

**DANCING WITH PROTEUS:  
A DYNAMIC SPATIOTEMPORAL NETWORK MODEL FOR READING  
MICHAEL JOYCE'S HYPERTEXT FICTION, *TWELVE BLUE***

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*Abstract*

Much may be said about the differences between hypertext fiction and traditional print fiction, and rejecting the novelty of the medium and its literary merit are now a thing of the past. The present article discusses the connection between the hypertext link as the most distinctive element of hypertext fiction with the combining of time and space into a continuum. Studying Michael Joyce's hypertext fiction, *Twelve Blue*, building on the network models of Michel Foucault and Fredric Jameson and the network interaction model of Marie-Laure Ryan, and using Francois Lyotard's concept of the "event" this paper proposes a more complete and more dynamic model which may be used to describe the flow of space and time in hypertext fiction.

**Keywords:** Electronic Literature, Hypertext Fiction, Michael Joyce, Link, Space-time Continuum.

Reading a hypertext novel is a challenge, and any one with the slightest experience in reading serious literature would agree that saying so about any work of literature is, more often than not, a complement. Nevertheless, speaking about the challenges of reading hypertext fiction itself brings about challenges of its own, as the discussion of such relatively new literary phenomena poses a serious challenge to literary criticism itself. Discussions concerning the literary merit of these kinds of works and the suspicion with which some respected critics look at them, themselves bear witness to the unease and discomfort electronic literature is causing among the literary academia – perhaps reminiscent of how orthodoxies of times past have treated other new literary phenomena.

The shortcomings of traditional literary criticism become readily apparent as soon as the critic opens the hypertext fiction in their browser, reads a couple of sentences, and takes up a pen to take a note. The question which arises is, "How am I going to refer to this part of the work when there is neither page number nor line number, and the next person to read this novel will most probably come across the parts of the novel in a different order, or may even not encounter this part at all?" Irena Averianova and Nataliya Polishko point out that "there is no text anymore for all the critics to analyze" (35), and thus conclude that the analysis of such a work "is similar to that of a theatrical critic, who deals not with a play as a finite work of art but its current, immediate realization by actors and directors" (37).

The topic this paper will be discussing is the connection of the hypertext link with the notions of space and time. Instead of structuring the study around the themes, characters, events, etc. in Michael Joyce's *Twelve Blue*, this study will take a look under the

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hood of hypertext fiction. In doing so, the study firstly aims at the heart or engine behind every hypertext work, AKA the “link,” and then works its way through the spatiotemporal outcomes of the introduction of the hypertext link into an otherwise print-like medium. Michael Joyce’s *Twelve Blue* is perhaps among the first works of hypertext fiction, a genre “associated with print literature,” but “characterized by linking structures” (Hayles, *Electronic* 6), a feature that according to Averianova, “defines hypertext as an exclusively electronic product, and its existence is considered as possible only within the electronic medium” (52).

The notion of link, along with other hypertext notions such as “web,” “network,” and “interwoven,” was philosophically subjected to criticism first in 1979 by Jacques Derrida in “Living on: Border Lines.” Over the past few decades, the internet has become an indispensable part of our everyday life, and links are now so integral to our daily lives that they are taken for granted, to the point of invisibility. In order to demonstrate the importance of the link, one should try to envision using the internet without links, and the sheer absurdity of the thought will be eye-opening. The internet without links (that is, navigation only through typing in addresses in the browser address bar) would not be much different from the grueling task of the outdated scholar, looking through aisles and aisles of books, and then leafing through a book for the chapter and line of what they are looking for. In order to demonstrate in what ways the electronic hyperlink has changed the nature of fiction at a level much deeper than a narrative tool, a discussion of media is in order, for it is integral to this discussion to show how the nature of the literary medium itself has been changed by the link. The relevance of this discussion will become more apparent when one compares a novel with a comic strip, a movie, and an opera production based on the same original work.

Every medium has certain properties in both senses that Marie-Laure Ryan borrows from Joshua Myerowitz: first, it is “a channel or system of communication, information, or entertainment” such as TV, the internet, the telephone, etc., and second, it is a “material or technical means of artistic expression” such as “language, sound, image, or more narrowly, paper, bronze, or the human body,” (17). Likewise, the electronic medium, while having similarities with more traditional media, has its own specific strengths and limitations. There will be very few, we hope, who would deny the extent to which the medium through which the message is transmitted affects the nature of the message itself.

One of the properties of media that Ryan refers to is “spatiotemporal extension.” For Ryan, a temporal medium is not “one that requires time to be processed,” as all media would fall into this category, but “one that imposes an order and directionality on the act of processing” (26). She classifies media such as painting and photography as purely spatial, and language and music as purely temporal ones. Cinema, dance, image-language combinations and of course, digital texts (hypertext), nevertheless are placed in the spatiotemporal category (ibid). This is in keeping with Joyce’s metatextual comment in

his other well-known hypertext fiction, *Afternoon: A Story*, comparing his writing method to composing music.

How does this spatiotemporality affect the narrative? In the lexia “a sea of stories” in *Twelve Blue*, Samantha complains of her mother’s narrative style, telling her “you go from May crowning and the Virgin Mary to much more than I ever wanted to know about my missing father. Couldn't you just start with a name and work your way up to the broken fingernail?” and that “People have names and stories. They have middles and endings,” to which her mother replies, “He was once, you are now. This time there are only beginnings.”

When reading *Twelve Blue*, the user – a term that often replaces the traditional “reader” in discussing electronic literature – goes through fragments of the story – henceforth called lexias – in a seemingly random order. Lexias that follow each other seem to be centered on a limited number of characters at any given time, but shuffling through their minds, and shifting freely through time and space, ranging from journalistically realistic to nightmarishly surreal in style, leaving it to the user to work out the who, the when, and the where, and the level of reliability of the mostly third-person narrator. As the user navigates, repetitive lexias come up from time to time and across storylines, some lexias more than others, the hyperlink pathways in them exhausted and no longer visible, giving the experience an almost *deja-vu*-like (more accurately *deja-lu*-like) feeling; at times, lexias repeat *ad absurdum*, encouraging the user to click on a different storyline hoping to escape the repetition loop.

The argument between the two parties which Averianova distinguishes as that of Coover, Landow, and others, who consider hypertext as “a unique invention and sole property of electronic medium,” and that of those like Michaelovich who see it as “a computer-generated variant of non-linear open narrative” (55) has been, in fact, an ongoing battle. Nevertheless, as shall be demonstrated, the odds seem to be in favor of the former. Robert Coover himself considers the writing strategies of novelists such as Stern, James Joyce, Queneau, Cortezar, Calvino and others as “countless counter-strategies to the Line’s power” (11). As may be seen here, these *counter-strategies* themselves show the extent to which hypertext is alien to the medium of print, and the lengths such writers have to go to, to simulate an effect similar to a link.

One of the first things that becomes apparent to the reader of *Twelve Blue* is the many ways in which the river, which is the central theme and the central natural element in the hypertext fiction, links people and events, both in time and in space. It is primarily necessary to understand what we mean when we speak of linked entities in *Twelve Blue*, and how this may be connected to hypertext links in hypertext fiction and later to the links between signifier and signified in language. The parallel between the river and the text may be seen further in an extremely recurrent lexia, “each ever after”:

Everything can be read, every surface and silence, [...]each nipple, every thread every color, each woman and her lover, every man and his mother, every river, each of the twelve blue oceans and the moon, every forlorn link,[...] every

estuary, each gesture at parting, every kiss,[...] 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.

This linking function is not limited to the river, and may also be seen in similar man-made structures such as roads. The lexia “Route 9” begins with “There were so many ways from her house out to Route 9 that it sometimes seemed a labyrinth,” then goes on to list more than a dozen ways to get to Route 9 from home. Interestingly the title of this lexia is “Route 9,” which, considering the paths one could take to reach it (the lexia), is in fact a commentary on what the experience of reading hypertext fiction might actually be like. The similarity between the acts of “Driving” and “Diving” and the places they would lead you to is interesting. In “steerwomen” there is the description of a dream “all in swirls of blue like housepaint when you first open it or like the swirly art they used to sell to rubes along the midway.” In that dream, Samantha complains, “Can't you see I'm in cyberspace[?]” The parallel between a dream (virtual) world in which these events happen, the blue color (which is the traditional color which cyberspace symbols and graphics, and also the background and text of *Twelve Blue* are depicted in), and the idea of floating shows the river as a metaphor for links connecting characters and events to each other.

In addition to the metaphorical linking of people, events, and locations by rivers and roads, which would have the same significance if the novel were published in print, the lexias and the graphical interface in *Twelve Blue* contain literal hypertext links. There seems to be little connection between the text of the links (what the user sees as “clickable” on the screen), and the place the links take the reader/user. In fact, what connects two lexias is more the mere fact that they are linked than their content. In this way, links connect seemingly irrelevant lexias, as buttons connect two layers of a chair's upholstery, thus forcing the two to occupy a proximate space and be part of the same collage of materials. In this sense, links make sure that lexias are read in some vague order, avoiding too much randomness and arbitrariness. In “riddle,” we read,

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? [...] /Turn the page, child, turn the page.

The lexia that follows this lexia after clicking the link, “[Why do you want more?](#)” does not contain any clue as to what the answers to the questions are. The answer is most probably the “link” itself.

The significance of these links is multiplied when we look at the post-relativity notion of space-time continuum. As neither are the lexias pre-arranged in a definite order, nor do the contents of the lexia provide a causal or temporal sequence of events, the

process of reading gives more the sense of exploration of an unknown space than progression in time.

Let us use one of the lexias in *Twelve Blue* to illustrate the space-time continuum. In the lexia “photograph,” Javier “could discern the merest turning, like someone standing high upon a precipice beyond a river,” an image he knew came from a nun’s “explanations of how God's bright providence shone in the face of our free will.” This description is a representation of how the space-time continuum works. When space and time converge, time becomes the fourth dimension, and traversing time becomes simply like traveling from one location in space to another. Hence, time travel would be as casual as walking around; this change erases the notions of present, past, and future. While a caravan makes its way through valleys and over hills, experiencing the passage of time as they go from A to B through the landscape, an observer standing on top of a nearby mountain sees the whole landscape as a picture, “like standing high above a stream.” The observer sees the path chosen by the caravan as only one of the many possibilities. Some other possibilities would be going back or going in circles, thus returning to the same place again and again. The paths taken are a matter of free will, but the landscape is a given – god’s providence or determinism – in many ways like a “photograph” – the title of the lexia. Javier contemplates that, “all history was a photograph you couldn't take [...] a photograph you couldn't take but could only to be given.” One way of better understanding this is seeing the reading process as the completion of a jigsaw puzzle, with the lexias as puzzle pieces, and the act of reading as completing the overall image by matching the pieces.

Doreen Massey points out to the extent to which spatiality has occupied the minds of the great thinkers of the past century. Foucault associates “the anxiety of our era” more fundamentally with space than with time, Bhabha argues for what he calls ‘third space’ in the discussion of cultural identity, and Jameson, faced with “what he sees as the global confusions of postmodern times, ‘the disorientation of saturated space’, calls for an exercise in ‘cognitive mapping’” (139). Examining the views of Ernesto Laclau, Michel Foucault, and Fredric Jameson on “time” in “Politics and Space/Time,” Massey criticizes all on the basis that they deprive the spatial of any political power (140). Laclau does so by taking spatiality as a completely static realm, devoid of any political potential, as opposed to time, which he sees as the realm of change and revolution. In this way, when space and time converge, turning progression in time into wandering in space, humans are stuck with what they have been given, able to explore it, but unable to change it. Contrary to Laclau, Foucault and Jameson see space as a simultaneity as if space is a flat surface of simultaneous phenomena. In “Of Other Spaces”, Foucault sees the experience of the world as “less that of a long life developing through time than that of a network that connects points and intersects with its own skein” (22), and Jameson contrasts “perspectival temporality” with connections that light up “like a nodal circuit in a slot machine” (374). The difference with Laclau lies in the links between nodes which introduces some kind of potential for change in the static landscape. In spite of their

difference with Laclau, both still portray space as three-dimensional, with nodes and links between these nodes, but ultimately closed and unable bring about any change.

In response to this, Massey sees no need to choose between “flow (time) and a flat surface of instantaneous relations (space)” on the basis that “the social relations which create [this flat surface] are themselves dynamic by their very nature” (153). The merging of the temporal and the spatial may be seen in the concept of memory as well. Thinking about music in the lexia “awful goddess,” Lisle contemplates that “sometimes songs flowed through her, like breath like blood like water. [...] It was maddening to think a song could so pursue you, or for that matter any memory.” A memory is something associated with the past, and therefore has a strong temporal aspect to it. The presence of memories in the present, as if they flowed in one’s veins is quite telling about how time flows through space. The body and the idea that it has a memory and is a receptacle of history is also significant here. In the lexia “Route 9” in *Twelve Blue* we read about Indians who “camped in the caves above the river and left petroglyphs of impossible beauty beyond the blue page of the water, though you had to know your way through the park trails and crawl in tunnel-like caves to find them.” The recurring image of trails and paths and the promise of finding petroglyphs if one knows their way around the topography of the place gives the reader a strong sense of navigating the spatial realm, but one must not forget that although the petroglyphs date from fifteen thousand years ago, they are part of the landscape here and now. Not only the intertwining of topography and temporality, but also the similarity between these petroglyphs and the few images Joyce has included in *Twelve Blue* (image 3), remind us that as we read the hypertext novel, we are navigating through both space and time.

But such bending of time is the direct outcome of features exclusive to hypertext fiction, that is, it is the effect of the material properties of electronic literature – more specifically, the presence of links. The spatiotemporal navigation of lexias through links more often than not creates temporal discontinuities that may only be explained in terms of the bending of time. In the lexia “waters of resurrection,” a boy named Henry Stone emerges from the water, as if out of a floating image, to meet Samantha. Henry stone, according to Samantha’s mother in the lexia “a sea of stories,” is the name of Samantha’s long-lost father. The coexistence of father and daughter at the same age is not possible other than through the bending of the space/time continuum, which is not uncommon in hypertext fiction.

Speaking of plot (story) and discourse, Ryan draws different diagrams representing different types of plot and their representation through discourse. Among the models she proposes, there are two story models and one discourse model that are applicable to the present study of *Twelve Blue*.

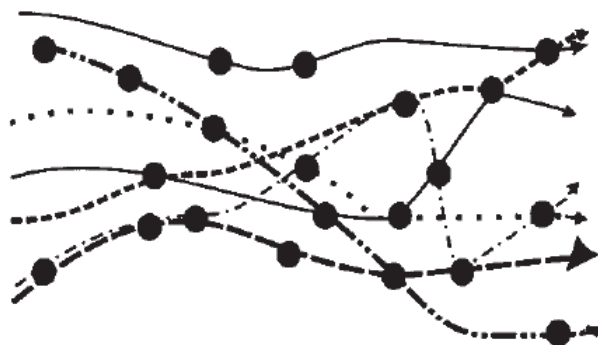


Diagram 1. Plot as interwoven destiny lines (*Avatars* 101)

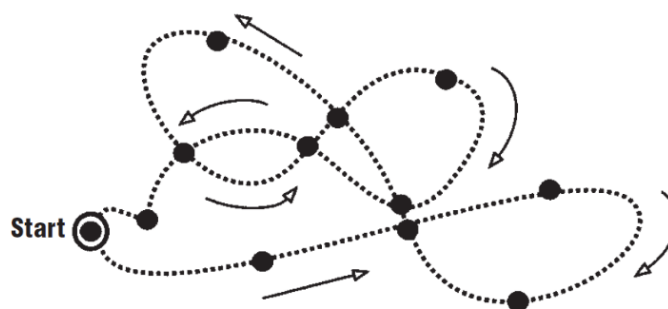


Diagram 2. Plot as travel in story world (*Avatars* 101)

The plot structure in Diagram 1 portrays different destiny lines for different characters, and an oriented line which moves through these characters' lives, at times passing through nodes where destiny lines intersect. Although this looks very similar to the destiny lines in the *Twelve Blue* interface, the difference lies in the directionality which is not quite so clear in *Twelve Blue* and the existence of a central plot and central characters that intersect with minor ones. In the lexia “fates,” the fact that Lisle had “taught herself to understand that they were not minor characters, she and her daughter, but at the center of something flowing through them” shows that either these people themselves are significant characters in a storyline, or that significance does not apply to the characters, as long as they are part of the storyline – which is represented both by the river and the colored lines in the interface navigation panel.

Diagram 2 seems to be more representative of the plot in *Twelve Blue*, as not only doesn't it contain a dominant plot line, it also presents a spatial movement. While a better representation than the previous one, much like Laclau and Foucault's models, this model lacks temporal depth. This three-dimensional (merely spatial) model is what Ryan herself is referring to when she associates it with “narratives of travel, such as the *Odyssey* or James Joyce's *Ulysses* (102). This model, therefore cannot explain the instances of juxtaposition of asynchronous characters such as the meeting of father and daughter as peers in *Twelve Blue*.

Turning to discourse models, the only model Ryan proposes that corresponds to the architecture of *Twelve Blue* is the “network” interactive model (Diagram 3). The interactive nature of hyperlink is a crucial factor here, as the reader/user has to make a choice by clicking on a link to move from one node to any of the other nodes linked to the current one.

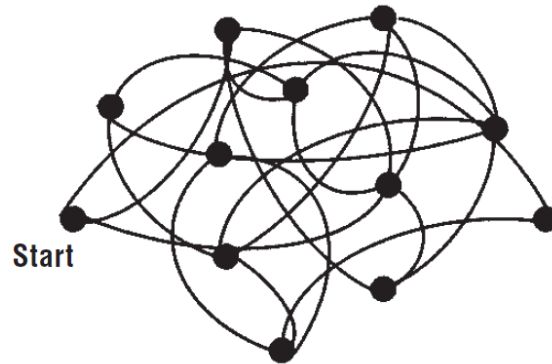


Diagram 3. Network interactive architecture (Avatars 103)

A network, according to Ryan would permit the reader/user to go through “incoherent sequences” (103), for example nodes dealing with a living character after they were killed in a previous node. Nevertheless, these links accomplish little more than what has been already accomplished by many modernist writers; the link does not affect the outcome, but simply rearranges the order of presentation.

If as Gregory Ulmer Points out, such “disorientation and confusion that modernist fiction labored so hard to produce are more or less inherent in the nonlinear linking of hypertext,” it would not be of much value to hypertext fiction, as it would merely be facilitating what print literature has already achieved. Herein lies the beauty of the hypertext link, and what distinguishes it from print. The reader/user of hypertext fiction is not doomed to go through all the nodes. Through the omission and addition of key nodes, the reader/user may in fact be missing or experiencing a key “event” in Lyotard’s sense of

[...] the fact or case that something happens, after which nothing will ever be the same again. The event disrupts any pre-existing referential frame within which it might be represented or understood. The eventhood of the event is the radical singularity of happening, the 'it happens' as distinct from the sense of 'what is happening'. (Readings, xxxi)

The above network model describes a synchronous network of positions where the significance of every lexia is determined by the place it occupies in the network. While this emancipates the lexias from their contents, it still takes the lexias themselves as static building blocks and the whole network as a given. This is exactly why Foucault and Laclau’s network models are open to criticism. In the researchers’ opinion, although the lexias are not causally and temporally related, depending on the lexias the reader has gone through when they arrive at a certain point, they have retained a memory of lexias past. In

this way, neither people, nor places and events have a static meaning. Using the concept of “event” from Lyotard – the singular event after which nothing will be the same – and combining it with Ryan’s network interactive architecture model, a model is proposed where in addition to the possibility of (relatively) free movement among nodes in a network, the element of memory of past events has been added, enabling each node to be dynamic in response to past events.

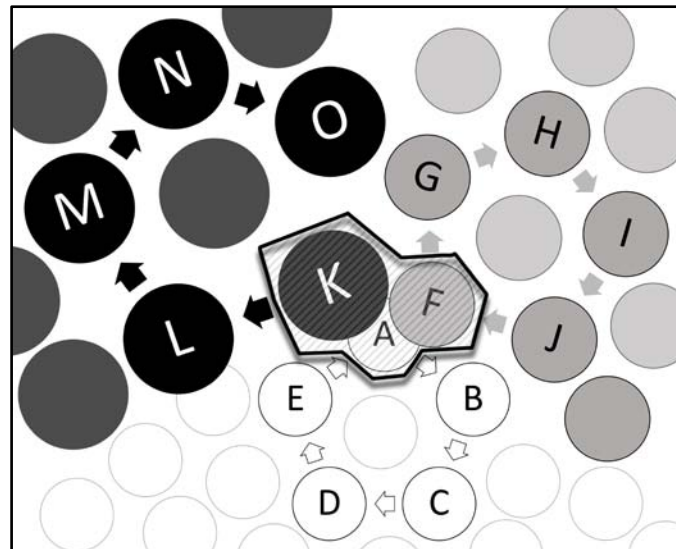


Diagram 4 – Proposed Dynamic Spatiotemporal Network Model

Clarifying this model is extremely difficult, not only because it requires the suspension of many well-established presuppositions, and adopting points of view which might seem counter-intuitive, but also due to the limitations of the medium of print – the fixity of which precludes any type of dynamism. Diagram 4 is the closest one can get to demonstrating how the model works. The diagram may be read in many ways. The circles or nodes might be taken as lexias and the arrows as clicked links (which may be one of many other options). The shape in the center enclosing the letters A, F, and K is a lexia which is visited multiple times during a single reading, as is very common when reading hypertext fiction. The process of reading continues in the order of the alphabet from A to O. As is clear from the model, the movements of the reader, which may be more or less free or controlled by the author, may take him or her to a specific lexia multiple times. Taking the whole diagram as a map, one can see how the reading process may be seen as the exploration of a map, which would be similar to Ryan’s network interactive model in diagram 3. In spite of the similarities, it is important to notice the graphical detail of the diagram. The three colors used to represent lexias and also their size changes every time the reader reads this lexia. The reason why no name is given to this lexia (it has different names every time it is read) is that far from being a fixed location in space, as the network model would have it, or a space or position defined by the totality of the network or the lexias around it, as a Foucault would have it, it is simply an event after which nothing will ever remain the same (bringing about the change that is graphically represented by the

shape of the circles). What this event is, is defined as much by the text of the lexia as by the nodes visited prior to it. In this diagram, for example, any itinerary change a particular reader might have brought about by choosing a different link would change the K to an L or even an S (not that we would definitely have an L or an S). The only reason the three lexias are enclosed as a single node is that they appear to the reader as the same lexia containing the same text – which is not completely accurate in *Twelve Blue* as in every recurrence of a lexia, minor elements such as the availability of links change. One might say that the lexia retains a memory of lexias past, and also of its own past incarnations, and any link leading to this lexia would be a link to strange blend of time and space. One might even read the three different graphical representations as belonging to different layers, giving temporal depth to space, or even parallel realities. In any case, as is the case of all diagrams, this is a huge oversimplification of a work of hypertext fiction, as what is said of this specific lexia is true for all other lexias as well, not to mention that a single reading may resurrect a single lexia more than a dozen times.

In this way, Henry Stone, a character in *Twelve Blue*, would be Samantha's long lost father, rising from the river as a boy of her own age in one version of the story, but only a boy Samantha sees swimming in the river in another version, depending on whether the reader has passed through the node where Samantha's mother tells her the name of her father or not. Therefore, unlike the pieces of a jigsaw puzzle doomed to make the same image every time, the lexias function more organically, like Lego blocks able to make different shapes within their own limitations.

Missing the lexia “a sea of stories,” therefore, would completely alleviate the temporal incoherence of the meeting of Samantha and his father. It is due to this transforming power of the singular “event” that even when nodes (or lexias) are revisited again and again in hypertext fiction, they are more instances of time travel than they are simple repetitions or flashbacks.

In this way, to upgrade our earlier simile of hypertext fiction as a jigsaw puzzle, the puzzle pieces themselves have depth and are not static pictures, but “dynamic” and diachronic in themselves – terms that have been reserved for temporality up to now. Massey, speaking about this blending of space and time concludes,

The spatial form [is] socially ‘planned’, in itself directly socially caused, that way. But there is also an element of ‘chaos’ which is intrinsic to the spatial. For although the location of each (or a set) of a number of phenomena may be directly caused (we know why X is here and Y is there), the spatial positioning of one in relation to the other (X’s location in relation to Y) may not be directly caused. Such relative locations are produced out of the independent operation of separate determinations. They are in that sense ‘unintended consequences’. (154)

This is exactly how *Twelve Blue* is structured. The lexias have been planned by the author, and certain limitations of movement have been set. But the reason why it is so difficult to conduct an exhaustive critical examination of such a work is that the juxtaposition of the lexias will always contain an element of chaos. The puzzle will not

always yield the same outcome, as a jigsaw puzzle would, no matter which corner you start doing or which piece you take up first. The pieces act as independent entities able to adjust and adapt to whatever other piece happens to sit next to them, in Massey's words, leading to "unintended consequences."

The whole situation is similar to Jorge Luis Borges' story, "The Book of Sand." In this story, a bible-peddler sells the narrator a book by this title which changes every time the reader opens it. "Look at it well," says the peddler to the narrator, "You will never see it again" (Borges 481). Loss Pequeno Glazier points to the nightmarish end of the story where the obsessed narrator becomes "a prisoner of his desire to master it" and refers to the book as an obscenity that Corrupts reality (20)

Using the ideas of H. C. Darby, a well-known geographer of his own time, Massey points to the relative difficulty of geographical description – as one may wander off aimlessly in space – compared to the "dramatic juxtaposition" that events take in time (155). Description of events in the print medium is thus more compatible to the written word due to the temporal nature of both, as compared to the hypertext medium with its bending and blending of time and space. It would be as difficult, therefore to write a traditional novel in the electronic medium, as it is difficult to write a hypertext fiction in print. The change of perspective literature has gone through and the unease this has caused among readers and critics alike are by no means exclusive to literature, for the latter is a mirror reflecting the revolution that has been in progress for some time now at a much larger scale.

All this serves to shatter any sense of beginning and end in a work such as *Twelve Blue*, giving the reader the ability to interact with the work, but strips them of many of the god-like superpowers they used to have with print literature. The inability to skip parts of the work, go to the end, or go back a few pages, or even know where the beginning or end are, are things the reader of hypertext fiction will miss about reading print literature. Far from being the master of the process of reading, the reader, stripped of the powers readers used to have over the book they held in their hand, has become the observer of the text moving at its own pace, sometimes having a say in the speed and direction, but most of the time only a passive observer. This, and the many other fragmented aspects of electronic literature have changed what reading used to mean. Reading literature has now become an unsettling activity. It does not transport the reader to an imaginary and ideal world free of the discontinuity, fragmentation, and alienation – all parts of modern existence – where everything makes sense and causality and unity mean something. In fact, reading is now in many ways the representation and continuation of precisely what many are trying to escape from.

The calling of the modern literary critic or reader is not to grapple with the protean monster of the book and to endure the thousand shapes it takes so that the exhausted book will reveal its true form and give truthful answers to age-old questions. The modern myth, is to embrace the protean self, to take mystery as an answer, and to dance to the myriad shapes and shadows the newborn medium will cast.

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