

Marie-Laure Ryan

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# Immersion and Interactivity in Hypertext \*

By Marie-Laure Ryan

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## Hypertext and immersion

"Emergent" is the favorite term of contemporary literary theory for a type of meaning that comes out of the text, rather than goes into it, and that is produced dynamically in the interaction between the text and the reader. At the risk of creating an oxymoron, or a mixed metaphor, can a form of textuality cultivated for its emergent quality lure the reader into an immersive experience? Since it is always possible for a certain text to overcome the strictures of its medium, a more proper question to ask is whether interactivity can be a positive factor of immersivity. Let me consider here each of the three types of immersion defined in chapters 4 and 5.

### **Temporal immersion.**

The discussion of the preceding section has driven the point that interactivity conflicts with the creation of a sustained narrative development, and consequently with the experience of temporal immersion. Among the architectures described above, the only one that places interactivity in the service of narrative desire is the mystery story structure (no 6), because the reader's actions discover, rather than create the object of this desire, and because the story to be investigated is itself unilinear, determinate, and external to the interactive machinery.

Temporal immersion necessitates an accumulation of narrative information. In a linear text, the more we read and the more we know about the textual world, the more we can anticipate developments-and the more pleasantly surprised we are when the outcome dodges our projections. The continuity of the plot line functions as a string on which the reader's memory threads information and keeps it together for easy access. It is not without reasons that the mnemonic techniques of the Antiquity and the Renaissance built an itinerary through a building, and disposed the items to be remembered along this linear path . The broken up structure of the interactive text thus deprives memory of one of its most efficient modes of storage. It has been said that hypertext promotes a pattern of foregrounding and backgrounding data that mimicks the associative mechanisms of the brain, but

there is a world of difference between simulating the functioning of memory on the neural level and strengthening the process of recall.

The special power of interactive texts to generate a plurality of possible worlds could be regarded as a feature that facilitates the creation of an immersive plot. In my book *Possible Worlds, Artificial Intelligence, and Narrative Theory* (chapter 8), I suggest that one of the properties that contribute to the intrinsic tellability of a story—another term for narrative immersivity—is the diversification of possible worlds in the narrative universe. This principle makes the prediction that fictional universes that involve incompatible possible worlds—such as mistaken beliefs, conflict among the system of beliefs of various characters, conflict between desires and reality, conflict between sincere and projected beliefs, consideration by characters of various lines of actions, and so on,—produce more interesting plots than narratives in which the private worlds of characters reflect accurately the real world, or exist in harmony with each other. (In fact, there cannot be a plot without incompatible possible worlds.)

But this idea eventually hits the ceiling of the reader's processing ability. The comedies of errors and romans à tiroirs of the Baroque area flirt with, and sometimes transgress, these cognitive limits. Whatever advantage interactive narratives present over standard ones in the creation of forking paths and multiple realities leads to a degree of complexity that no longer supports narrative motivation. Two to four different endings, a structure easily realized in print, will for instance receive serious individual consideration, and the various outcomes will invite comparison; sixty-four endings only convey the message "there are lots of possible endings," and each of them is lost in the crowd. At this point it becomes irrelevant whether there are sixty-four, two hundred and fifty six, or a thousand endings. In terms of complexity, hypertext compared to print texts is like satellite-dish TV, with its 500 channels, versus the mere 50 of cable TV. Do viewers really take advantage of this complexity? The brain may be a "massively parallel processor" on the neural level, as cognitive science tells us, but on the level of the more conscious operations involved in reading, it remains very difficult to keep track of several strands at the same time, and it seems doubtful at best that systematic exposure to hypertext will significantly increase the mind's performance in distributed parallel processing.

## **Spatial immersion**

In a frequently drawn analogy, the hypertextual network is viewed as the image of the postmodern experience of space. For Fredric Jameson, postmodern space is an alienating, self-transforming expanse that offers neither rest for the body, refuge for the soul, nor landmarks for the mind: "[This] latest mutation in space—postmodern hyperspace—has finally succeeded in transcending the capacities of the

individual human body to locate itself, to organize its immediate surrounding perceptually, and cognitively to map its position in a mappable external world" (44). The only possible relation to this postmodern space is the feeling of being lost, and the only possible movement is aimless wandering. Both of these experiences are reflected in the blind progression of the reader through the labyrinthine structure of hypertext.

For Marc Auge, the characteristic space of "supermodernity," as he calls the present time, is a non-place that we traverse on our way to somewhere else, and that we come to inhabit, since the postmodern condition is a state of perpetual transit. These nonplaces are called airport, subway, freeway, and the network of Information Superhighways that criss-cross Cyberspace, the most non-place of them all. Cybnauts and hypertext readers spend most of their time clicking on the non-places of the links, never dwelling for long on a textual segment, because each of these segments is less a destination than a point of departure for other, equally elusive destinations. Theorists of electronic culture (for instance Nunes, "Virtual Topographies" and Moulthrop, "Rhizome and Resistance.") make a virtue of this sense of never getting anywhere by regarding hypertext as a textual implementation of Deleuze and Guattari's concept of "smooth space."

For Deleuze and Guattari, smooth space exists in contrast, though in constant interrelation, with an organized, hierarchical and largely static space that they call "striated." "In striated space, lines or trajectories tend to be subordinated to points: one goes from one point to another. In the smooth, it is the opposite: the points are subordinated to the trajectory" (478). Smooth space is nomadic (like the sea or the desert it offers no home, only an experience of its immensity), sprawling, continually expanding (you can always add a link to hypertext), amorphous (you can add wherever you want), heterogeneous, without clear boundaries, tactile rather than visual (through clicking, the reader grabs segments), and constituted by an "accumulation of proximities" (488). These proximities are links that negate physical distance, since all it takes to make two points adjacent in a network is to draw a line between them.

The interactive text may convey an exhilarating sense of power and mobility (a sense fortified by the tendency of the imagination to reconceptualize the travel of data on the Internet as travel of the user to distant sites), but the cost of embracing space in its globality is an alienation from its locality that prevents growing roots in any given site. The system of links of the interactive text is a constant temptation to move beyond the present screen. As Michael Heim observes: "Hypertext thinking may indeed reveal something about us that is agitated, panicky, or even pathological. As the mind jumps, the psyche gets jumpy or hyper" (*Metaphysics*, 40). Sven Birkerts, admittedly no friend of hypertext, concurs: "For the effect of the hypertext environment, the ever-present awareness of possibility and the need to

either make or refuse choice, was to preempt my creative or meditative space for myself" (162).

One of the consequence of the mosaic structure of hypertext is that the lexias are rarely long enough to let an atmosphere sink in. The link is a jump, and each act of clicking sends the reader to a new, relatively isolated textual island. It always take a while to make oneself at home in a text, to grow roots in the fictional world, to visualize the setting, to familiarize oneself with the characters and their motivation. It is for this reason that many people prefer fat novels over collections of short stories. In his novel *If On a Winter's Night a Traveler*, as we have seen in Interlude5, Italo Calvino allegorizes the difficulty of immersion by embedding in the narrative of the primary level the beginning of a dozen other novels which are brutally interrupted after a few pages—just as the reader begins to view herself as a citizen of the fictional world. In Calvino's novel, the reader is left stranded at the end of every chapter; in hypertext, the threat of uprooting occurs with every change of screen.

Every time the reader is called upon to make a decision, she must detach herself from the narrative "here and now" and adopt a point of view from which she can contemplate several alternatives. Once the choice is made, the reader may regret her decision and be haunted with the "could have been." What Gareth Rees writes of his experience of tree fiction is even more to the point in the case of a more complex network: "I think that as readers we are not ready for tree fiction: I know that when I read such a story, I want to find out all the consequences of every decision, to read everything that the author wrote, fearing that all the interesting developments is going on in another branch of the story that I didn't investigate. I want to organize the whole story in my mind." The body of the reader's imaginary persona in the fictional world would have to undergo a dismembering to take all the roads at the same time, and to overcome the nagging feeling of missing something along the way. Can immersion be experienced by a *corps morcelé*, as Christopher Keep describes the hypertextual reconfiguration of the body ?

In defense of electronic technology, however, it must be said that all these deficiencies of interactive textuality with respect to the experience of spatial immersion can be compensated by hypermedia effects. Of the three types of immersion, the spatial variety has evidently the most to benefit from the built-in spatiality of pictures. It seems safe to predict that the interactive texts of the future will make much more extensive use of visual resources than the literary hypertexts of the present, and it would therefore be unfair to pass judgments of immersivity on purely verbal attempts to convey an experience of space. I cannot think of a more efficient way to celebrate the spirit of a place than a well-designed interactive network that combines images with music, poems, short prose texts, maps, and historical documents.

## Emotional immersion

Once again the question is not whether the reader of hypertext can develop the kind of affective relations that lead to feelings of happiness or sadness when things turn out for the better or for the worse for a certain character, but whether or not interactive mechanisms can be used to enhance this emotional participation. Janet Murray writes that the sense of the irrevocability of life is alien to the spirit of interactive art: "Our fixation on electronic games and stories is in part an enactment of [a] denial of death. They offer us a chance to erase memory, to start over, to replay an event and try for a different resolution. In this respect, electronic media have the advantage of enacting a deeply comic vision of life, a vision of retrievable mistakes and open options" (175).<sup>1</sup>

One of the trademarks of the spirit of comedy is a playful detachment from the characters that precludes an affective investment in their fate. This detachment is strengthened by the knowledge that the character's life is simultaneously acted out in several possible worlds, and that if we do not like one of these worlds we can always jump to another. Emotional immersion requires a sense of the inexorable character of fate, of the finality of every event in the character's life, but as Umberto Eco observed in a radio interview, this outlook is fundamentally incompatible the multiple threads generated by interactive freedom. "A hypertext can never be satisfying," Murray quotes Eco as saying, "because 'the charm of a text is that it forces you to face destiny'" (296).

The obstacle to immersion in an interactive text lies however as much in the aesthetic philosophy of its theorists and literary practitioners as in the inherent features of the medium. We are told that the virtue of hypertext is to "propel us from the straightened 'either/or' world that print has come to represent and into an universe where the 'and/and/and' is always possible" (J. Yellowlees Douglas, "Hypertext," 155; view endorsed by Joyce, *Of Two Minds*, 5). This view suggests that the aesthetic ambition of hypertext is an awareness of the plurality of worlds contained in the system. Since this plurality can only be contemplated from a point of view external to any of these worlds, the proper appreciation of the multidimensionality of hypertext is incompatible with recentering and imaginative membership in a fictional reality.

## The future of interactivity

How can hypertext, or more generally interactive textuality, compensate for this immersive and narrative deficiency? Futurology is a risky discipline, but I see three avenues of development, between which there should be ample room for hybrid

forms and connecting trails. One of these avenues will be explored in chapters 9 and 10. The second one calls for a deeper understanding and bolder exploitation of the idiosyncratic properties of the electronic medium than we have seen so far. When electronic technology presented literature with the gift of point-and-click interactivity, it did not include a user's manual. Thinking in terms of the categories of the literary system of their time, hypertext authors conceived this strange gift as a way to free the novel, even more radically than postmodern works of the print variety had done, from patterns of signification inherited from the nineteenth century. This conception of hypertext as *a new form of novel* was detrimental to the nascent medium for two reasons.

First, the traditional length of the genre motivated hypertext authors to start right away with large compositions that made unreasonable demands on the reader's concentration. Instead of being gently initiated into point-and-click interactivity readers were intimidated by the forbidding complexity of a maze which they had no fair chance to master. With the arrogance typical of so many avant-garde movements, hypertext authors worked from the assumption that audiences should be antagonized and stripped of any sense of security, rather than cajoled into new reading habits.

Second, the model of the novel created a pattern of expectations that subordinated local meaning to a global narrative structure, and even though this structure hardly ever materialized, its pursuit distracted readers from the poetic qualities of the individual lexias. Abandoning the model of the novel would allow hypertext to explore two avenues:

1. Direct interest more strongly to the local level, by working with relatively self-contained lexias such as poems, aphorisms, anecdotes, short narrative episodes or provocative thoughts.
2. Give up on the idea of an autonomous "literary" genre, and take greater advantage of the multi-media capability of the electronic environment. This approach would lead to a merger of hypertext with the burgeoning genre of CD ROM interactive art, and could also take the form of a hybridization with computer games. (As Espen Aarseth suggest in *Cybertexts* when he calls *Afternoon* a "game of narration" (94).)

The renaissance of pure textuality that accompanied the early development of electronic writing may indeed have been a short respite in its ongoing loss of cultural territory to visual media. Compared to the hypertexts of the early nineties, the more recent ones are much more dependent on hypermedia effects, undoubtedly because of advances in the technological support. Michael Joyce's *Afternoon* offered no visual pleasure, but the more recent *Twelve Blue* makes a substantial use of color and graphics, and *Twilight: A Symphony* includes pictures, video clips, music, human voices and various other sounds. Gregory Ulmer envisions the future of

hypertext as the exploration and implementation of new relations between image and text. Several hypertext web sites launched in late 1998 <sup>2</sup> use for instance a combination of text and of 360-degree interactive panoramas created in Virtual Reality Markup Language (VRML). These panoramas can be explored with the mouse, and they may serve as either illustrations or story-navigating devices. In this latter case, clicking on an object in the picture will create a surprise, such as animating the object, displaying textual screens or activating audio recordings. In a multimedia environment, the instantaneous sense of presence that can be achieved through visual document, or through the intensely personal modulations of a human voice provides a way to compensate for the loss of immersivity that results from the fragmented structure of the work as a whole.<sup>3</sup>

A particularly promising form of multi-media hypertextuality is the thematic cluster and electronic activity kit. In this type of project, the system of links creates a guided, but flexible tour through a collection of semi-autonomous documents that either relate to a specific topic or develop a diversified vision. The interactive apparatus allows users to decide what to read, hear or see, and occasionally lets them manipulate the individual documents. This formula encourages the pure joy of "doing things" with text or pictures, and because it does not construct lengthy chains of logical dependencies between screens, it leaves users without remorse if they want to skip a certain segment. A particularly attractive example of this approach is Agnes Hegedüs' CD ROM artwork *Things Spoken* (1998):

An autobiographical "show-and-tell," *Things Spoken* takes the viewer on a tour of the curio cabinet of the mind. Displayed in the windows of the computer screen is a collection of things from the author's personal archives: kitsch, cheap tourist souvenirs, mass-produced objects, unique artifacts, family heirlooms or precious gifts from friends and relatives. Their shiny surfaces mirror or activate the phantasms, fears, thoughts and memories that make up the private fabric of the self. Using these pieces as "things to think with" (to use Sherry Turkle's expression), each screen of the artwork juxtaposes the hyperrealistic reproduction of an object with two strands of personal narrative that run side by side, and from right to left, on two white lines at the bottom of a black screen. A key chain with two dangling parts—the upper and lower body of a woman without arms—inspires reflections on the disarmed condition of women when they are turned into sex objects; a menorah awakens thoughts of what it means to be Jewish by marriage; a pink plastic doll that looks like a phallus reminds the speaker of the taboo placed on sexual topics of conversations during her Hungarian adolescence. The line on which the cursor is placed is read aloud in a voice whose rich intonations create a powerful sense of human presence.

By moving the cursor between the two lines the interactor can switch between two self-sufficient and rather short narratives read in contrasting

voices: male versus female, or German versus English. The user can also jump to other screens by clicking on highlighted words. Since the text moves from right to left, "catching" these links with the cursor requires some hand-eye coordination that lends tactile interest to the work and turns its operation into a game of skills. Once the interactor has successfully clicked on a highlighted word, she is transported into another narrative that contains the same key word, even though it describes a different object. The impression is one of synapses firing each other in the brain, opening up new pathways into the secret caches of memory and thickening the web of its associations.

The third possibility I have in mind is to turn the interactive text into a form of conceptual art through a clever and diversified enactment of the idea of self-referentiality. I am not suggesting that hypertext content itself with a crude version of McLuhan's all-too-famous slogan "the medium is the message," for no art form can survive if all it has to offer is a fully predictable message.<sup>4</sup> Even in genres as stereotyped as TV comedies or Hollywood movies, the invariant message "I am a comedy" or "I am a movie" that results from the formulaistic use of canned laughter or the traditional car chase is only acceptable because it stretches like a watermark design across a more visible and variable image. In the best specimen of postmodern literature, similarly, self-referentiality does not carry the text all by itself, but combines with other sources of interest, such as theme, style, and original narrative or anti-narrative techniques. The device is also far more successful when its message is not merely generic but specific to the text. In this individuated self-reference, the text will not merely say "I am an x (novel, fiction, text, hypertext)" but "I am me, a unique use of the resources of my medium."

This type of self-reference, the polar opposite of the predictable message of stereotyped devices, can be considered a form of conceptual art because it arises spontaneously from the novelty of the productive idea. The trademark of conceptual art is that its formula must be entirely original. The generative idea resembles the punch line of a joke, in that viewers may or may not get it, and if they do, they often get all of it. This is why conceptual art specializes in those intense bursts of creative energy that need no further development, and leave no foundation to build on, besides the memory of their ingenuity. In contrast to those artistic formulae that can be used over and over again and be adapted to many types of content and effects, the idea that forms the message of conceptual art exhausts its expressive potential after a single use.

By suggesting that electronic literature take the conceptual route I do not wish to say that interactivity *per se* is one of those devices that should be used only once, but rather, that the electronic medium can be a powerful tool-kit for the production of one-of-a-kind textual forms such as the projects listed below. Not all of them are literally interactive, but they are all dynamic, and they all put the visual and kinetic

properties of their medium in the service of a precise idea, often the literalization of a well-known metaphor:

- The text as anti-object, or the work that cannot be re-read: *Agrippa (A Book for the Dead)* by William Gibson (written in collaboration with the conceptual artist Dennis Ashbaugh) is a CD ROM text that erases itself while being read.
- "You bring as much to the text as you get from it": In some of the cyberpoetry projects of John Cayley (for instance *Collocations: Indra's Net I/*), the computer generates text by selecting and combining strings from a textual database. When the reader feeds a specimen of her own writing into the computer, the system literalizes the idea of the reader as co-author (Cayley, "Potentialities," 180-183).
- Reading as incomplete process and random selection: In a project described by Philippe Bootz (243), his own electronic text amour, the text scrolls too fast for the reader to parse all the words, and the "text-as-read" is necessarily a mutilation of the "text-as-written." This is not a bug, but a feature that literalizes the etymology of the French word for reading: lire, from the Latin legere, to pick. The idea is also used in the title segment of Mark Amerika's *Grammatron*.
- The text as palimpsest: In several cyberpoems by Jim Rosenberg, including *Diffractions Through* and *The Barrier Frames*, the visual display begins with a chaotic superposition of several pages. By moving the mouse around the screen, the reader isolates one of the pages from the clutter of the background, and reveals legible words. The effect is a very pleasant tactile sensation of peeling off the layers of the text, and of making words appear on the screen through the smooth caress of the cursor, rather than through the harsh hitting of keys.
- Literalizing the notion of textual space: In *De Leesbare stad*, a VR installation by Jeffrey Shaw and Dick Groeneveld, a user rides a bicycle in front of a video screen on which an image of the city of Amsterdam is projected. The houses however have been replaced by chunks of text borrowed from archive materials that tell the story of the various buildings. By pedaling the bicycle faster or slower, and by turning the handlebar, the user is able to control the display, and consequently, to select the itinerary of what becomes a journey through the history of the city.
- The instability of meaning. (A virtual project.) In this Derridean/Dadaist word game—an electronic version of a magnetic poetry kit—brightly colored, imaginatively selected words or phrases would swim on the screen like tropical fish in an aquarium. The reader would try to grab them with the

cursor, a task that could be made more or less difficult, and assemble them into a poem. The generated statements would be readable for a limited time, after which they would break up, and their components would start swimming again. Words could also morph into other words, and form ever changing statements.

Sending interactive textuality on the conceptual route is intellectually stimulating, but it is also a risky decision that involves two pitfalls. One has been lucidly diagnosed by Umberto Eco: it discourages reading the work, after the reader gets the productive idea:

I recently came cross *Composition No. 1*, by Mark Saporta. A brief look at the book was enough to tell me what its mechanism was, and what vision of life (and obviously, what vision of literature) it proposed, after which I did not feel the slightest desire to read even one of its loose pages, despite its promise to yield a different story every time it was shuffled. To me, the book had exhausted all its possible readings in the very enunciation of its constructive idea. (The Open Work, 170-1)

If interactive textuality opts for the conceptual approach, moreover, its place within literature will remain that of a marginal experimental form, comparable in impact and significance to the introduction of the 12-tone scale in the history of music. Arnold Schönberg, pioneer of the new scale, once reportedly said "I can see one day when everybody will be whistling my tunes." This hasn't happened. Nor will hypertext novels, in all likelihood, ever top bestseller lists. There is something about the 7-tone scale and about linear narrative that seems to make them indispensable to Western culture, and arguably for the latter, to culture in general. But music and literature deserve recognition, and are both substantially richer, for having dared to challenge the commanding position of these two forms of expression.

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## Notes

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1. 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 (175-82); but while a gifted writer could conceivably manage to create emo-

tional bonding with the character, this accomplishment would be more a matter of overcoming the limitations of the medium than of exploiting its distinctive properties.

2. For instance Stuart Moulthrop's *The Tomb Robbers* (<http://raven.ubalt.edu/staff/moulthrop/hypertexts/tr/index.html>; accessed 9/20/99), which consisted of only a few screens at the time of this writing. For a list of hypertext sites using VRML on the World Wide Web, see Matthew Mirapaul, "Hypertext Fiction Adds a Third Dimension."
3. On the particularly strong immersive effect of the human voice, N. Katherine Hayles writes: "Whereas sight is always focused, sharp, and delineated, sound envelopes the body, as if it were an atmosphere to be experienced rather than an object to be dissected. Perhaps that is why researchers in virtual reality have found that sound is much more effective than sight in imparting emotional tonalities to their simulated worlds" (*How We Became*, 219).
4. McLuhan's formula is widely interpreted as the expression of the self-referential character of postmodern art, but there is no mention of self-referentiality in the original context. For McLuhan, the formula expresses a variety of rather disparate ideas: (1) that a medium—for instance, electric light—has no intrinsic content: "The electric light is pure information. It is a medium without a message, as it were, unless it is used to spell out some verbal ad or name" (151); (2) that the message of a medium lies in its social impact: "For the 'message' of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs" (152); (3) that the content of a medium is another medium: "The content of a movie is a novel or a play or an opera...The 'content' of writing or print is speech" (159); and (4) that media shape perception: "for the medium determines the modes of perception and the matrix of assumptions within which objectives are set" (188).