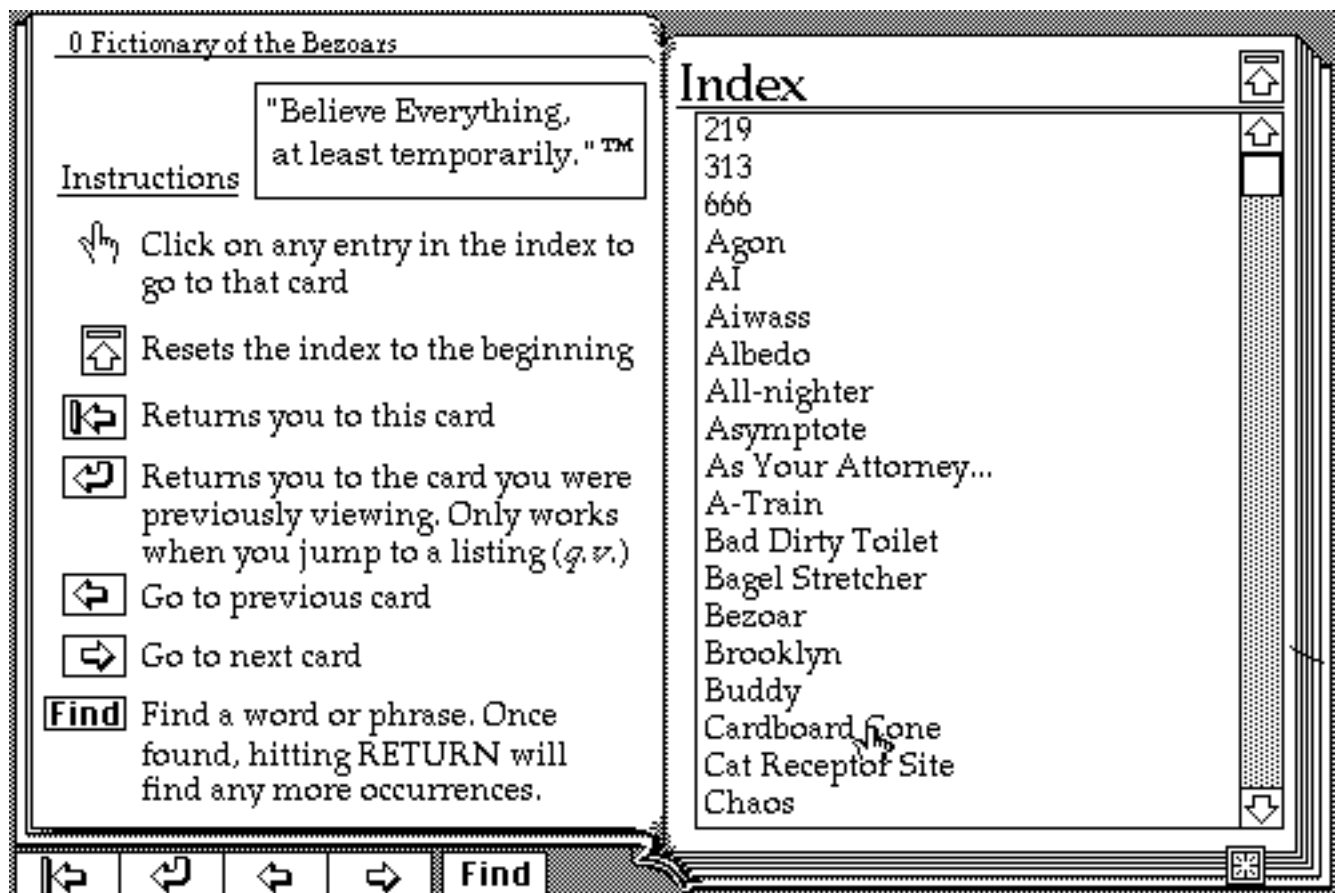
OWL's *Guide* –available for both Macintosh and PC computers–alerts readers to connections or "jumping off" places where they may leave the text before them and leap into another, related section by displaying changes in the cursor's shape as it passes over these words. Readers of Ted Nelson's *Literary Machines* encounter at least two such changes in the shape of their cursor, as the text of *Literary Machines* explains below.

≡ Literary Machines ≡

Guide™ Buttons
Replacement Buttons

When you point to a button, the pointer looks like this ⊕ .

If you click on a button, a replacement will appear. You can fold the replacement away by clicking on it (when you point to a replacement the pointer looks like this ☐).

Click here to return

Storyspace, another Macintosh application, uses a series of buttons (visible at the bottom of the computer screen) which provide a series of movement choices. Options include selecting a **path** to follow from a menu of **paths** (or **places** in the text to visit, as in *Uncle Buddy's Phantom Funhouse*, above), selecting a word in the written text they are currently reading (for example, one of the words in the segment of *Literary Machines*, above), or viewing the structure of the narrative on the computer screen as a series of boxes, representing **places**–sometimes containing other **places**–connected by arrows, representing **paths**. Readers can move between **places** and along **paths** simply by clicking on **place**), as in Michael Joyce's *WOE*, below.
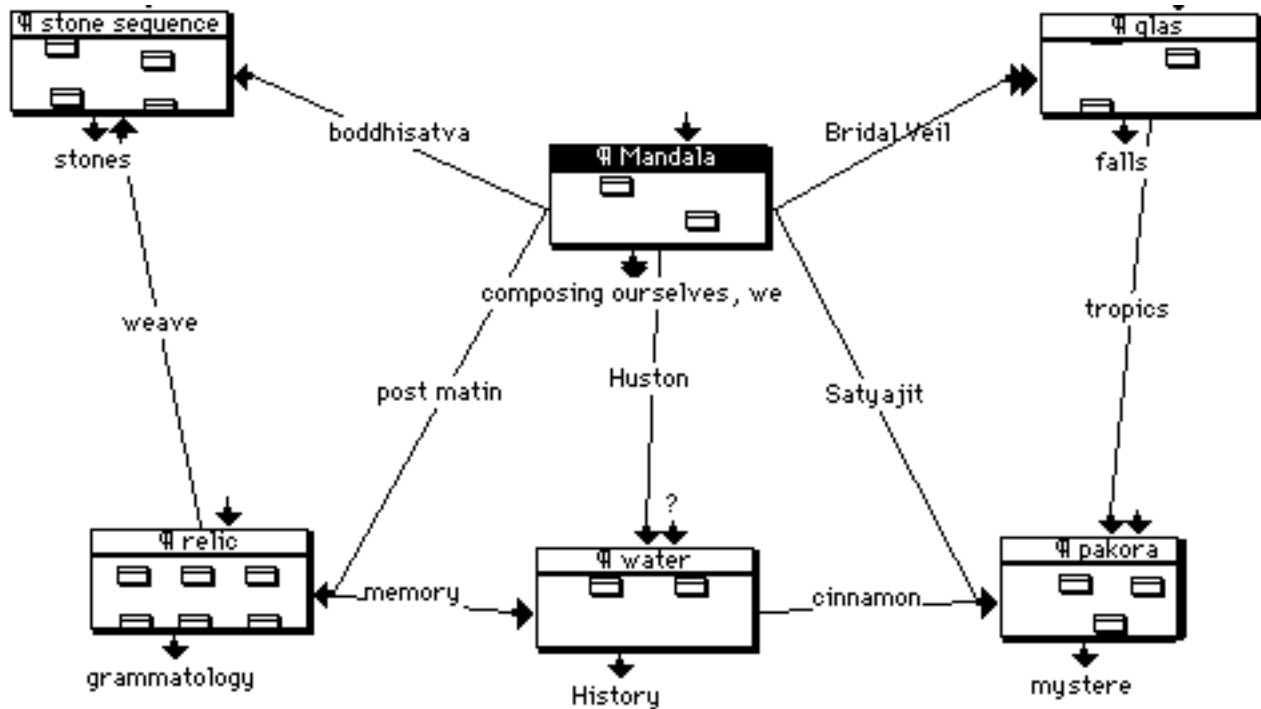
Unlike either *HyperCard* or *Guide*, however, *Storyspace* does not make these **word links** visible to readers by changes in cursor shape (as with *Guide* texts) or highlighting around the word (as in *HyperCard* texts). Readers clicking on a word cannot always be certain whether they have selected a **word link** or not, since *Storyspace* enables readers to move by **default**–an invisible connection which readers can trigger that enables them to move through the text without making any distinct choices at all.

Arriving at Closure

If reading interactive narratives presents readers with a unique set of challenges in simply beginning reading them, they challenge readers perhaps most vigorously in their lack of singular, definitive closure: interactive narratives have no single, physical *ending* in the way that print narratives do. Moulthrop's *Victory Garden* has six different points of closure, while Joyce's *Afternoon* has five or more, depending on the order in which the reader explores the narrative space, since the sequence in which **places** are read determines if a reader can move beyond certain decision points in the narrative. Deciding when the narrative has finished becomes a function of readers deciding when they have had enough (Slatin 874), or of readers understanding the story as a structure that can "embrace contradictory outcomes" (Bolter 124). Or, as one student reader of interactive narratives realized, after he completed as series of readings of *Afternoon*:

> We have spent our whole lives reading stories for some kind of end, some sort of completion or goal that is reached by the characters in the story....I realized this goal is not actually reached by the character, rather it is reached by our own selves. ...[It] occurs when we have decided for ourselves that we can put down the story and be content with our interpretation of it. When we feel satisfied that we have gotten enough from the story, we are complete. (Kaplan and Moulthrop 16)

This particular sense of an ending is, however, by no means unique to interactive narratives. Although print narratives physically end, literary conventions also dictate that endings satisfy or in some way reply to the expectations raised during the course of the narrative. As psycholinguists studying print stories have noted,

> episodes end when the desired state of change occurs or clearly fails. In most stories, goals are satisfied and when goal satisfaction occurs, the protagonist engages in no further action. (Trabasso et al. 87)

In Moulthrop's interactive fantasy *Forking Paths* (based on the Jorge Luis Borges short story "The Garden of Forking Paths,") readers can experience no fewer than twelve instances of what we might call "points of closure"–places where the projected goals of the protagonist involved in a particular narrative strand are satisfied, or where the tensions or conflicts which have given rise to the narrative strand are resolved.

The multiplicity of narrative strands, plethora of points of closure and, also, the increased difficulty of reading interactive narratives combine to stretch the time required to read an interactive short story of 500 *nodes* (or *places* which occupy a single window) to as long as seventy hours. Compare this with the length of time required for the average reader to consume a three hundred page novel–from six to twelve hours (Ziegfeld 363). The relatively few interactive narratives already in existence all feature dozens of narrative strands which either feed into other strands, crisscross them, loop endlessly, or arrive at points of closure, with the reading of each strand approximating the reading of a chapter. Unlike print narratives, where each chapter builds upon the preceding one and leads to a single, determinate conclusion, the narrative strands in hypertexts can lead to numerous points of closure without satisfying the reader–or the reader can be satisfied without necessarily reaching any point of closure at all.

From Jean-Paul Sartre's declaration that reading is nothing more or less than "directed creation" (1061) through to the writings of present-day proponents of reader-response theory, the concept of reading as a passive activity has become theoretically *passé*, an untenable stance held only by the unenlightened. Readers are now seen as breathing life into the texts they read, and reifying, or concretizing their possibilities–even receiving the text by composing it, in a creative effort nearly tantamount to that exerted by the author, as Roland Barthes argues in "The Death of the Author":

> ...a text is made of multiple writings, drawn from many cultures and entering into mutual relations of dialogue, parody, contestation, but there is one place where this multiplicity is focused and that place is the reader, not... the author. ...[T]o give writing its future... the birth of the reader must be at the cost of the death of the Author. (148)

Yet reading print narratives is far from being a *literally* interactive activity, if we examine existing definitions of interactivity. Media theorist Andy Lippman has defined "interactivity" as "mutual and simultaneous activity on the part of two participants, usually working toward some goal, but not necessarily" (Brand 46). To satisfy the conditions for "mutual and simultaneous activity," he goes on to outline the additional components which all "pure" interactions must have:

1) **interruptibility** – participants should be able to trade roles during the interaction, as speakers do in conversation, and not simply take turns in occupying the more active or more passive roles in the interaction;

2) **fine granularity** – participants should not have to wait for the "end" of something to interact, with true interactivity being interruptible at the granularity level of a single word;

3) **graceful degradation** – participants can still continue the interaction without interruption even if non sequiturs or unanswerable queries or requests enter into it;

4) **limited look-ahead** – goals and outcomes in the interaction cannot be completely pre-determined at the outset of the activity by either of the two parties, with the interaction created "on the fly," or coming into being only at the moment gestures, words or actions are expressed;

5) **an absence of a single, clear-cut default path or action** – participants in the interaction cannot have definite recourse to a single or "default" path, one available to them throughout the interaction without their having to make any active decisions for action;

6) **the impression of an infinite database** – actors in an interaction need to be able to make decisions and take action from a wide range of seemingly endless possibilities (Brand 46-49).

A typical conversation between two people perfectly represents this true interactivity. When we converse, we interrupt each other (interruptibility)–often in the midst of a word or phrase (fine granularity)–and we ask each other questions to which our partner may not have answers or we introduce non sequiturs (graceful degradation). We can refuse to be cast in the cynic's or idealist's role as we engage in this informal, conversational debate (no default), and we may change subjects abruptly or follow an unforeseen shift in the direction of the conversation (limited look-ahead). And, unless we find ourselves in the company of a truly veteran bore, we seldom operate under the impression that our database (the store of subjects and material from which we draw shared opinions, emotions and ideas that form the conversation's basis) is anything but unlimited.

But according to this model of interaction, the average reader poring over *Jane Eyre* or *Ulysses* is placed in the position of someone listening to a monologue. We can interrupt only by closing the book or allowing our attention to wander–so the granularity of our interruption is the entire book itself. There is <u>ONLY</u> one path through all but the most experimental of print narratives. And if I try to focus only on the references to material wealth in *The Great Gatsby*, my interaction with the novel will not simply degrade decidedly ungracefully–it will very likely collapse into mere incomprehension. My look-ahead is completely determinate and limited: if I become impatient with the unfolding of Agatha Christie's narrative *Who Killed Roger Ackroyd?* I can simply skip forward to the end and find out who really bumped off Roger Ackroyd, and no matter where I pause to skip ahead–whether I stop at chapter 6 or 26, the murderer will always be the narrator. And, of course, my "database" will always be physically confined to the words in print enclosed between two covers, even if the significance of the text and the repertoire of interpretive strategies available to me were to embrace the entire, existing literary canon.

Conversely, when readers open Moulthrop's *Victory Garden*, they are obliged to literally interact before they actually can enter into the narrative. The first three **places** they encounter are lists of other **places** and **paths** from which they must make a choice to begin navigating through the narratives in the hypertext. If they have not made a selection after they reach the last of the three **places**, the sequence loops, re-presenting them with the three **places** again in a loop from which readers can escape only by making active selections from any of the lists. Since most **places** feature text which has individual words or phrases linked to other places, most interactive narratives are interruptible at the end of a **place**. This can be as brief as a single word or as long as several paragraphs, and can exist at the level of words or phrases in the text–although the words available as "interruptions" are chosen in advance by the author of the interactive narrative and not

the reader. If this is "interruptibility," it is more like scripted interruptibility–which seems the inverse of the brand of interruptibility which is the principal hallmark of literal interactivity, according to Lippman's definition.

Many interactive narratives can also provide an overview of the structure of the narrative itself [as in the structure of Joyce's *WOE*, below] and, consequently, of the potential interactions awaiting readers as they make their way through the narrative space which, although represented as a flat, schematic image on the computer screen, is more like a holographic image one can move around or even through. Readers can open boxes and move through each of the vertical levels contained in the text, or explore the **links** between portions of the text, or skip laterally through it the text in a sequence they determine themselves, outside the author-determined **links**. In some instances, an overview of the structure of the hypertext is crucial to an understanding of the context surrounding particular places in the narrative. For example, in Joyce's interactive narrative *WOE*, a story about, among other things, the couplings and uncouplings of the adulterous foursome, I discover that all the *places* in the narrative which feature this story are connected by a **path** named "Relic" and labelled "a story" on the map of *WOE* [see the overview of part of *WOE*, below]. By selecting "Relic" from the path menu each time it appears, I find myself able to continue exploring this particular narrative.
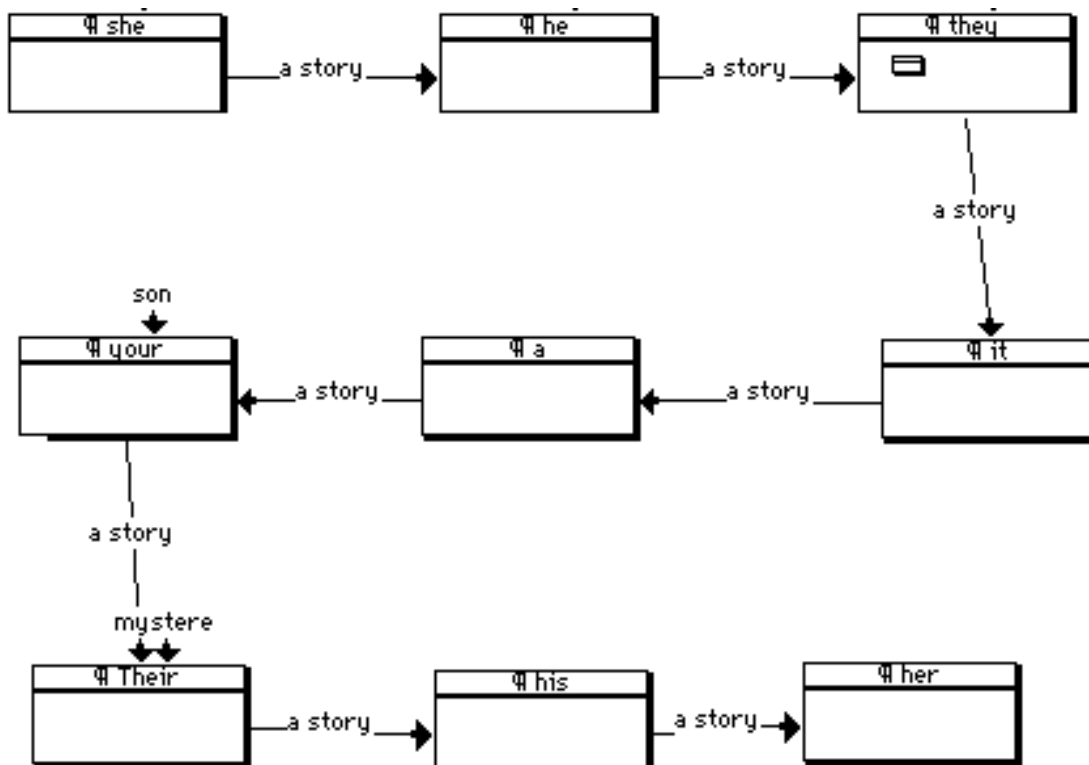
When I encounter the **place** called "We" (not included in the detail, above), I read text that concludes "a happy ending," despite a heavy sense of foreboding which seems to hang over the characters. When my desperate search for any further **places** on the "Relic" strand proves fruitless and subsequent browsing yields no further trace of the foursome in "Relic", I quickly switch to the *Storyspace* cognitive map and find "Relic" at last: a chain of places tidily laid out within a single, confining space and connected by path arrows labelled "a story" – which ends with the **place** "We." My quest ends and another replaces it. First, the schematic of the text provides me with a sense of the overall structure of the hypertext as what Bolter has called a "structure of structures" (144). Then, like a topographic map of an unfamiliar island, *WOE* 's cognitive map somewhat eases the limitations of what Lippman calls my "look-ahead," by providing me with vague suggestions of which directions might prove the most fruitful for further, dedicated exploration.

Theorists call the space in which hypertexts and interactive narratives exist "virtual" because, although one cannot physically touch the space or move around within it, the place in which the interaction between readers and text occurs can still be classified as three-dimensional, since its length, depth, and height can be explored through the use of software tools. The concept of the text occupying a "space," is not, however, unique to hypertext or interactive narratives. As Bolter argues, a sub-genre that he calls "topographic" writing exists in print–works by writers such as Sterne, James Joyce, Borges, and Cortazar who create narratives which explore, exploit, and ultimately chafe at the confines of printed space–all, created, not coincidentally, by notoriously "difficult" writers (143). What makes them difficult writers, he insists, is their self-conscious absorption with the act of writing itself and with the difficult relationship between narrator, text, and reader, since these printed works all work strenuously–and ultimately unsuccessfully–against the medium in which they were conceived.

This is largely because spatial relations in print narratives–or the "spatial form" lauded by Joseph Frank and his critical successors–are very much like spatial relations in the cinema, where we see three-dimensions represented and projected on a flat, one-dimensional plane (Chatman 117). We understand that the placement of the objects, characters and events represented in print narratives has significance in terms of our understanding of the entire work, but this understanding is not necessary to our ability to proceed through the text itself. Upon seeing his first film, Harry Belafonte once reported, he and the other children in the humid island cinema ran out into the alleyway behind the screen in search of the police car which had raced from one side of the screen

to the other (Douglas, "Understanding" 124). Our awareness of print space containing two potential dimensions and of cinema, three dimensions projected onto one, is intrinsic to our reading experiences of both media (Smitten 19-20; Mitchell 284). In hypertext narratives, however, this awareness is inextricably welded to our "reading" of the text itself, since the burden of interactivity and the continual necessity to choose directions for movement never allows us to forget that we are reading by navigating through a "space" which contains length, depth, and height–not to mention other spaces within it.

As Lanham has observed, digital media–such as digitized films and interactive narratives–have no "final cut" (269). This means they have no singular, definitive beginnings, middles or endings, and no single, definite reading order is given priority over the others which exist alongside it. There is also no single story and, contrary to our expectations based on reading print narratives, readings do not provide varying versions of this story or collection of stories. As Bolter has argued, each reading generates or determines the story as it proceeds:

> there is no story at all; there are only readings. ...the story is the sum of all its readings... Each reading is a different turning within a universe of paths set up by the author. (124-5)

In Joyce's *Afternoon,* some readings represent alternative voices or perspectives on the narrative, with the changes in narrative perspective made separate and discrete by electronic space. When Faulkner similarly attempted in print to separate the different perspectives in *The Sound and the Fury* by indicating to his publisher that he wanted them marked by different ink colors, Random House shuddered at the cost and refused (Ziegfeld 352). In Joyce's *WOE,* some readings represent metafictional commentary on the narrative and its origins in the author's experience; in Moulthrop's*Victory Garden*, narrative strands involving political developments during the Nixon, Reagan, and Bush eras parallel and crisscross narratives following a few weeks in nine characters' lives. The readings themselves may constitute mutually exclusive representations of the same set of circumstances, but with radically different outcomes, as readers discover in *Afternoon.*

Readers engaging interactive narratives also have the option of limiting their textual experience to the pursuit of narrative strands which intrigue them. If I want to pad after the romance burgeoning between Nick and Jordan in *The Great Gatsby*, I have to read or at least browse through or skim the entire novel in order to pursue the romance which mirrors Gatsby's involvement with Daisy. And, of course, this narrative strand, like the episode narrated by Jordan, is but a fragment of the total novel–a particle which is comprehensible and meaningful only in the

context of the novel as a whole. On the other hand, I can simply pursue the tortuous relationships between the unfaithful wives and husbands of *WOE*. In some instances, focussing on the stories and strands of particular interest may be relatively easy, with the options for navigation through the narrative made accessible through lists, as in *Victory Garden* or via maps which represent the placement of all hypertext connections and pathways and enable readers to arrive at a **place** on the map simply by pointing at it with a cursor. At other times, however, following a single narrative strand can involve a complicated process of selecting **paths** by trial and error or by determining which **path** or **place** names document certain narrative episodes and strands. Regardless of whether the process of following the chosen narrative strand is easy or incredibly difficult, readers of interactive narratives can coherently experience these texts in a variety of different orders and sequences without doing violence to the narratives, stories and meaning of the hypertext as a whole.

Most obviously, interactive narratives embrace a far wider, and less determinate, spectrum of meanings than print narratives because few readers will experience identical readings of texts that can have as many as 900 connections between 500 $places$, which, in existing electronic narratives, are as brief as a single word or as long as a page of text (Ziegfeld 364; Douglas, "Reading and Writing" 56). The more **links** (or decision-points) which each reader must confront in navigating through the narrative, the less singular and determinate the meaning of the hypertext narrative as a whole, since no single **path** through the text has priority over all others.

Yet the indeterminacy of interactive narratives is also much farther reaching than this. In most hypertexts, a majority of the **places** will appear in more than one context, as a point along two, three, or more paths. *Hypertext*'s metaphor is, after all, not a flowchart but a web which acknowledges the myriad of associative, syllogistic, sequential, and metatextual connections between words, phrases, paragraphs, and episodes (Bolter 22-23). To be comprehensible, print paragraphs need only to build off the paragraphs which have preceded them and prepare the reader for paragraphs to come. Print narratives use paragraphs and transitions to create a sequence that both directs the reader's experience of the material and somehow seems like the authoritive and, even, the ONLY possible sequence for structuring the material (Slatin 872). But hypertext narratives seem to work in the opposite direction. Where print paragraphs and transitions ideally close off alternative directions and work to eliminate any suggestion of other potential sequences which might have been created from the same material, hypertext **places** must, by their very nature, prove comprehensible in more than one sequence or order. Instead of closing off any suggestion of alternative orders or perspectives, the text contained in a hypertext **place** must appear sufficiently open-ended to provide links to other **places** in the narrative. This fosters an

additional level of indeterminacy generally rare in print narrative–although it may appear in avant garde and experimental forms of print narratives.

       At present, existing interactive narratives somewhat resemble two of the divergent modes explored in avant garde or experimental fiction: what we might call "narratives of multiplicity" and "mosaic narratives." Mosaic print narratives such as Durrell's*The Alexandria Quartet*, Cortazar's *Hopscotch* and Barthes'*The Pleasure of the Text* consist of narrative fragments, conflicting perspectives, interruptions, and ellipses which impel their readers to painstakingly piece together a sense of the narrative, with its full meaning apparent only when viewed as an assembled mosaic, a structure embracing all its fragments.

       At a local level, a mosaic narrative such as *The Alexandria Quartet* presents its readers with more determinacy than *The Pleasure of the Text* . The former consists of a set of four novels which provide a set of concentric perspectives on a single series of events: as readers begin with "Justine" and move inward to "Clea," the perspective on events becomes increasingly comprehensive and more thoroughly informed. Each of the four novels can stand as a discrete, independent text on its own and each seems perfectly conventional and self-contained when read separately. It is only when readers engage all four novels as versions and rewritings of the same set of events that the ambiguities, ellipses, and indeterminacy of events throughout the text become completely and glaringly apparent.

       Durrell's *Alexandria Quartet* presents its readers with the discrete, separate, and entirely self-contained narrative perspectives that they might encounter in the likes of Moulthrop's *Victory Garden* or Joyce's *WOE* or *Afternoon*. The protagonist in *Afternoon*, Peter, shares lunch with his employer, Wert in a scenario which can fit neatly into any number of the narrative strands which make up *Afternoon*'s intricate narrative web:

> He asks slowly, savoring the question, dragging it out
> devilishly, meeting my eyes.
> <How ...would you feel if I slept with your ex-wife?>
> It is foolish. She detests young men ("Asks").

Because Joyce has structured his hypertext narrative so that readers can encounter certain **nodes** or **places** only after they have visited a sequence of other **nodes** (or traversed certain **paths**), readers encounter this particular conversation in four highly determinate contexts. In one narrative strand, the **place** "Asks", above, crops up amid Wert's clowning around over lunch, emphasizing his immaturity around women. In another, in "Asks" Wert seems to pose the question playfully to

Peter, to distract him from his concern over the whereabouts of his missing son and estranged wife, whom he believes may have been injured in a car accident earlier that day. Encountered in yet another context, the same passage occurs in the context of Peter's affair with a fellow employee, Nausicaa, and Peter appeares to see Wert's question as evidence of his employer's jealousy over their involvement. Later, the lunch-date and conversation in "Asks" re-appear after a narrative strand couched in Nausicaa's own perspective, which reveals that she is sleeping with _both_ Wert and Peter, making Wert's query seem something of a game of cat's paw. "I'm sleeping with your lover," Wert seems to be thinking, so he follows the line of thought to a position he perceives as more daring: "What if I were sleeping with your ex-wife?" But if readers reach a **place** called "White Afternoon," having visited a fairly detailed series of **places**, they discover that Wert and Peter's ex-wife, Lisa, have been seen together by Peter himself, although Peter cannot be certain that they are necessarily involved with each other. When the lunch time conversation re-appears, after this last revelation, Wert's query is a very real question indeed.

What is particularly striking about *Afternoon* is that the passage "Asks" is identical each time it appears. Although the context may alter its meaning drastically with each new appearance, the language itself is unaltered – unlike Durrell's quartet of novels, where he can only manipulate our perspective on events by a combination of ellipsis and supplement. Yet the language itself is not indeterminate: readers seeking a precedent for the "he," "my," and "she" which occur in this passage need look no further than the preceding or succeeding **places**. In all the contexts in which this **place** appears, it is clear that the "he" posing the question is Wert, the ex-wife or "she" in question is Lisa and the "you" who thinks the question is foolish is Peter.

The other form of print narratives which thrive on indeterminacy–narratives of multiplicity–has also chafed at the physical confines of printed space which have prevented narratives from representing multiple, mutually exclusive representations of a single set of events. For example, Robert Coover's "The Babysitter" and "The Elevator" from *Pricksongs and Descants*, Borges' "The Garden of Forking Paths," and John Fowles' *French Lieutenant's Woman* all explore multiplicity and simultaneity. One of the most radically experimental examples of this genre, Coover's "The Babysitter," features 105 narrative segments which begin as nine separate and distinct narrative strands framed from nine different perspectives, becoming increasingly less distinguishable from one another as the narrative proceeds. In the narrative's course, mutually exclusive versions of narrative events unfold one after the other and even clearly feed into each other.

The passages depicting husband Harry's first sexual musings on the babysitter and wife Dolly's bitter thoughts about marriage occur sequentially in time, united by Dolly's question, "What do you think of our babysitter?" which appears in both segments. But later in the narrative,

the babysitter screams after discovering herself watched from a window–a passage which may belong equally to boyfriend Jack's fantasies about her or to Harry's idylls of seducing her. And in the segment which immediately follows it, the babysitter's scream becomes an indignant shriek as the children she is ostensibly supervising whisk the bath towell away from her wet body as she leaves the bath tub to answer a phone call. The phrase "she screams" is identical in both passages, but the context and narrative strands in which it is embedded are mutually exclusive representations of a single moment in time. In the narrative universe of "The Babysitter," all possibilities are realized, with actions, thoughts, idylls, and snatches of television all offering an equal, textual tangibility.

In the end, however, all of the perspectives converge in two episodes. One neatly resolves the wild and mutually exclusive seduction, rape, and murder scenes by depicting the babysitter waking up from a dream amid a setting so orderly that even the Tucker family dishes have been washed and put away. The other represents a conflation of all the narrative strands in a single, final wild conclusion: the Tucker children are dead; the babysitter is a drowned corpse in the bathtub; Mr. Tucker has fled the scene and Dolly cannot get out of her girdle (239). The wild improbability and satirical tone of the last segment and the suggestion, in the penultimate segment, that all of the preceding segments belonged to one vast, distended dream also tends to undermine the "reality" and priority of any single narrative segment or narrative strand. When print narratives attempt to resist print's physicality by increasing the number of stories, narrative strands and potential points of closure – as is the case with the likes of "The Babysitter," as well as narratives such as Sterne's *Tristram Shandy*, or Borges' "The Garden of Forking Paths"–the medium inevitably resists, making the reading experience and the significance of the narrative itself more a meditation on the confines of print space than anything else (Bolter 132-139).

In contrast, in *Afternoon*, car accidents occur, seem to have occurred, may possible have occurred, or simply do not happen. The narrator, Peter, has an affair with Nausicaa but also does not have an affair. His employer, Wert, sleeps with Peter's estranged wife; is having an affair with Nausicaa; may have had an affair with Peter's ex-wife, Lisa–or none of the above. Peter loses his son, fears him dead or seriously injured, and begins a frenetic search for him in some readings of *Afternoon*. In others, he simply goes about his business. "The story," Bolter has noted, "does and does not end" (143). There is a challenge embodied in this highly indeterminate narrative which embodies all its possibilities without giving priority to any one of them, a requirement here that we learn to read multiply .

At the moment of pushing narratives beyond the confines and conventions of print, interactive narratives such as *Afternoon* and *Forking Paths* present readers with a barrage of new and potentially bewildering questions and tasks which promise to re-define our concept of the reader's role. Only further research can answer what do readers do when confronted with

narratives without endings or with multiple, contradictory endings, how narratives can seem to build sequences from gaps, and how readers traverse intricate networks, suspended in virtual, three-dimensional space. For the moment, however, we can only read hypertexts as print readers tentatively exploring an as-yet unfamiliar space, or as explorers encountering what appears to be a brave, new world which promises both writers and readers liberties undreamed of within the confines of print.

BIBLIOGRAPHY

Barber, Samuel. *Adagio for Strings*. Cond. Leonard Bernstein. Los Angeles Philarharmonic. Deutsche Grammophon, 427 806-2, 1983.

Barthes, Roland. "The Death of the Author," in *Image, Music, Text*. trans. Stephen Heath. New York: Hill and Wang, 1977.

---------------------------. *The Pleasure of the Text*. trans. Richard Miller. New York: Hill and Wang, 1975.

Bolter, Jay David. *Writing Space: the Computer, Hypertext and the History of Writing*. Hillsdale,   NJ: Lawrence Erlbaum, 1991.

Borges, Jorge Luis. "The Garden of Forking Paths," *Ficciones*. (1956) trans. Anthony Kerrigan.   London: John Calder, 1985.

Brand, Stewart. *The Media Lab: Inventing the Future at MIT*. New York: Viking, 1987.

Carroll, Lewis. *Alice in Wonderland* and *Alice's Adventures through the Looking Glass*. London: Penguin, 1984.

Chatman, Seymour. "What Novels Can Do That Films Can't (and Vice Versa)," *On Narrative*. W.J.T. Mitchell, ed. Chicago: University of Chicago Press, 1981.

Coover, Robert. *Pricksongs and Descants*. New York: Plume, 1969.

Cortazar, Julio. *Hopscotch*. trans. Gregory Rabassa. New York: Random House,1966.

Douglas, J. Yellowlees. "Are We Reading Yet? A Few Pointers on Reading Hypertext Narratives" Computer software. Cambridge, MA: Eastgate Systems, 1991.

----. "Reading and Writing in Hypertext Space," *Proceedings of the Fourth Annual Conferences on Computers and the Writing Process*. Brighton: University of Sussex, 1991: 49-60.

-----. "Understanding the Act of Reading: the *WOE* Beginner's Guide to Dissection," *Writing on the Edge 2*, (2), Spring 1991: 112-126.

----. "Wandering through the Labyrinth: Encountering Interactive Fiction," *Computers and Composition 6* (3), August 1989: 93-103.

Durrell, Lawrence. *The Alexandria Quartet*. London: Faber and Faber, 1962.

Fowles, John. *The French Lieutenant's Woman.* 1969. New York: Signet, 1981.

Frank, Joseph. "Spatial Form in Modern Literature," *Essentials of the Theory of Fiction*. Michael Hoffman and Patrick Murphy, eds. Durham: Duke University Press, 1988: 85-100.

Guide. Computer software. Bellevue, WA: OWL International, 1990. Apple Macintosh and IBM PC, 701Kb, disk.

HyperCard 2.0. Santa Clara, CA: Claris, 1991. Computer software. Apple Macintosh, 669 Kb, disk.

Joyce, Michael. *Afternoon*. Computer software. Cambridge, MA: Eastgate Systems, 1990. Apple Macintosh, 520Kb, disk.

----. *WOE.* Computer software. Eastgate, 1991. Apple Macintosh, 570Kb, disk.

Kaplan, Nancy and Stuart Moulthrop, "Something to Imagine: Literature, Composition and Interactive Fiction," *Computers and Composition* 9(1): 7-23.

Landow, George. *Hypertext: the Convergence of Contemporary Critical Theory and Technology.* Baltimore: Johns Hopkins University Press, 1992.

Lanham, Richard A. "The Electronic Word: Literary Study and the Digital Revolution," *New Literary History 20*, 1989: 265-289.

McDaid, John. *Uncle Buddy's Phantom Funhouse*. Computer software. Cambridge, MA: Eastgate Systems, 1992. Apple Macintosh, 3,420Kb, disk.

Mitchell, W.J.T. "Spatial Form in Literature: Toward a General Theory," *The Language of Images.* Chicago: University of Chicago Press, 1980.

Moulthrop, Stuart. *Forking Paths*. Computer software. Unpublished. Apple Macintosh, 114Kb, disk.

-----. *Victory Garden*. Computer software. Cambridge, MA: Eastgate Systems, 1991. Apple Macintosh, 1,340Kb, disk.

Nelson, Theodor H. *Literary Machines*. Computer software. OWL Systems, 1987.

Sartre, Jean-Paul. "Why Write?" *Critical Theory Since Plato*. Hazard Adams, ed. New York: Harcourt Brace Jovanovich, 1971.

Slatin, John M. "Reading Hypertext: Order and Coherence in a New Medium," *College English, 52*, 8 (December 1990).

Smith, Frank. *Understanding Reading*. NJ: Lawrence Erlbaum, 1982.

Smitten, Jeffrey R. and Ann Daghistany, eds. *Spatial Form in Narrative,* Ithaca: Cornell
        University Press, 1981.

Sterne, Laurence. *The Life and Opinions of Tristram Shandy*. 1759. London: Penguin, 1967.

Stones, The Rolling. "Can't You Hear Me Knocking?" *Sticky Fingers*. Atlantic Records, COC-
        59100, 1971.

Storyspace 1.12. Cambridge, MA: Eastgate Systems, 1991. Computer software. Apple
Macintosh, 401 Kb, disk.

Trabasso, Tom, Tom Secco and Paul Van Den Broek. "Causal Cohesion and Story Coherence,"
        in *Learning and Comprehension of Text.* Heinz Mandl, Nancy L. Stein and Tom
Trabasso   eds. Hillsdale, NJ: Lawrence Erlbaum, 1984.

Ziegfeld, Richard. "Interactive Fiction: A New Literary Genre?" *New Literary History 20,* 1989:
        340-373.