PARALLAX

PARALLAX: RE-VISIONS OF CULTURE AND SOCIETY
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Narrative as Virtual Reality

Immersion and Interactivity in Literature and Electronic Media

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Adventures in Hypertext

Michael Joyce's *Twelve Blue*

One of the greatest obstacles to the popularization of literary hypertext, both in academia and in the public at large, is the difficulty of finding an appropriate descriptive and critical idiom. As Michel Bernard observes ("Lire"), reading hypertext is a solitary, highly individual experience that is difficult to share. If different readers hardly ever traverse the same material in the same order, if the hypertext novel "changes with every reading" (Joyce, *Of Two Minds*, 35), how could this new literary form create reader communities similar to those that built the reputation of the classics of print literature? It is by exchanging ideas about literary works that readers establish the cultural importance of those works. Will the critical discourse of the electronic age be something on the order of "signal[ing] that by clicking on a certain word on a certain page one can reach a description that nobody has read before" (Bernard, "Lire," 318; my translation)? Or will this discourse retain the stance that has traditionally dominated the criticism of print literature: the perspective of an omniscient Superreader who, having committed every word to memory, and enjoying a panoramic vision of the entire text, authoritatively dissects ideas, themes, style, narrative techniques, and plot (or the lack thereof)? The first alternative reduces criticism to the status of a cheat-guide for a computer game, while the second misses the dynamics of the reading process, whose control forms precisely the point of the interactive framework.

When Michael Joyce writes that "what happens in the work of art *is* the work of art" (*Of Two Minds*, 200), I assume that he has in mind not merely the plot of the novel but mostly the dynamics of its disclosure, as well as the narrative constituted by the reader's quest for meaning. By diversifying the process of discovery and denying complete

knowledge of the body of the text—you never know if you have seen all the nodes and followed all the links—hypertext puts to rest all notions of a Model Reader, Ideal Reader, Average Reader, or Superreader, but it does not completely exclude a shared experience, because all travelers in hyperspace encounter sooner or later the same interpretive challenges. The critical discourse that will secure the place of interactive texts in literary history may still remain to be invented, but it is not too early to derive from the hypertext experience some cognitive lessons about the nuts and bolts of the reading process. It is in the hope that my reading is exemplary at least for the questions it asks and for its quest for coherence that I offer here a narrative based on the diary of my own adventures in *Twelve Blue: Story in Eight Bars*, a hypertext short story by Michael Joyce publicly available on the Internet.

Every hypertext has a fixed entry point—there must be an address to reach first before the system of links can be activated—but in the case of *Twelve Blue* this entry point is not a room but a hallway with many doors: the picture shown in figure 3. The image on the screen consists of twelve largely parallel, occasionally intersecting, lines of different colors—mostly blue, but there are also a striking yellow, a pink, and a purple line—that look like strands of yarn, or like chains of mountains in a hazy landscape. Part of the action indeed takes place in what could be the Blue Ridge Mountains of Virginia, and in a passage buried deep in the text I will find an allusion to the picture on this first screen that associates the colored threads with the destinies (or story lines) of characters:

> She looked out on the creek and measured out the threads like the fates, silk thread in twelve shades of blue. (Is pink blue? Is yellow or purple? She supposed so, she believed in her stories.) ("Fates")

On the right side of the box the strands become fuzzy and disappear before reaching the edge, suggesting unfinished stories. The numbers 1 to 8 divide the picture into eight vertical bars. The beginning of the story is determined not by the line but by the bar on which the reader clicks. In other words, what matters here are the horizontal, not the

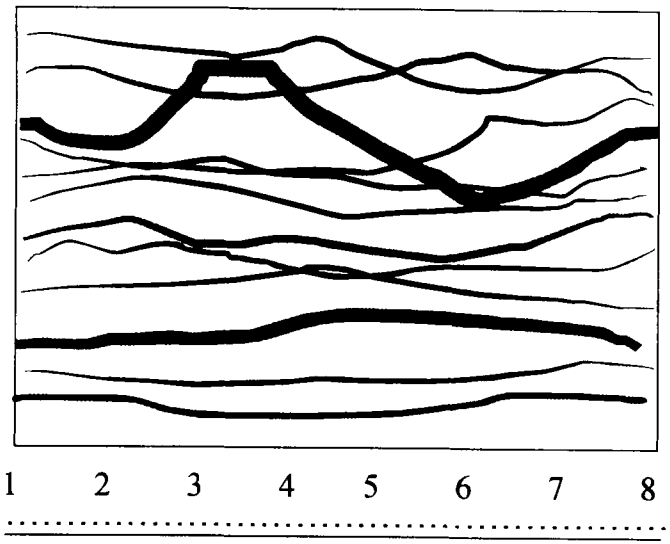

FIGURE 3 | Title page of Michael Joyce's *Twelve Blue*
Note: Redrawn by author.

vertical, coordinates. There are consequently eight possible beginnings—all different, as I find out through systematic testing. From this point on, every screen of text includes on the left one of the eight vertical bars, and the twelve lines that cross the bar function as links to other fragments. Some of the fragments are too long to appear entirely on the screen, and the reader must scroll to get to the end of the fragment. This creates the risk of missing part of the text, especially when a paragraph ends at the bottom of the screen. In addition to the twelve lines of the bar, certain fragments contain bits of underlined text that function as internal links, or invisible links hidden in the spaces between the paragraphs. When the reader clicks in the blank space, underlined text briefly appears, and then is automatically replaced by a new screen. After a while I become suspicious of the trick, and I systematically click on all spaces that contain more than one

blank line. Sometimes they hide a link, and sometimes they do not. In contrast to the links on the bar to the left, the text-internal links disappear after they have been followed.

Right from the beginning I face a dilemma: Should I read for the plot (or whatever semblance of plot the text might offer—my acquaintance with Joyce puts a damper on my hopes of finding a well-made, stable story)? Or should I first try to reconstitute the map and the logic of the linking? The strategies appropriate to each goal differ: if I read for the plot I will favor a "depth-first" exploration, venturing further and further along the chains of links, while if I read for the map I will go "breadth-first," performing backtracking operations to try all the paths that lead out of a given node. Fortunately for the pleasure of the investigation, the two operations cannot be kept strictly separate. As I go for the plot I get an idea of the linking strategies; as I go for the map I discover new fragments that fill important gaps in my reconstruction of the plot. My attempts to reconstitute the purely physical map of *Twelve Blue* ultimately produce largely negative results, if by *physical map* one understands a graph that enables the reader to find the path between any two given segments. But I become convinced during the course of my reading that drifting through the text is more rewarding than navigating with a purpose, because the only map that really counts is the one that represents the system of purely *thematic* relations—a system that often overwrites the network of physical links. The thematic logic of the textual space will not reveal itself until I accept the wisdom of the Gass epigraph (fig. 3) and place my trust in random navigation.

This much I am able to establish about the linking logic: that clicking on each of the twelve lines on the bar displayed on the left of every screen will lead to a different segment. By repeatedly clicking on a line of a certain color, one gets for a limited time an impression of continuity in the plot, such as several segments about the same character(s); but after a while the thread breaks down, either by repeating a previous sequence, by remaining stuck on the same screen, or by jumping to another narrative line. Clicking on the internal links is the best way to maintain narrative coherence, but these paths invariably turn out to be very short, since most of the screens do not offer such an option. My final impression of the link structure is that the colorful

threads that the text dangles in front of me are mostly deceptive guides—all the more deceptive because they occasionally suggest a semblance of continuity. The effect is that of an amnesiac mind that desperately tries to grasp some chains of association but cannot hold on to them long enough to recapture a coherent picture of the past.

As I begin my exploration, the dilemma between breadth and depth hits me on the level of the individual fragments. A breadth-oriented reader tries to get a general overview of the text before paying attention to detail, and will therefore tend to skim every segment the first time around, while a depth-oriented reader turns the page, or clicks, only after gathering a maximum of information from each segment. The two strategies are comparable to the two modes of transmitting pictures over a computer network: in one mode, the picture fills its frame right away with colored squares of coarse definition, and the grain is progressively refined over subsequent passes; in the other mode, the picture fills its frame pixel by pixel and line by line, slowly eating away the blank part of the screen. All reading is probably a composite of the two strategies—we never get all the information on the first pass, and even if we do not reread segments physically, we revisit some of them mentally—but the depth-first approach seems better suited to linear texts, and the breadth-first approach to hypertext. In a standard print text, each segment appears in a determined context. When I read a passage, I assume that the author knows to what information I have been exposed and expects me to process the new information in the context of the old. Knowing what the reader knows enables the author to plan more effectively the disclosure of new information. But in hypertext, the immediate context of every segment is highly variable. I may reach a segment through various routes, and what is readily understandable to some readers may be totally opaque to others. Under these circumstances it is better to pick and choose and move on than to clutter memory with unclassifiable information, especially since the linking system makes it very likely (though not guaranteed) that the reader will eventually return to the same node.[1]

My first foray into the text is concerned with the inventory of the basic furniture of the fictional world and with the construction of the web of relations that forms its human and spatial geography. To cut

my way through the jungle of data on the screen, I resolve to establish for every segment a list of characters, identified by name or definite description, a setting, and possibly a theme or a striking image. These notations should serve as a mnemonic aid, for nothing is more reluctant to inscribe itself in memory than the volatile signs of the screen. I also hope that by writing down the name of each segment and its most salient information I will be able to keep track of the units I have seen. Here is a sample of what I am able to get out of each screen during my first steps into the text:

— "Follow Me"
Setting. The porch of a country house in summer.
Characters. A fifteen-year-old girl with blueberry cotton candy and a gap in her teeth; a woman lying on a couch who needs to pee; a man.
Theme. The girl pours wine for the man, but I don't know if this is imagined or real.
— "Each River"
Setting. Upstate New York (mention is made of the Hudson and of Albany).
Character. A woman scientist who makes biological slides.
Theme. The woman thinks of a river and of life forms.
— "Look Out"
Setting. Indefinable. The passage evokes mental processes that visit many places. We do not know where the consciousness is located.
Characters. Second-person narration. Does "you" count as a character?
Theme. Instructions to "you" on how to keep a mental image of a scene that contains water and a beach. The last line suggests drowning.
— "Cleopatra's Toes"
Setting. Near a pool.
Characters. Aurelie (focalizer), Lisa, Tevet.
Theme. Aurelie watches Lisa swimming, reflects on the similarity of her relations to Lisa and Tevet.

During my first screening of the text I am so overwhelmed with unclassifiable information (noise?) that I grab the first image that

strikes my fancy and use it as memory aid to identify the segment. During later visits I situate the text in a richer context, and I am able to process more and more information. This incremental mode of reading constitutes the most genuinely nonlinear aspect of the hypertext experience.

The text seems to take a perverse pleasure in frustrating my attempts at classifying information into neat categories. The process of world construction is hampered by the dominant narrative mode of *Twelve Blue*, a kind of lyricized meditation focalized through a third- or second-person character. These meditations do not seem to capture the thoughts of a given individual at a given moment but rather trace the musings of a floating, atemporal and hybrid consciousness that belongs as much to an impersonal narrator thinking for the characters as to the characters themselves. In many cases the center of consciousness is identified by a pronoun, but at first I cannot link these pronouns to the few names I have gathered through my reading. I know what the characters think and perceive but not who they are. The following beginnings of fragments are typical of the referential opacity that permeates the text:

> He tried to look at things from her viewpoint. ("Shipwrecked")
>
> Think of lilacs when they're gone. She looked out the window to the water and tried to think what they were doing upstream. ("Blue Mountain")
>
> She says August is a month of Sunday nights. She thinks of an electric fog of blue light in steamy living rooms all along the street. ("Blue Room")

When a standard fiction begins with an unresolved anaphora, such as "She sat by the window watching the evening invade the avenue" (James Joyce, "Eveline," 36), the occurrence of a name after a few sentences usually enables the reader to identify the referent, but in hypertext the process of identification is complicated by the variability of the context. For instance, if I read in succession "Blue Mountain" and "Blue Room," should I apply the rules of discourse coherence and conclude that the referent of the pronoun *she* is the same person on each screen, or should I assume that the reference must be renegotiated with every segment? The first alternative would truly

allow the text to change with every reading, since the resolution of the anaphora would depend on which nouns or proper names appear on the preceding screen, while the second approach determines reference on the basis of a stable context—the content of the segment. I decide that the best way to get a coherent picture is to assume that each segment determines its own referents, but throughout the text I feel teased and challenged by the use of pronouns.

As I try to establish a list of dramatis personae by writing down names, pronouns, and definite descriptions of voluntary agents, I gradually realize that there is no absolutely reliable method for deciding who does and does not count as a character among the human referents of the text. "Characterhood," in *Twelve Blue*, is a fuzzy predicate. Some human agents are named (Javier, Lisle, Aurelie, Lisa, Samantha, Tevet, Ed Stanko, Eleanore, and Delores Peters), while others are referred to by definite descriptions (the drowned boy and his girlfriend; the drowned woman in California and her daughter); some seem to exist objectively in the fictional world, while others are merely imagined (the Portuguese sailor, hallucinated lover of the fictionally real Eleanore); some are part of the narrative present, while others are only remembered (Delores Peters, subject of Lisle's childhood recollections); some are native of the fictional world, while others are part of the cultural background (Eleanore of Castile); some possess a unified personality, while others represent the avatars of a multiple identity (Eleanore is also the Elli of Javier's past, as well as a whore and a mad goddess).

The establishment of a stable list of characters is further complicated by phenomena of homonymy (a proper name borne by two different characters) and synonymy (a character bearing two different names). In a self-descriptive statement, the segment "Blue Mountain" tells us, "It's hard to keep the names straight, like a Dickens novel." There are three Eleanores, one a student of George Landow who has gone insane (is this a comment on what hypertext does to the mind?) and the other two queens of England (Eleanore of Castile and Eleanore of Aquitaine). There are also two Lees (one better known as Aurelie and the other as Lisle), an Ed (Stanko) and an Eddie who may or may not be Ed as a boy, and two Javiers, a doctor and a Portuguese sailor, but they are manifestations of the same person in the mind of

different characters. Meanwhile, Eleanore is also referred to as Elli, and Tevet changes her name to Beth. A similar doubling of names complicates my effort to keep track of the screens I have seen: there are two "Blue Mountain's," two "Ophelia Falls's," two "White Moth's," two "Anchored," a "Riddle" and a "Riddles," and numerous "Blue" somethings.

Initially I can construct only a list of disconnected names and pronouns associated with occasional properties, but many of my questions are suddenly answered when I hit what Espen Aarseth would call an epiphanic segment that generously discloses a network of interpersonal relations. "Tongues" reveals that Javier Reilly is a doctor who used to be married to Aurelie but is now involved with Lisle, a woman doctor from Canada. Aurelie, after "unmarrying" Javier, has taken a female lover named Lisa, a former competitive swimmer. Javier and Aurelie/Lee have a teenaged daughter, Tevet (or Beth), and Lisle/Lee has a teenaged daughter whose name is Samantha. Now that relationships are straightened out, I feel that I have a hold on the human geography that underlies the plot, and as I continue to circle around old and new fragments I am able to locate most of them in a global picture. This stage of my reading, by far the most pleasurable, reminds me of the moment in the reconstruction of a jigsaw puzzle when pieces suddenly begin to fall into place. The snapshots of narrative action form several branches and an island:

1. *The upstate New York branch.* A woman, Lisle, sits on a porch overlooking a pond with her daughter Samantha. She is making a quilt, an obvious image of the patchwork structure of hypertext.[2] Her thoughts return obsessively to the memory of a deaf boy who drowned while swimming in the pond. The scene of the drowning is replayed in various modes, sometimes as the factual narration of the boy eloping with a girl to go swimming, sometimes as remembered and relived by Lisle ("she willed him to the shore"), sometimes as a story made up by Samantha, but most memorably as the stream of consciousness of the boy in the moment of sinking:

> Once he got used to it it didn't seem so bad, only lonely, far lonelier than he ever had imagined. At first he felt his heart like a falling anchor until it stuck, caught on a bone or rock deep in

the muck and hooked there, steadying him. For awhile he was comforted by the distant light of a woman's eyes scanning over the estuary like the sheriff's searchlight. After a time that too grew familiar and vaguely distant like the ache of the anchor within him. Then he became slowly aware of the damp smells of the shore, lilacs and the metallic smell of blood, musk, clove, a faint odor of fuel oil. Something else, the powdery smell of the girl who haunted it and the sweet, indistinct rot of the log where she waited for him.

Lonely, far lonelier than he imagined.[3]

He pulled the water over him like a blanket and slept, anchored in the gaze of an unknown woman and the girl who loved him. ("Anchored" I)

Another fork of this branch shows Lisa and Aurelie in a garden, Lisa amorously contemplating the body of Aurelie while Aurelie's thoughts move from Lisa to her concerns for her daughter Tevet, who represents the dimension of her life from which Lisa is excluded. It is also in the upstate New York landscape that I place a series of segments recounting the relation between Tevet and Samantha, who are both confronted with a human death during the same summer.

2. *The Canadian branch.* This strand captures memories of Lisle's youth in Canada: rush hour in industrial landscapes, life at a convent school, being excluded by the nuns from the choir, running away with the carnival at age fifteen, sliding in the snow with a boy named Eddie, making love with him on a carnival ride owned by the parents of Delores Peters, and somebody going over Niagara Falls in a barrel.

3. *The Blue Mountains branch.* This is the most elaborate narrative branch. Javier takes his daughter Tevet on a trip to the Blue Mountains to look at the only existing picture of his grandmother, Mary Reilly. The picture has now come into the possession of a coarse beer-drinking man named Ed Stanko who first charges Javier an extravagant amount to borrow the picture for a photocopy and then arranges with the photocopy-shop owner to prevent Javier from getting hold of the reproduction. Through passages narrated from Stanko's point of view, filled with profanities and spelling mistakes, we learn about Stanko's Catholic youth, his failure in marriage, his self-hatred, and

his expectation of burning someday in hell. He inherited a hotel from his dead wife, Flossie (a Reilly relative), and turned it into a dingy apartment house. One of his tenants, Eleanore—presumably the same person as the Landow student, who has sworn to kill Stanko—is believed to be a whore. When Javier and Tevet return to Stanko's house they are greeted by a madwoman who tells them that "señor Stanko is indisposed." Soon after the body of Stanko is taken out of the house in a white sheet, Eleanore is arrested, and Javier and Tevet return, very shaken, to their home in New York.

On later visits to the Blue Mountain action zone, I encounter Eleanore's preparation for a ritual killing of Stanko: she perfumes herself, cleans the tub, fills it with flowers, and stabs him in his bath. (I was surprised to find no textual reference to Marat and Charlotte Corday!) A lyrical passage that starkly contrasts with the vulgar tone of Ed's reminiscences captures the lonely but peaceful experience of surrendering consciousness to the waters of death:

> For awhile he was blinded by the blue rage in the woman's eyes but after a time that too grew familiar and vaguely distant like the anchor within him. Then he became slowly aware of the smells in the killing room, lilacs and the damp, metallic smell of blood, musk perfume, faint clove, and the oily smell of the steel blade, the familiar stench of shit in his drawers. Something else, the smell of a woman in sex.
>
> He pulled the water over him like a blanket and slept, lonelier than he had ever been. ("Anchored" II)

4. *The California island.* Consisting of only two segments, "Naiad" and "Salt Shores," this group evokes the drowning of the wife of a famous scientist in a scuba-diving accident, and the daily visits to the beach of her little girl waiting for her mother to return. I call these two screens an island because the ties to the other narrative clusters are strictly analogical: the theme of drowning, and the mother-daughter relation.

At this point I feel that I have reconstructed a fairly stable narrative foundation, but the motivation of the most salient actions remains obscure. I will never find out why exactly Eleanore wants to kill Stanko or why Stanko is so intent on preventing Javier from getting

hold of the picture of his grandmother. As a segment titled "Riddle" suggests, these are probably questions without answers:

> What links the dead man and the murderer, the drowned man and the shore, a once wife and her current lover, dream to memory, November to the new year?
>
> What links daughter to daughter, girl to boy, sky to moon, blue river to blue air?
>
> Why do we think the story is a mystery at heart? Why do we think the heart a mystery?
>
> Who shares one voice?

The text is not a whodunit, and the motivation of its main events is better found in symbolism and textual architecture than in the particular interests of the characters. Eleanore kills Stanko as much for the sake of the symmetry of the two drowning scenes related in "Anchored" I and II as to enact a sexual fantasy. As for Javier's failure to acquire the only existing picture of his grandmother, I interpret it as a warning that the past is not an object that can be owned, framed, and displayed but an interior landscape, a hypertext of the soul whose prominent sites can be reached only through the secret links of memory. While Javier's trip to the Blue Mountains ends in the macabre discovery of a dead body, the past is forcefully brought to life in the reminiscences of a Canadian childhood that play and replay in Lisle's interior monologue. Delores Peters and her father's carnival ride are a presence in the text, but Mary Reilly is nothing more than a dead ancestor.

From this point on my reading mostly wanders through segments that I have already seen, but many of these screens yield new information that tightens the relations between the various strands of the plot. Late in my exploration, for instance, I discover that Javier slept once with a woman named Elli, a "mad goddess," a queen ("Shipwrecked"). This reminds me that Eleanore lives in the mountains "on her wits and a small pension from the king" ("Eleanore Cross"). Javier, meanwhile, is referred to by Stanko as the king of England. Repeated mentions of a mysterious unborn daughter of Eleanore's, fruit of her love for a Portuguese sailor named Javier, lead me to suspect that in the realm of material causality (the textual actual world), she became pregnant by

Javier the doctor, that the child died, and that she now lives on the support that he sends her. But in the various possible worlds of her imagination—real life would diagnose her condition as multiple-personality disorder—Eleanore *is* a queen, a goddess, a whore, the lover of a Portuguese sailor, and the unborn child is alive. Whenever the text penetrates her point of view, the world of her madness acquires reality status.

For all its zones of undecidability, I find that the universe of *Twelve Blue* presents significant areas of ontological stability. The narrative events often read like a dream, especially those that have to do with the murder of Stanko, but even dreams have their actual world. Except for the passages that relate to Eleanore, which can be naturalized by reference to her madness, the text does not assert logically incompatible states of affairs, as does to some extent Joyce's well-known hypertext novel *Afternoon*.[4] Even though all of the segments adopt a highly subjectified perspective—even the impersonally narrated passages avoid the stance of absolute, omniscient narrative authority—we get a reasonable idea of what counts as fictional fact and what is imagined by characters from the mutual comparability of the various private worlds. It is because the text creates a zone of intersubjectivity from the overlapping contents of the minds of Javier, Lisle, Aurelie, Lisa, Tevet, and Samantha that I assume that certain characters exist autonomously, and that some events take place objectively. If *Twelve Blue* challenges classical ontology, as most postmodern texts do, it is not by frustrating the reader's quest for fictional truths or by postulating more than one actual world but by offering a more diversified ontology than the standard binary opposition of actuality and virtuality. Between the realm of the solidly factual and the realm of the hallucinated, the text creates a zone of free-floating, dreamlike existence (though it is nobody's dream), populated by objects and characters that seem to exist mainly as poetic images.[5]

It is in this ontological limbo that I situate three screens that relate to the theme of drowning: the scuba-diving death of the woman in California and the two "Anchored" passages quoted above. The imaginative presence of these episodes of indeterminate ontological status suggests a mode of reading that transcends, or rather supplements,

narrative logic and its need to categorize information as either factual or inscribed in a possible world belonging to the domain of a specific character. In this other mode of reading, every screen recenters the textual universe around a subjective world, whether or not the mind that projects it can be identified, and every representation becomes present and actual. Through this recentering, the subjectivity put on display becomes the hero of its own story, and every minor character—minor in other people's stories—gets a turn as major character. As we read in "Fates," "She had taught herself abandon, taught herself to understand that they were not minor characters, she and her daughter, but at the center of something flowing through them." The purpose of traveling around the text is no longer to reconstitute an objective plot but to join a stream of imaginative activity that flows through a network of interconnected subjectivities.

This idea of moving from one perspective to another within what may be called a collective consciousness[6] is reinforced in *Twelve Blue* by the use of pronouns that could be replaced by any of a number of possible referents, as well as by several passages that thematize the blurring of identity boundaries between the self and the other. Lisle and Samantha are so preoccupied with the drowned boy that he lives and dies through them; Samantha sees herself as his girlfriend or as the sister of Tevet, and the reader is invited to enter the consciousness of the drowned boy in a passage narrated in the second person:

> You get used to floating, it is after all only a resumption of what we all once had and lost in the light. Even the sounds are the same: the thump and rush of blood, the dark static of the nerves, the soft cry of silence. ("Bright Balloons")

How does this particular text benefit from the hypertext format? The attitude with which I initially attacked the text—and I mean *attack* to be taken in its full force—had much in common with the frame of mind of the player of a computer game or of the reader of a mystery novel. I was determined to "beat the text" by figuring out what the system of links and the multiple ambiguities were designed to hide from me. The understanding of "what the text is all about" was the hidden treasure at the center of the labyrinth or, to return to the jigsaw-puzzle metaphor, the global picture to be reconstituted

from the bits and pieces of narrative information provided by each segment.

Hypertext has been credited with offering an alternative to the Aristotelian curve of dramatic tension—slow rise, climax, and sudden fall—but the pleasure of the problem-solving activity follows its own rhythm of mounting and decreasing intensity. At the beginning, the reader is frustrated by a lot of incoming information and an absence of pattern. Pleasure peaks when a pattern begins to take shape, but this also marks the point at which the rate of new information begins to decline. The more the pattern fills out, the more difficult it is to locate new information to fill in the holes. Reading ends not when the plot is conquered but, as Joyce himself suggests in the introduction to *Afternoon*, when the reader becomes finally tired of circling through the same screens. *Twelve Blue* can be compared to the field in the fable of the plowman and his sons in that it contains no hidden treasure that makes everything fall definitely into place on the narrative level. Yet like the sons who plowed the field and made it more fertile, the reader who has been patient enough to explore the text in depth will find ample rewards in its poetic images and in its complex pattern of recurrent motifs.

When the reader's curiosity about the basic configuration of the fictional world has been reasonably satisfied, she enters a second stage of reading in which the hypertextual format is no longer a means to scramble a plot but a simulation of the dynamics of the imagination. Through the interactive mechanism of the text, the reader is invited not only to attend the projection of the film of the characters' inner lives, as she does in the stream of consciousness of the print novel, but also to run, perhaps even to pretend to *be*, the machine that records and projects images on the screen of the mind. (In this metaphor, consciousness is a camera that records and projects at the same time.) The randomness of the act of clicking figures that which is beyond conscious control—the subliminal, the obsessive, paths to the forgotten—in the mode of production of the imagination. In a collective consciousness patterned on the model of an individual mind, as it is in *Twelve Blue*, reaching a given subjectivity is no more predictable than moving from image to image in the thoughts or dreams of a particular subject. As one of the underlined phrases that serve as

internal links self-referentially tells us, "Wake from one dream into another" ("Cornflowers"). Just as we never know what a dream will bring next, we never know into whose dream we will awaken by selecting a link.

The importance of the image of water and the scenes of drowning in *Twelve Blue* can be read as a literalization of the metaphors of flow and fluidity that permeate so much of contemporary thought, from AI to architecture and from New Media to New Age philosophy.[7] Through a pun created by my own preoccupations, the drowning theme also raises the question of the immersive power of the text. We should be careful to distinguish here the immersivity that derives from the plot or images of this particular text from the immersivity of the medium itself. During the phase of the construction of the fictional world I became quite absorbed in this task, but I would not call this a truly immersive experience, because my pleasure, like the thrill of the jigsaw-puzzle solver, had more to do with fitting parts together than with an intrinsic interest in the picture I was reconstructing. The murder of Stanko teased me with a semblance of temporal immersion, but the text did its best to send me on trails that cured me of my hopes of solving the mystery. This suggests, however, that the hypertext format could provide the type of immersivity of the detective novel, as do some computer games, if it were based on a determinate and fully motivated plot.

As far as spatial immersion is concerned, I did encounter some lyrical passages that evoked places and atmospheres in which I was tempted to linger: the porch of the summerhouse where Lisle is making a quilt, the damp shores of the pond where the boy drowns, and the surrounding forest with its earthy smells, buzzing insects, and dense vegetation delicately detailed by botanical names. The evocations of the sylvan flora unlocked the door of some of my favorite childhood memories, just as did the image of the faded lilacs for Gregory Ulmer (cf. quotation in chap. 4). Some screens, such as the two titled "Anchored," were prose poems that I would have enjoyed printed on heavy blue-colored paper and detached from the hypertextual context, even though they do enrich the comprehension of the text as a whole. During my first pass through *Twelve Blue* I was so preoccupied with restoring a semblance of order in its informational

chaos that I hardly took the time to slow down and properly savor a passage. The twelve lines on the left of each screen kept urging me to make use of my freedom to click, to move on and find out what lay beyond the screen. When I encountered passages that tempted me to take a deep breath and inhale the flavor of language, I cheated the electronic medium by printing them out. This allowed me to postpone their rereading and to move on in my elusive quest for narrative coherence. (Without printouts, and without a map of the network, who knows if I would ever get another look at a given screen?)

The mosaic of hypertext can contain any kind of writing, including prose of a lyrically haunting quality, as *Twelve Blue* amply demonstrates, but the medium itself does not favor meditative contemplation, and the reader must fight it to pause and take in the presence of a scene. It is only by shutting down the hypertextual machine, by temporarily forgetting about interactivity, that I was able to let myself be carried away, like Ophelia, like Stanko and the drowned boy, by word streams like this one:

> Everything can be read, every surface and silence, every breath and every vacancy, every eddy and current, every body and its absence, every darkness every light, each cloud and knife, each finger and tree, every backwater, every crevice and hollow, each nostril, tendril and crescent, every whisper, every whimper, each laugh and every blue feather, each stone, each nipple, every thread every color, each woman and her lover, every man and his mother, . . . every shadow, every gasp, each glowing silver screen, every web, the smear of starlight, a fingertip, rose whorl, armpit, pearl, every delight and misgiving, every unadorned wish, every daughter, every death, each woven thing, each machine, every ever after ("Each Ever After").

mirror and on the importance of the latter for realism, see Furst, *All Is True,* 18–19.

7. Cf. Derrida's famous phrase "Il n'y a pas de hors-texte" (There is nothing outside the text).

8. The translation by Richard Howard has "functioning" here, but "playing" is closer to the French, "jouer" ("Ce lecteur est . . . plongé dans une sorte d'oisiveté, d'intransivité, et pour tout dire, de sérieux: au lieu de jouer lui-même, d'accéder pleinement à l'enchantement du signifiant, à la volupté de l'écriture, il ne lui reste plus en partage que la pauvre liberté de recevoir ou de rejeter le texte").

9. In the 2000 version, as well as in the NT versions that existed concurrently with DOS-based ones (95 and 98), Windows is no longer a graphical interface to DOS but the operating system itself. This means that it has become entirely similar to the Mac operating system.

SEVEN | Hypertext: The Functions and Effects of Selective Interactivity

Epigraphs: Borges, "An Examination of the Work of Herbert Quain," in *Ficciones;* Benjamin, "The Work of Art in the Age of Mechanical Reproduction."

1. In *Orality and Literacy* (136), Walter Ong argues that electronic media are bringing an age of "secondary orality" characterized by a participatory mystique, communal sense, concentration on the present moment, and use of formula. Writing in 1982, Ong could not have hypertext or the Internet in mind—he is thinking mostly of radio and TV—but each of the three points mentioned above can be illustrated by cyberculture phenomena: communal sense by electronic communities such as user interest groups and MOOs; concentration on the present moment by the real-time interaction of chat rooms; and use of formula by the increasing dependency of electronic writing on buzzwords, slogans, and fixed expressions so that documents posted on the 'Net can be easily found by search engines. For a more specific analysis of oral features in digital media, see Karin Wenz, "Formen der Mündlichkeit."

2. "The Materiality of Reading and Writing, 1450–1650," Cornell University lecture, March 1999.

3. In *Afternoon,* for instance, Michael Joyce uses guard fields to ensure that the reader cannot reach the screen that suggests Peter's possible responsibility for the accident that (perhaps) killed his son and ex-wife before Peter and the reader have gone through a therapy session with the psychologist Lolly. This reading is developed by J. Yellowlees Douglas in "How Do I Stop This Thing?"

4. Brian McHale's term (*Postmodernist Fiction,* chap. 7) for the postmodern practice of creating and destroying fictional worlds.

5. That it takes different abilities to handle language and to orchestrate the components of electronic texts is suggested by the division of labor in the production of the interactive movie *I'm Your Man* (interlude to chapter 8). Different authors were responsible for the writing of the dialogue for the individual strands in the plot and for tying these strands together in a narratively (i.e., logically) coherent multiple-choice system. In the visual arts domain of computer-aided creation, there is a dilemma as to whether art contests should be restricted to artists who do their own programming (cf. Bolter and Grusin, *Remediation,* 143).

6. For Cayley's work, see http://www.shadoof.net/ [accessed 2/29/00]. For Kac, http://www.ekac.org/ [accessed 2/29/00]. For Rosenberg, "Barrier Frames" and "Diffractions Through." On cyberpoetry, including works by Cayley and Kac, see issue 5 of *Electronic Book Review:* http://www.altx.com/ebr/ebr5/contents.htm [accessed 2/29/00].

7. See Mark Nunes, "Virtual Topographies: Smooth and Striated Cyberspace," for an enlightening application of these concepts to electronic culture.

8. Could there be more than one image? An example from print literature suggests that this could be the case. In Robert Coover's "The Babysitter" (in *Pricksongs and Descants*) the reader encounters a series of short paragraphs describing an evening spent by a teenager babysitting two kids. But it quickly turns out that the various fragments do not tell the same story: some form a sequence in which the teenager arranges a visit by her boyfriend at the children's home while the parents are away, one in which she is murdered by two intruders, one in which everything unfolds normally. As readers progress sequentially through the text, they sort out the narrative material and build several alternative possible worlds by assigning segments to the proper sequence. (A given segment may fit into more than one narrative script.) The text builds the various stories in a loose round-robin fashion, adding to one, then to another, but without disrupting chronological sequence.

INTERLUDE | Adventures in Hypertext: Michael Joyce's *Twelve Blue*

1. *Twelve Blue,* unlike *Afternoon,* does not offer a dictionary of all segments. This means that the reader is denied direct access to a given segment. Nor does it offer a map of the segments, as do other hypertexts, such as *Victory Garden* by Stuart Moulthrop.

2. Deleuze and Guattari associate the quilt, more particularly the crazy quilt, with the smooth, nomadic space that in their view forms the habitat of postmodern subjectivity: a decentered space that grows in all directions and whose structures consist of rhythmic repetitions of analogous elements rather than of rigid symmetries (*A Thousand Plateaus,* 476).

3. The underlining means that this segment of text is a hypertextual link.

4. In one strand of *Afternoon,* for instance, the narrator Peter witnesses an accident, but in another he causes it; in some screens he behaves as if this accident had killed his ex-wife and son, but in other screens he tries to get

information about the identity of the victims. At times the accident seems to be a mere fender-bender, and at others it is described as a fatal collision. Some readers may attempt to explain away these contradictions by interpreting them as epistemological uncertainties—the fictional world is logically coherent, Peter just doesn't know what the facts are, nor does the reader—or by regarding the screen where Peter is said to have caused the accident as a symbolic expression of his feeling of guilt. By these standards, however, there is hardly any contradictory narrative, short of nonsense verses, that cannot be naturalized.

5. It is nothing new to point out the dreamlike quality of hypertext; Coover has eloquently described it in his pioneering *New York Times Book Review* article, "Hyperfiction: Novels for the Computer": "As one moves through a hypertext, making one's choices, one has the sensation that just below the surface of the text is an almost inexhaustible reservoir of half-hidden story material waiting to be explored. This is not unlike the feeling one has in dreams that there are vast peripheral seas of imagery into which the dream sometimes slips, sometimes returning to the center, sometimes moving through parallel stories at the same time" (10).

6. This idea of collective consciousness has emerged as one of the dominant themes of electronic postmodernism, in part because it attempts to reconcile two conflicting political concerns of our times: a positive valuation of diversity and a sense of community. Pierre Lévy, for instance, regards information technologies and the phenomenon of computer networking as the breeding ground of a collective form of intelligence in which different minds (or processors) are linked together in a nonhierarchical structure, performing different tasks and passing information to each other. This collective intelligence reproduces the distributed processing of the brain on a higher level of organization.

7. For AI, see Douglas Hofstadter and the Fluid Analogies Research Group, *Fluid Concepts and Creative Analogies,* and for architecture, Marcos Novak, "Liquid Architecture in Cyberspace."

EIGHT | Can Coherence Be Saved? Selective Interactivity and Narrativity

Epigraph: Barnes, *Flaubert's Parrot.*

1. In a hypertextual database, a useful alternative to a complete graph is a network with a subset of nodes that are linked to every other one. The fully linked nodes will typically represent a table of contents. This configuration is implemented in those Web pages that present a constant list of options in a sidebar and a navigable hypertext in the main part of the screen. The constant list of links enables the user to return to the table in one trip from every point in the system.

2. Mark Bernstein, in "Patterns of Hypertext," has proposed a typology of hypertext patterns that could be used to create further refinements within the network category. His catalog includes cycle; counterpoint; mirror worlds; tangle; sieve; montage; split/join; missing link; and feint. Split/join corresponds to what I describe below as the flow chart and sieve to the tree design. But not all of these patterns concern the basic shape of the network. The difference between counterpoint and mirror world is mainly thematic (different voices focused on different themes versus different voices presenting the same themes from different points of view); montage and feint are styles of visual presentation that seem compatible with several network configurations; and missing link is a matter of unfulfilled expectations. It is therefore impossible to subsume Bernstein's typology within the one I am presenting here, or vice versa.

3. An example of this strategy is a combinatory play written by the French Oulipo members Pierre Fournel and Jean-Pierre Enard (Motte, *Oulipo,* 156–58). By allowing crossover and closing the tree at the bottom, they were able to write a system that generates sixteen plays with only fifteen different "scenes," some of which allow no choice. They claim that their scheme saved them sixty-seven scenes, a substantial reduction of memorization for the actors, but a simple calculation shows that a binary tree of five levels with four decision points requires only thirty-one scenes (16 + 8 + 4 + 2 + 1). Fournel and Enard assume that sixteen plays of five scenes would take eighty scenes (16 × 5), but the sixteen plays would not form a combinatorial system, since they would be totally independent of each other.

4. Janet Murray (*Hamlet,* 158–59) describes a closely related idea, Alan Ayckbourn's play *The Norman Conquests,* which consists of three different plays taking place simultaneously in different rooms of the same house, but the production does not seem to allow the spectator to move from room to room. The plays are therefore parallel but not interactive.

5. *Hypercafé,* Landow tells us, is a video project created by Nitin Sawney, David Balcom, and Ian Smith at the Georgia Institute of Technology (*Hypertext 2.0,* 211).

6. William Gibson, the coiner of the term *cyberspace,* calls it a "nonspace of the mind" (*Neuromancer,* 57).

7. For instance, Nunes, "Virtual Topographies," and Moulthrop, "Rhizome and Resistance."

8. Far from being satisfied with her own diagnosis, Murray tries to make a case for the tragic and cathartic potential of electronic narrative by imagining three interactive ways of representing the journey of a young man toward suicide (*Hamlet,* 175–82); but while a gifted writer could conceivably manage to create emotional bonding with the character, this accomplishment would be more a matter of overcoming the limitations of the medium than of exploiting its distinctive properties.

9. As Espen Aarseth suggests in *Cybertext,* when he calls *Afternoon* a "game of narration" (94).