# **Hypertext as Collage-Writing**

George P. Landow

From this Derridian emphasis upon discontinuity comes the conception of hypertext as a vast assemblage, what I have elsewhere termed the metatext and what Nelson calls the "docuverse." Derrida in fact employs the word assemblage for cinema, which he perceives as a rival, an alternative, to print. Ulmer points out that "the gram or trace provides the 'linguistics' for collage/montage" (267), and he quotes Derrida's use of assemblage in Speech and Phenomena: "The word 'assemblage' seems more apt for suggesting that the kind of bringing-together proposed here has the structure of an interlacing, a weaving, or a web, which would allow the different threads and different lines of sense or force to separate again, as well as being ready to bind others together." To carry Derrida's instinctive theorizing of hypertext further, one may also point to his recognition that such a montagelike textuality marks or foregrounds the writing process and therefore rejects a deceptive transparency.

— GEORGE P. LANDOW, Hypertext: The Convergence of Contemporary Critical Theory and Technology

#### Hypertext as Collage-Writing: The Paper

Frankenstein the Movie, perhaps, but why "Hypertext as Collage-Writing: the Paper"? The answer lies in the somewhat unusual history of this essay, which began existence as series of translations of electronic documents. Most current examples of hypertext take the form of texts originally produced by the hypertext author in and for another medium, generally that of print. In contrast, this essay derives from a hypertext, though it incorporates materials ultimately derived from printed books, too.

On Tuesday, June 7, 1994, at 17:01:54 Eastern Standard Time, Pierre Joris, a faculty member at the State University of New York, posted some materials about collage on a electronic discussion group called Technoculture.<sup>2</sup> Joris wished to share with readers of this e-conference a gathering of texts on the subject he had delivered as a combination of an academic paper and performance art while in graduate school. His materials seemed to cry out for a hypertext presentation, and so after moving them from my mailbox to a file on the Brown University IBM mainframe, I transferred them—in the jargon, "downloaded them"—in a single document via a phone line to

a Macintosh whirring away in my study at home. Next, I opened them in Microsoft Word and, passage by passage, copied the individual elements of *Collage Between Writing and Painting*, pasting each into a separate writing space or lexia in a new Storyspace web and then linking them together. Along the way, I created the following opening screen (or analogue to a book's title page):

COLLAGE BETWEEN WRITING AND PAINTING

Pierre Joris

George P. Landow

being an assemblage starring

Kurt Schwitters & Tristan Tzara

with special guest appearances by

Georges Braque &

Pablo Picasso

and also featuring

dedicated to . . .

This opening screen, which also serves as a combination overview, information map, contents page, and index, contains links from the obvious places—such as, for example, all the proper names it lists. Clicking upon "COLLAGE" takes one either to one possible terminal point of the web or to the following definition of the term from *Le Petit Robert*:

COLLAGE. 1. The action of gluing. Collage d'une affiche. State of what is glued. — Arts. Papiers collés, a composition made of elements glued on canvas (possibly integrated in the paint). Les collages de Braque, de Picasso. — Techn. Assemblage through adhesion.

- 2. Addition of glue. Collage of paper, of cloth, in industry. See. Appr t. Collage of wines: operation aiming at clarifying the wine by precipitating the solids in suspension it contains.
- 3. Fig. and Fam. Situation of a man and woman who live together without being married. See Concubinage. ANT. Decollage.

George P. Landow

Since this dictionary definition, which mentions Picasso and Braque, serves as a another ready-made overview or crossroads document, I linked various words in it to permit readers to traverse Joris's materials in multiple ways. "COLLAGE," for example, leads to a dozen and a half mentions of the term, and the names of the artists link to works of theirs. Because I created this web largely as an experiment and not for publication, I did not have to worry at the moment about copyright issues, and therefore scanned monochrome images of Braque's *Le Courrier* and Picasso's *Still Life with Chair Caning*, and linked them to the names of the artists. At the same time I added H. W. Janson's discussions of collage, linking them as well. Finally, I created a list of thirty authors whose statements Joris included in "Collage Between Writing and Painting," linking this list to the phrase "also featuring" on the title screen.

At this point, some of the similarities between hypertext and collage will have become obvious. Having first appropriated Joris's materials by placing them in a web, and then adding materials that they seemed to demand, I found that, like all hypertexts, it had become open-ended, a kind of Velcrotext to which various kinds of materials began attaching themselves. First, I included the discussion of Derrida and appropriation from the electronic version of my book, Hypertext: The Convergence of Contemporary Critical Theory and Technology (1992), that I used as an epigraph to this essay. I also added definitions of hypertext and a list of qualities that it shares with collage. Next, I added several dozen screenshots, or pictures of how the screen appears while reading, of various hypertext webs; these came from a sincepublished web that served as an introduction to the 1995 hypertext anthology Writing at the Edge. Then I added a dozen photographs, each involving issues of representation, illusion, simulation, or subject and ground. Finally, I added a new title page for Hypertext and Collage: Being in Part, an Appropriation of "Collage Between Writing and Painting."

After using this web to deliver my contribution to the Digital Dialectic conference at Art Center College of Design, I discovered I would have to transform it into a more or less traditional essay if it were to be part of this collection. These pages thus represent a translation of the *Hypertext and Collage Web*. When I write "translation," I cannot help thinking of the Italian maxim *traduttore* = *traditore* (translator = traitor). Converting the essay from one information technology to another, I continually encountered the kind of reduction that one encounters when translating—or representing—

something in three (or more) dimensions within a two-dimensional medium. An examination of the differences between the two versions will take us a way into understanding the reasons for describing hypertext as collage-writing.

#### **Hypertext**

The term "hypertext" embraces both a utopian vision of writerly artistic possibilities and dramatic cultural change, and much lesser embodiments of that vision in limited technology characterized by discrete, islanded computers and hard-to-read monitors whose flickerings and unbalanced color make reading difficult and aesthetic pleasure hard to come by. Even so, much of the vision of hypertext comes through, however hindered, in these first stumbling, stammering instantiations. Drawing upon the work of Vannevar Bush, Theodor Nelson, Douglas Englebart, Andries van Dam, and other pioneering theorists and practitioners of hypertext systems, I define this new information technology as text composed of lexias (blocks of words, moving or static images, or sounds) linked electronically by multiple paths, chains, or trails in an open-ended web. Since readers can take different paths through such bodies of information, hypertext is therefore properly described as multisequential or multilinear rather than as nonlinear writing. Let me emphasize the obvious—that hypertext is an information technology in which a new element, the link, plays the defining role, for all the chief practical, cultural, and educational characteristics of this medium derive from the fact that linking creates new kinds of connectivity and reader choice.3

Although linking thus defines this new medium, a full hypertext environment requires other features to enact the link's full potential. Because readers can chose their own paths through bodies of information, in some circumstances they find themselves with more power than might readers of similar materials in print. Nonetheless, the full Nelsonian vision of hypertext shared by most theorists requires several additional qualities or factors, some of which might at first appear unimportant or matters of technical trivia. For example, if multiple reading paths provide one of the fundamental characteristics of this form of textuality, one-to-many links become essential, and systems must make this form of creating connections easy and indeed inevitable. By "one-to-many" I mean the form of linking in which an anchor (or hypertext point of departure) connects electronically to two or more destinations.

To make such electronic writing easy and convenient for both author and reader, a hypertext system requires certain features, among them the ability to label individual links or link paths and a means of automatically providing the reader with a list of links from a particular anchor. Clicking upon a link site produces a menu of link destinations that overlays a portion of the text one is currently reading. Systems like Microcosm, Intermedia, and Storyspace provide these features, but many, such as Hypercard and World Wide Web viewers, do not, and as a consequence they produce a kind of flattened, often disorienting experience of hypertext.

Of course, although manually creating documents that serve as link menus partially provides one way around this problem, this approach places enormous burdens on the writer, with the expected result that writers tend to avoid the extra effort. Even when one expends the time and energy to create such additional documents, one does not always fully solve the problem, since in single-window systems in which one follows a link by replacing the departure lexia with the arrival lexia, one faces two difficulties: first, someone reading a normal textual or other document finds it replaced by a menu, and second, one receives the impression of having to expend more time and energy on mouse clicks because one has to go through the retrieval of separate documents.<sup>4</sup>

A second, far more essential matter involves matters of size, scale, or quantity. Simply put, to appear fully hypertextual, a web must be large. Unless one encounters a large number of lexias from which to choose, one cannot take many paths through the virtual reading space of the web. In Ted Nelson's vision of hypertextuality, all documents, images, and information exist electronically joined in an all-encompassing docuverse; a link or sequence of them can carry one between lexias spread across the farthest reaches of information space. This vision derives from the recognition that quantity, particularly quantity of choices, produces radical differences in quality. Even if we cannot hope to encounter an all-embracing docuverse in the immediate future (though the World Wide Web has begun to tantalize us with its promise and threat), we can recognize that some of the promised effects of hypertext, such as the empowerment of the reader, cannot develop within small, limited webs.

Size in turn requires networked computing. Of course, one obviously can create rudimentary decentered webs on individual machines that have substantial amounts of memory. Nonetheless, local, wide-area, or even universal networks and hypertext environments capable of using them are needed to realize a full participatory, multiauthored hypertext. If one takes the library, a congeries of books, and not the individual volume in that library, as the most useful analogue for hypertext, one quickly realizes that linking texts stored between pairs of covers to other such texts produces far richer possibilities than simply linking the portions of the separately stored text to themselves. Among other things, such a conception of hypertext brings with it the fact of multiple authorship so necessarily suppressed by print technology. By crossing, and hence blurring, the borders of (what had in print been) the individual text, the electronic link reshapes our experiences of genre, mode, text, intellectual property, and even self.

In fact, it might well be that the intrinsic multivocality—read potential anarchy or decentered authority—of hypertext can arise only in materials created by a multiplicity of authors. In other words, if hypertext redefines the function of the author in ways so radical as to fulfill the much-vaunted poststructuralist death of the author, then that major redefinition of our relations to our texts arises not in the absence of an individual author authoring but in the presence of a plethora of them; not in dearth but in plenitude. So it is, perhaps, not the absence of someone writing, contributing, or changing a text that we encounter, but rather the absence of someone with full control or ownership of any particular text. We find no one, in other words, who can enforce the desire "Leave my text alone!" Linking, the electronic, virtual connection between and among lexias, changes relations and status.

The third required quality or feature of a fully hypertextual system involves another adjustment or reallocation of power from author to reader. It involves, in other words, the ability of the reader to add links, lexias, or both to texts that he or she reads.

# **Collage Defined**

The on-line version of the *Oxford English Dictionary (OED)* defines collage, which it traces to the French words for pasting and gluing, as an "abstract form of art in which photographs, pieces of paper, newspaper cuttings, string, etc., are placed in juxtaposition and glued to the pictorial surface; such a work of art." *Britannica Online* more amply describes it as the

artistic technique of applying manufactured, printed, or "found" materials, such as bits of newspaper, fabric, wallpaper, etc., to a panel or canvas, frequently in combination with painting. In the 19th century, *papiers collés* were created from papers cut out and put together to form decorative compositions. In about 1912–13 Pablo Picasso and Georges Braque extended this technique, combining fragments of paper, wood, linoleum, and newspapers with oil paint on canvas to form subtle and interesting abstract or semiabstract compositions. The development of the collage by Picasso and Braque contributed largely to the transition from Analytical to Synthetic Cubism.

This reference work, which adds that the term was first used to refer to Dada and Surrealist works, lists Max Ernst, Kurt Schwitters, Henri Matisse, Joseph Cornell, and Robert Rauschenberg as artists who have employed the medium.

In The History of World Art, H. W. Janson, who explains the importance of collage by locating it within the history of Cubism, begins by describing Picasso's Still Life of 1911–1912: "Beneath the still life emerges a piece of imitation chair caning, which has been pasted onto the canvas, and the picture is 'framed' by a piece of rope. This intrusion of alien materials has a most remarkable effect: the abstract still life appears to rest on a real surface (the chair caning) as on a tray, and the substantiality of this tray is further emphasized by the rope." According to Janson, Picasso and Braque turned from brush and paint to "contents of the wastepaper basket" because collage permitted them to explore representation and signification by contrasting what we in the digital age would call the real and the virtual. They did so because they discovered that the items that make up a collage, "'outsiders' in the world of art," work in two manners, or produce two contrary effects. First, "they have been shaped and combined, then drawn or painted upon to give them a representational meaning, but they do not lose their original identity as scraps of material, 'outsiders' in the world of art. Thus their function is both to represent (to be part of an image) and to present (to be themselves)."5

# **Hypertext as Digital Collage**

Hypertext writing shares many key characteristics with the works of Picasso, Braque, and other Cubists. In particular, both work by means of the following:

juxtaposition
appropriation
assemblage
concatenation
blurring limits, edges, borders
blurring distinctions between border and ground.

Some of these qualities appear when one compares the hypertext and print versions of my discussion. First of all, despite my division of this essay into several sections and the use of plates that a reader might inspect in different orders, this essay really allows only one efficient way through it. In contrast, the original hypertext version permits different readers to traverse it according to their needs and interests. Thus, someone well versed in twentieth-century art history might wish to glance only briefly at the materials on collage before concentrating on the materials about hypertext. Someone more interested in hypertext could concentrate upon that portion of the web. Others might wish to begin with one portion of the discussion and then, using available links, return repeatedly to the same examples, which often gather meaning according to the contexts in which they appear.

Another difference between the two forms of "my" discussion of this subject involves the length of quoted material and the way the surrounding texts relate it to the argument as a whole. Take, for example, the material I quoted above from Janson's History of World Art. In the Storyspace version it is several times longer than in the print one, and it appears without any introduction. The object here is to let the quoted, appropriated author speak for himself or, rather, to permit his text to speak for itself without being summarized, translated, distorted by an intermediary voice. To write in this manner—that is to say, to copy, to appropriate—seems suited to an electronic environment, an environment in which text can be reproduced, reconfigured, and moved with very little expenditure of effort. In this environment, furthermore, such a manner of proceeding also seems more honest: the text of the Other may butt up against that by someone else; it may even crash against it. But it does seem to retain more of its own voice. In print, on the other hand, one feels constrained to summarize large portions of another's text, if only to demonstrate one's command (understanding) of it and to avoid giving the appearance that one has infringed copyright.

These two differences suggest some of the ways in which even a rudimentary form of hypertext reveals the qualities of collage. By permitting one to make connections between texts and text and images so easily, the electronic link encourages one to think in terms of connections. To state the obvious: one cannot make connections without having things to connect. Those linkable items not only must have some qualities that make the writer want to connect them, they also must exist in separation, apart, divided. As Terence Harpold has pointed out, most writers on hypertext concentrate on the link, but all links simultaneously both bridge and maintain separation. This double effect of linking appears in the way it inevitably produces juxtaposition, concatenation, and assemblage. If part of the pleasure of linking arises in the act of joining two different things, then this aesthetic of juxaposition inevitably tends toward catachresis and difference for their own end, for the effect of surprise, and sometimes suprised pleasure, they produce.

On this level, then, all hypertext webs, no matter how simple, how limited, inevitably take the form of textual collage, for they inevitably work by juxtaposing different texts and often appropriate them as well. Such effects appear frequently in hypertext fiction. Joshua Rappaport's *The Hero's Face* uses links, for example, to replace what in earlier literary writing would have been an element internal to the text; that is, the link establishes a symbolic as well as a literal relationship between two elements in a document. In *The Hero's Face*, after making one's way through a series of lexias about the members of a rock band, their experiences on tour, and their musical rivalry—all of which might seem little more than matters of contemporary banality—the reader follows a link from a discussion of the narrator's seizing the lead during one performance and finds her- or himself in what at first appears to be a different literary world, that of the Finnish epic the *Kalevala*.

Following Rappaport's link has several effects. First, readers find themselves in a different, more heroic age of gods and myth, and then, as they realize that the gods are engaged in a musical contest that parallels the rock group's, they also see that the contemporary action resonates with the ancient one, thereby acquiring greater significance as it appears epic and archetypal. This single link in *Hero's Face*, in other words, functions as a new form of both allusion and recontextualization. Juxtaposing two apparently unconnected and unconnectable texts produces the pleasure of recognition.

#### first leads Singing match

The first time I climbed serious lead was after it all went sour and my partner was one of his ex-girlfriends, a leggy blond named Megan who took to the sport with unbridled enthusiasm and a god-given natural ability that left everybody stunned. Climbing lead for the first time is kind of like losing your virginity—there comes a moment when all of a sudden you look behind you and you're

Vainamoinen grew angry at that, angry and ashamed. He himself started singing himself began reciting: the songs are not children's songs, children's songs, women's cackle but for a bearded fellow which not all the children sing nor do half the boys nor a third of the suitors in this evil age with time running out. The old Vainamoinen sang: the lakes rippled, the earth shook the copper mountains trembled the sturdy boulders rumbled the cliffs flew in two the rocks cracked upon the shores.

Symbolic and literal juxtaposion of texts from The Hero's Face.

Such combinations of literary homage to a predecessor text and claims to rival it have been a part of literature in the West at least since the ancient Greeks. But the physical separation of texts characteristic of earlier, non-electronic information technologies required that their forms of linking—allusion and contextualization—employ indicators within the text, such as verbal echoing or the elaborate use of parallel structural patterns (such as invocations or catalogs).

Hypertext, which permits authors to use traditional methods, also permits them to create these effects simply by connecting texts with links. Hypertext here appears as textual collage—"textual" referring to alphanumeric information—but more sophisticated forms of this medium produce visual collage as well. Any hypertext system (or, for that matter, any computer program or environment) that displays multiple windows produces such collage effects. Multiple-window systems, such as Microcosm, Storyspace, Intermedia, Sepia, and the like, have the capacity to save the size and position of individual windows.

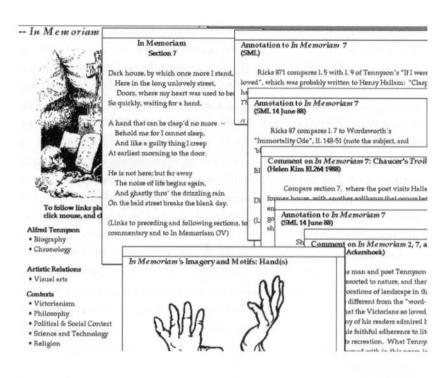
This capacity leads to the discovery of what seems to be a universal rule at this early stage of E-writing: authors will employ any feature or capacity that can be varied and controlled to convey meaning. All elements in a hypertext system that can be manipulated are potentially signifying ele-

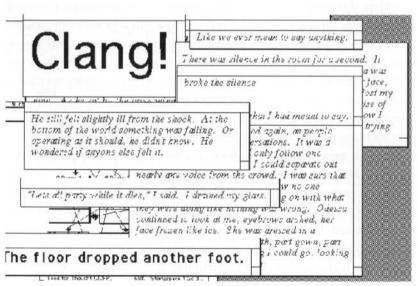
ments. Controlled variation inevitably becomes semiosis. Hypertext authors like Stuart Moulthrop have thus far written poems in the interstices of their writing environments, creating sonnets in link menus and sentences in the arrangements of titles. Inevitably, therefore, authors make use of screen layout, tiled windows, and other factors to . . . write. For example, in an informational hypertext, such as *The "In Memoriam" Web*, tiling of documents constructs a kinetic collage whose juxtaposition and assembling of different elements permits easy reference to large amounts of information without becoming intrusive. In addition to employing the set placement of the windows, readers can also move windows to compare two, three, or more poems that refer back and forth among themselves in this protohypertextual poem.

Turning now to another work of hypertext fiction, one sees that in Nathan Marsh's *Breath of Sighs and Falling Forever*, lexias place themselves around the surface of the computer monitor, making the screen layout support the narrative as one crosses and recrosses the tale at several points. In *The "In Memoriam" Web* the collage effect of tiling, separate windows, and juxtaposed text arises in an attempt to use hypertext technology to shed light on qualities of a work created for the world of print.

Here this story arises out of the medium itself. In making their way through this fiction, readers encounter multiple narrative lines and corollary narrative worlds both joined and separated by ambiguous events or phenomena. At certain points readers cannot tell, for example, if one of the characters has experienced an earthquake tremor, a drug reaction, or a powerful illumination. Has the floor actually fallen, or are we supposed to take a character's experience as figurative? Certainly one of the first lexias that readers encounter could suggest any and all of these possibilities: "Andy paused for a second and let his senses adjust to the shock. The floor had been dropping all week now. As he sat by the open window and the frozen night air embraced the room, he realized that it was all part of the long slide down." Clicking upon this brief lexia leads one to "Clang!," which opens with the sound of an explosion and displays its single word in eighty-point type. As one reads one's way through Breath of Sighs, one repeatedly returns to "Clang!" but finds that it changes its meaning according to the lexia that one has read immediately before encountering it.

Marsh has arranged each of the texts that make up his web so that they arrange themselves across the screen, permitting some lexias to show in their





The kinetic collage of the "In Memoriam" Web.

The interwoven narrative lexias of Breath of Sighs and Falling Forever.

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entirety, others only in part. As one reads through this web, one encounters a continually changing collage of juxtaposed texts. Two points about hypertext writing appear in Marsh's web. First, we realize that such collage-writing produces a new kind of reading in which we must take into account not only the main text but also those that surround it. Second, this emphasis upon the increasing importance of the spatial arrangement of individual lexias leads to the recognition that writing has become visual as well as alphanumeric; or since visual layout has always had a major impact on the way we read printed texts, perhaps it would be more accurate to say that in hypertext (where the author controls more of the layout), writing requires visual as well as alphanumeric writing.

Marsh's web exemplifies a form of hypertext fiction that draws upon the collage qualities of a multiple-window system to generate much of its effect. Patchwork Girl. Shelley Jackson's brilliant hypertext parable of writing and identity, carries hypertext collage much farther, for it generates both its themes and its techniques from this art form. Jackson, a published book illustrator as well as an author, creates a digital collage out of her own words and images that tells about the female companion to Frankenstein's monster whose "birth takes place more than once. In the plea of a bygone monster; from a muddy hole by corpse-light; under the needle, and under the pen." Patchwork Girl makes us all into Frankenstein-readers stitching together narrative, gender, and identity, for, as it reminds us: "You could say all bodies are written bodies, all lives pieces of writing."

This digital collage-narrative assembles Shelley Jackson's (and Mary Shelley's and Victor Frankenstein's) female monster, forming a hypertext Everywoman who embodies assemblage, concatenation, juxtapositions, and blurred, re-created identities—one of the many digital fulfillments of twentieth-century literary and pictorial collages. As the monster slyly informs us in a lexia one encounters early on, "I am buried here. You can resurrect me, but only piecemeal. If you want to see the whole, you will have to sew me together yourself. (In time you may find appended a pattern and instructions—for now, you will have to put it together any which way, as the scientist Frankenstein was forced to do.) Like him, you will make use of a machine of mysterious complexity to animate these parts."

Traveling within Jackson's multisequential narrative, one of the finest hypertext novels to have appeared, we first wander along many paths, finding ourselves in the graveyard, in Mary Shelley's journal, in scholarly texts, and in the life histories of the beings—largely women but also an occasional man and a cow—who provided the monster's parts. As we read, we increasingly come to realize an assemblage of points, one of the most insistent of which appears in the way we use our information technologies, our prosthetic memories, to conceive ourselves. Jackson's 175-year-old protagonist embodies the effects of the written, printed, and digital word. "I am like you in most ways," she tells us.

My introductory paragraph comes at the beginning and I have a good head on my shoulders. I have muscle, fat, and a skeleton that keeps me from collapsing into suet. But my real skeleton is made of scars: a web that traverses me in three-dimensions. What holds me together is what marks my dispersal. I am most myself in the gaps between my parts, though if they sailed away in all directions in a grisly regatta there would be nothing left here in my place.

For that reason, though, I am hard to do in. The links can stretch very far before they break, and if I am the queen of dispersal then however far you take my separate parts (wrapped in burlap and greasy fish-wrappers, in wooden carts and wherries, burying and burning me and returning me to the families from which I sprung unloved and bastard) you only confirm my reign.

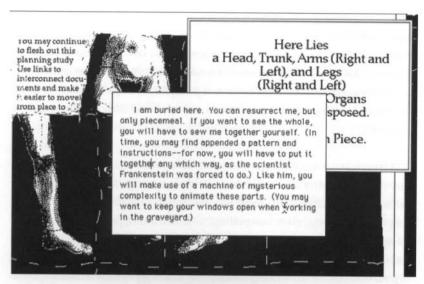
Hypertext, Jackson permits us to see, enables us to recognize the degree to which the qualities of collage—particularly those of appropriation, assemblage, concatenation, and the blurring of limits, edges, and borders—characterize a good deal of the way we conceive of gender and identity. Sooner or later, all information technologies, we recall, have always convinced those who use them both that these technologies are natural and that they provide ways to describe the human mind and self. At the early stage of a digital information regime, *Patchwork Girl* permits us to use hypertext as a powerful speculative tool that reveals new things about ourselves while retaining the sense of strangeness, of novelty.<sup>6</sup>

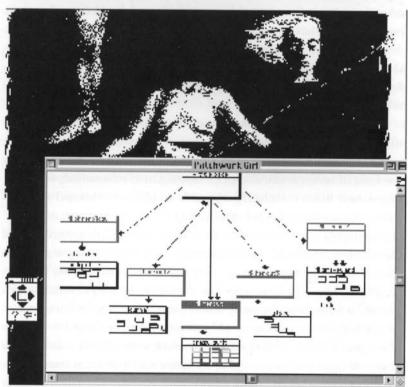
# Virtual Collage

Joris explained that he finds most compelling the question not whether collage arose first in painting or in poetry, but whether it functions the same way in each art. He finally suggests that collage

as such belongs to the arena of painting, which is a spatial medium, and that the application of that term to textual procedures is misleading, given that texts have

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The digital collage-narrative of Patchwork Girl.

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essentially a temporal dimension; you take in a painting in one glance, but you read a text over time; film in that sense is closer to text than painting, and the filmic term "montage" would be better for what happens when a text makes use of disparate, found, randomly combined elements. The only true "collage" effects in literature, i.e. the presentation in the same moment of perception of disparate materials would be certain "simultaneities," such as Dada and Merz and other, later sound-poets presented.

Hypertext, as we have seen, presents us with an exception or variation, but collage clearly exists in this new writerly medium almost certainly because it so fundamentally combines the visual and the verbal. Noneless, despite interesting, even compelling, similarities, hypertext collage obviously differs crucially from that created by Picasso and Braque. Hypertext and hypermedia always exist as virtual, rather than physical, texts. Until digital computing, all writing consisted of making physical marks on physical surfaces. Digital words and images, in contrast, take the form of semiotic codes, and this fundamental fact about them leads to the characteristic, defining qualities of digital infotech: (1) virtuality, (2) fluidity, (3) adaptability, (4) openness (or existing without borders), (5) processability, (6) infinite duplicability, (7) capacity for being moved about rapidly, and (8) networkability.

Digital text is virtual because we always encounter a virtual image, the simulacrum, of something stored in memory rather than any so-called text "itself" or a physical instantiation of it. Digital text is fluid because, taking the form of codes, it can always be reconfigured, reformatted, rewritten. Digital text hence is infinitely adaptable to different needs and uses, and since it consists of codes that other codes can search, rearrange, and otherwise manipulate, digital text is always open, unbordered, unfinished, and unfinishable, capable of infinite extension. Furthermore, since it takes the form of digital coding, it can be easily replicated without in any way disturbing the original code or otherwise affecting it. Such replicability in turn permits it to be moved rapidly across great spaces, and in being moved creates both other versions of old communication, such as the bulletin board, and entirely new forms of communication. Finally—at least for now—all these qualities of digital textuality enable different texts (or lexias) to join together by means of electronic linking. Digitality, in other words, permits hypertextuality.

The connection of the fundamental virtuality of hypertext to the issue of collage becomes clear as soon as one recalls the history of collage and the reasons for its importance to Picasso, Braque, Schwitters, and other painters. As Janson explains, collage arose within the context of Cubism and had powerful effects because it offered a new approach to picture space. Facet Cubism, its first form, still retained "a certain kind of depth," and hence continued Renaissance perspectival picture space. "In Collage Cubism, on the contrary, the picture space lies in front of the plane of the "tray"; space is not created by illusionistic devices, such as modeling and foreshortening, but by the actual overlapping of layers of pasted materials." The effect of Collage Cubism comes from the way it denies much of the recent history of Western painting, particularly that concerned with creating the effect of three-dimensional space on a two-dimensional surface. It does so by inserting some physically existing object, such as Picasso's chair caning and newspaper cuttings, onto and into a painted surface. Although that act of inclusion certainly redefines the function and effect of the three-dimensional object, the object nonetheless resists becoming a purely semiotic code and abrasively insists upon its own physicality.

The collage of Collage Cubism therefore depends for its effect upon a kind of juxtaposition not possible (or relevant) in the digital world—that between physical and semiotic. Both hypertext and painterly collage make use of appropriation and juxtaposition, but for better or worse, one cannot directly invoke the physical within the digital information regime, for everything is mediated, represented, coded.

The manner in which the hypertext version of this essay raised the issues related to oppositions between the physical and the virtual raises further questions about the nature of hypertext. In the web version, after encountering discussions of collage, hypertext, and hypertext as both pictorial and verbal collage, the reader comes upon a series of ten photographic images, many of them manipulated. Each in its way concerns oppositions of the physical and the virtual, and each takes the general form of a picture of a surface on which appear images and other forms of semiotic codes. One first encounters a lexia entitled "Providence Illusions," a photograph whose lower half reveals a slightly posterized image of a six-story brick building with a peaked roof; in the upper portion of the picture a cloudy sky appears. Nothing seems exceptionable about this image until, looking at the lower right corner, one perceives that the brick and windows are peeled back, as if on

the corner of a giant paper or canvas, from the identically colored brick beneath, thus revealing that the windows are painted on a blank wall. The illusion works so well that both in the photograph of the building and at the original site, one finds it difficult to discern which windows, if any, are real (only those at the top of the building turn out to be windows and not images of them).

Clicking on this lexia brings one next to a lexia that contains a photograph of what appear to be two windows in a brick wall, the one on the left pretty clearly a trompe d'oeil rendering of a flat window within an oval convexity. To its right, four or so feet away, an ordinary window above what appears to be a granite sill pierces the brick surface. Only a single clue, one not easily noticed, suggests that all is not as it seems: a brick cornice runs through the convex oval and across the wall surface. But, one realizes, if it runs through the illusory convexity, then it, too, has to be an illusion, a matter of paint and not of brick. In fact, as I discovered when I approached the wall from a distance of a yard or so, after having seen it many times from a greater distance, everything other than the window is painted cinder block. The entire project layers illusory representations one upon another and makes one illusion acceptable or accepted as reality by juxtaposing it with another —the convexity—more obviously trompe d'oeil.

Clicking upon this lexia produces a menu offering two choices—one to graffiti in Victoria, British Columbia, and the second to a lexia entitled "This Is Not a Window." Following the link to the second, one arrives at the same photograph of the Providence wall of illusions upon which, using the graphics software Photoshop, I have overlaid a series of texts in bright red Helvetica type:

This is not a window.

This is a picture of a picture of a window.

But this [window at right] is a picture of a window.

[and on the bricks at upper right]

This is not a picture of a brick wall.

These are not bricks.

This is not a window sill.

Continuing on one's way, one can choose various paths through lexias containing graffiti and reflections of buildings on the surfaces of glass buildings, all of which raise issues of the way we differentiate—when we can—between illusory surface images and the true physical surface they cover.

The final lexia in this grouping, however, moves this more traditional form of virtuality to that found in the world of digital information technology, for it both repeats sections of all the images one may have seen (in whatever order), blending them with multiply repeated portions of a photograph of a Donegal, Ireland, sunset, and it also insists on the absence of any solid, physical ground: not only do different-sized versions of the same image appear to overlay one another, but in the upper center a square panel has moved aside, thus revealing a what the eye reads as colored background or empty space. In this photographic collage or montage, appropriation and juxtaposition rule, but since all the elements and images consist of virtual images, this lexia, like the entire web to which it contributes, does not permit us to distinguish (in the manner of Collage Cubism) between virtual and real, illusion and reality.

This last-mentioned lexia bears the title "Sunset Montage," drawing upon the secondary meaning of "montage" as photographic assemblage, pastiche, or, as the *OED* puts it, "the act or process of producing a composite picture by combining several different pictures or pictorial elements so that they blend with or into one another; a picture so produced." I titled this lexia "Sunset Montage" to distinguish the effect of photographic juxtaposition and assemblage from the painterly one, for in photography, as in computing, the contrast of physical surface and overlaying image does not appear.

Upon hearing my assertion that hypertext should be thought of as collage-writing, Lars Hubrich, a student in my hypertext and literary theory course, remarked that he thought "montage" might be a better term than "collage." He had in mind something like the first *OED* definition of montage as the "selection and arrangement of separate cinematographic shots as a consecutive whole; the blending (by superimposition) of separate shots to form a single picture; the sequence or picture resulting from such a process." Hubrich is correct in that whereas collage emphasizes the stage effect of a multiple-windowed hypertext system on a computer screen at any particular moment, montage, at least in its original cinematic meaning, places important emphasis upon sequence, and in hypertext one has to take into account

the fact that one reads—one constructs—one's reading of a hypertext in time. Even though one can backtrack, take different routes through a web, and come upon the same lexia multiple times and in different orders, one nonetheless always experiences a hypertext as a changeable montage.

Hypertext writing, of course, does not coincide fully with either montage or collage. I draw upon them chiefly not to extend their history to digital realms and, similarly, I am not much concerned to allay potential fears of this new form of writing by deriving it from earlier avant-garde work, though in another time and place either goal might provide the axis for a potentially interesting essay. Here I am more interested in helping us understand this new kind of hypertext writing as a mode that both emphasizes and bridges gaps, and that thereby inevitably becomes an art of assemblage in which appropriation and catachresis rule. This is a new writing that brings with it implications for our conceptions of text as well as of reader and author. It is a text in which new kinds of connections have become possible.