Elements of Narration in a Digital Environment

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Abstract

Narrative has proven to be an efficient way of presenting material. It is one of the fundamental human strategies for organising data about the world, and for making sense of a veritable chaos.

This text tries to extract five components that together constitutes narrative. In a digital environment, the main structural manner is by using hypertext; and an hypertextual presentational modus also calls for interactivity. Traditionally, the concepts of hypertext and interactivity works against narrative, due to narratives 'need' for linearity, dramaturgical story progression, and unintrusiveness. The text proposes a way of handling these problems by considering the narrative options, and then 'borrow' from the suggested elements when suitable.

Content

Elements of narration in a digital environment

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The narratives of the world are numberless.[1]

Roland Barthes

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There is nothing like a complete narrative, and there is nothing like a non-narrative. In whatever representation, there are aspects of narrativity. In this paper I'm going to present a set of components I believe are important in narrative representations, and their relations to representations in a digital environment. I will also take into account the unique interactive feature and elaborate on how the hypermedia structure affects the narrative content and comprehension.

Narratives, one can argue, are one of the fundamental human strategies for organizing data about the world, and for making sense of a veritable chaos.

> Our lives are ceaselessly intertwined with narrative, with the stories that we tell, all of which are reworked in that story of our own lives that we narrate to ourselves.[2]

Whether it's the TV-series of your choice, the latest blockbuster from Hollywood, the News at Ten on the development of the crisis in the Middle East, your friend offering a cup of coffee, or your favorite armchair in the livingroom, by using narrative 'humans organize their experiences into temporally meaningful episodes.'[3]

A narrative takes place somewhere, denotes a time frame, includes something like characters that act in some way and these actions (or events) are organized in some motivated order and, finally, the combination connotes and promotes personification with the events and characters by some receptee[4]. Expressed in a condensed way, narrative includes: spatiality, temporality, causality, dramaturgy, and personification.

That is, these elements are apparent in narratives, to different degrees. They are not necessarily essential. In different contexts, the narrative focuses on different elements in the narrative. I would like to argue that narrative is a continuum where the peripheries are utopian[5]. A presentation is located somewhere on this continuum, and that location is defined by to what extent these elements are present[6].

Spatiality

A narrative takes place somewhere. There has to be a container of some kind. This could be a thoroughly defined, actual environment or an abstract one. The events and characters help in defining their surroundings. Or the other way around. In the visual arts, the environment is often crucial and can be used to efficiate the presentation. What would the car chase in *Bullitt* (1968) be without the San Francisco setting? Would any of the finales in the James Bond series be exciting if you didn't know exactly how far it is from point A to B? Would a chamber drama be comprehensible if you didn't know that, for instance, a daughter can hear her father confess about the incest to her step mother.

In a digital environment it's equally important (and to some extent even more important). In an interview with one of the two brothers who created *Myst*, Rand Miller, he told that 'the interactive story design followed two paths: the linear and the non-linear.'[7]

> The linear was the back story and the history, all those elements that followed a very strict time line. The non-linear was the design of the worlds and was more like architectural work. Like building a world without the time element at all – a snapshot of an age. Now the struggle was to try to merge the two by revealing some parts of the linear story during the exploration of the non-linear world, while maintaining the explorer's feeling that he/she can go anywhere and do anything they please.[8]

I will get back to this example later when discussing the hypermedia structure. In this context, the most important aspect is the view on the use of the environment, In *Myst*, they believed that the space had the possibility to 'blur' the story[9], but also the built-in potentiality to scatter around fragments of the story. Spatiality can be used for the *potentiality* of a story. And this can't be as easily simplified as the semiologists tried to, by reducing the elements in space to signs, readily decipherable (even though the idea still can be compelling)[10].

> The world is full of signs, but these signs do not all have the fine simplicity of the letters of the alphabet, of road signs, or of military uniforms: they are infinitely more complex.[11]

And indeed they are more complex! In the case of *Myst* (and in a number of games inspired by *Myst*, and the sequel *Riven*), the producers motivate the signs more than being cultural inhabitants or markers of a specific time period (or whatever semiotic connotations that may occur[12]); the signs are motivated by the story, they are parts of the narrative content.

Temporality

> We live in and with time, and it is within that temporal dimension that our ways of seeing are established.[13]

Ways of seeing and thereby understanding. In narrative, temporality is constituted by the sequence of events. But that notion is twofold. If we present a series of still photographs or sketches (like in a cartoon) there is a temporal relation between the single photographs bound by the means of distribution. In cinema, the temporal relationship (definitely simplified) between the single frames in the succession is the actual technique that creates the effect of moving images. The temporal duality is, on the one hand, the constituent of the apparatus and, on the other, as a vehicle for the narrative presentation[14]. But,

> /.../the temporal relation between successive images is obviously less intense, not only because each individual image contains time only in a very indirect

and coded way, but because the apparatus within which they appear is much less constraining.[15]

The sequence of events indicate that there is a temporal relationship between the events[16], but (obviously) not a chronological succession. 'A story is *made out of* events to the extent that plot *makes* events *into* a story'.[17] And to deal with this temporal disorder, narrative uses (among other things) causality. I'll get back to this later.

The duality can also be expressed in another way, as 'story time' and 'actual time'[18]. The 'actual time' (the time it takes to present the story for an audience) in *North By Northwest* (Alfred Hitchcock, 1959) is 136 mins. The 'story time' is something like two weeks, perhaps. When talking about the cinema it is fairly straightforward, but with many other forms of representation it is more difficult: how long does it take to read a book?[19]

Editing (in the cinema) is 'first and foremost the ordering of units of time, units between which there are implicit temporal connections'.[20] When an intended user in a digital environment is using the material, the time of the telling can be vital. While browsing the World Wide Web – who wants to wait? Who wants to add user-time (that is, time of the telling) because of an inefficient hypermedia structure and navigation?. On the other hand, if the time of the telling is efficient, the time of the story can be prolonged, and include lots of more information, 'events', if you may.

Causality

The events depicted often needs to be motivated further, they need to be put in a causal relationship with one another. This causality is triggered by, basically, the other elements present. The events can be arranged chronologically, thus ordered under temporality; they can be connected in space (in a train station there is a probably a train somewhere, or in an apartment there is probably a kitchen), thus ordered under spatiality. The events can be causally motivated by the characters different actions (if someone drinks poison, he (or she) will probably die or get very sick). And so on. Causality is, in many respects, the binding structure, the glue, of narratives[21]. But, this is not the whole truth. Not all events are causally motivated, 'it's implausible to suggest that scenes follow each other /.../ via a chain of causal *entailments*.'[22] Simply beacause, they don't. But, '[o]n a small scale, the connections among events may be quite weak and indirect even though on a large scale, an overall pattern may be evident.'[23] And, this pattern may very well be dramaturgically motivated.[24]

Dramaturgy

The concept of dramatic structure is based on Aristotles three-act drama in *Poetics* (ca. 330 b.c). A story,

> is an imitation of an action that is complete, and whole, and of a certain magnitude; for there may be a whole that is wanting in magnitude. A whole is that which has a beginning, a middle, and an end. A beginning is that which

does not itself follow anything by causal necessity, but after which something naturally is or comes to be. An end, on the contrary, is that which itself naturally follows some other thing, either by necessity, or as a rule, but has nothing following it. A middle is that which follows something as some other thing follows it. A well constructed plot, therefore, must neither begin nor end at haphazard, but conform to these principles.[25]

In act 1 (the beginning) the characters are presented (the protagonist and the antagonist), the conflict, the time, and the place. Act 2 (or the middle) is the main section where the conflict develops and supporting characters and story lines are introduced. In act 3 (or the end) the conflict is resolved. At the end of every act, there is a climax or turning point which alters the story progression or the protagonists actions.

Tzvetan Todorov argues for that there are two principles of narrative: causality and transformation. The transformative aspect is manifested in that narrative progression is based on a state of equilibrium, a disruptive event and a return to an equilibrium (but now slightly different).[26] The disruption works against the balance (equilibrium) to keep the story line going. The dramatic structure could then be considered (according to Todorov and others) to progress the story line in cycles or like a pendulum.

I will now move to a more practical example. In 1890, Alfred Hennequin published *The Art of Playwriting*.[27] It is a handbook on how to write efficient plays for the stage. This is by no means the first or the last of its kind. The system of course resembles Aristotles, through Gustav Freytag's *Die Technik des Dramas* (1876) to, for instance, the classical Hollywood cinema. The bearing concept are four statements about the importance of 1/ characters, 2/ completeness, 3/ unity, and 4/ motivated incidents. And that answers the question: 'What constitutes a story?'.[28] In this context, I will focus on the question Hennequin poses: 'What constitutes a play – means of creating interest'.[29] He introduces seven 'means', and I will present them here as a frame work for an analysis of the interest factors in a presentation in a digital environment.

First, there is 1/ *Interest and Pleasure*. Of course, any producer wants to please (or at least not offend!) the audience and focus on the interesting aspects of the content. 2/ *Novelty*. The presentation should be considered fresh and original. It doesn't necessarily mean that a completely new presentational style is introduced, but it could mean that technical aspects has to be considered. Which compression format is usually used for digital video? What frame rate? Which speed on the CD-ROM drive? and so forth. You wouldn't want your product to look and feel old by the time you release it. 3/ *Variety and Contrast*. To achieve long-term use, monotony has to be avoided. The concept of contrast can be very efficient. By using contrasting colors, out-of-place sound, etc, that can be achieved. 'The entire act should be a rapidly shifting kaleidescope, presenting new features at every turn.'[30] 4/ *Suspense*. 'Suspense is the nervous system of the drama.'[31] That might as well work in a digital environment. If the user (audience/spectator, etc) is at edge, it definitely promotes concentration (it is perhaps even part of the definition of concentration) and interest. But there also has to be some kind of release from the tension and that is in the back waters of 5/ *Climax*. According to Aristotle, every act should end with a climax, and I believe it is fruitful to integrate 'conflict – resolution' in the presentation. Some kind of reward; now you've accomplished this and can get on with the next thing. Another way to maintain interest is by integrating 6/ *Surprise*. To contrast can be surprising, but if you consider

using mild elements of shock in the presentation, that is definitely surprising and attention-keeping. The last 'mean' is 7/ *Humor and Pathos*. I consider this to involve 'the tone' of the product. What kind of graphical profile? Naïve, high-tech, or based on style sheets? What kind of attitude? Authoritarian, one-of-the-guys, or indifferent?, and so forth.

Personification[32]

> The first time I killed someone, I was scared. Not scared to be doing it – I did it because I was scared.
> Shella told me it was like that for her the first time she had sex.
> I was fifteen that first time. Shella was nine.[33]

This is what I'm aiming at. Not necessarily this genre specific (thriller, hard boiled, etc) representation of a narrative, but the condensed example of the duality of personification in narrative representations. The quote gives us some clues to what kind of people the first-person ('I') of the story and Shella are. Their occupations, possible misfortune in life; the cynical attitude towards horrendous deeds, and so forth. But it also triggers emotional reactions in us, as perceivers of the narrative.

Aristotle stressed that the actors (or characters) are one of the main causes of action, but also that action (to some extent) denotes characters.

> /.../an action implies personal agents, who necessarily possess certain distinctive qualities both of character and thought; for it is by these that we qualify actions themselves, and these – thought and character – are the two natural causes from which actions spring, and on actions again all success or failure depends.[34]

David Bordwell puts, somewhat the same notion, as:

> Characters are embodied; they can be assumed to perceive, think, and feel; they seem to display traits and to execute actions.[35]

But, of course, these characters do not need to be human characters. We can attribute these traits, feelings, and so forth, to basically anything. In an experiment conducted in the early 40's[36], a research team of psychologists made an animated movie where a couple of circles, squares and triangles of different sizes moved around in a bigger square. Persons watched the film and were to recapitulate what had happened. To different degrees, they imposed a story structure to the presentation. 'The big triangle chases the small one; and then the small circle comes to the aid of the small triangle,' for example.

The other aspect of charcters is the possibility (or potential) for identification or interest. And,

> [t]he spectator [or user/reader/perceiver] has an intrinsic interest in characters as agents since comprehending a narrative event requires at least recognizing how agents interact with one another in a causal framework/.../.[37]

Characters (and our involvement in them) are important to narratives; but how do we facilitate (or integrate) this element in a digital environment? Since we seem to urge to impose meaning and causal relationships between events (and the settings and characters involved), the simplest anthropomorphic figure (in Barthean terminology) will be considered as a character (with all the linked effects earlier noted), if this figure is contextualized as a character. In John Lasseter's *Luxo Jr.* (1986) 'A larger lamp watches while a smaller, younger lamp plays exuberantly with a ball but doesn't pick up the knack of correct handling.'[38] This is a computer animation and the characters are completely anthropomorphic, but even at this level of recounting the plot, the age difference (together with playfulness, unability to learn) is believed to be essential to make the recount comprehensible. It is then fairly easy to construct a character-like figure, but the task at hand is to contextualize and maintain interest.

Hypertext/hypermedia

A narrative is linear. This happens before that. The dramatic structure is based on effects created by the succession of events (together with length, amplitude, and so forth). The (almost) standardized non-linear hypermedia structure used in a digital environment, should then, by definition, be in conflict with narrative. But, I do not think that is the case. To begin with, hypertext is a way of presenting material. It is non-linear and the reader/user is presented with a set of alternative paths on the course of the reading/browsing.

> Hypertext/.../denotes text composed of blocks of text/.../and the electronic links that join them.[39]

These 'blocks of text' and links form a structure, '/.../cubes connected by straws, a cluster/ .../.[40] In the ideal case the opportunities are limitless.

Some of the basic elements that constiute a hypertext (in theory) is: *Non-centrality*. A hypertext network has no natural center pole (and therefore no obvious starting-, or exit points). This affects the text in a manner that every section (or node) has to be self-containing (to some extent) since there are no confirmations that the reader has read this or that before entry to the particular node. This is obviously *fragmenting* the text, but it also means that each node is more 'complete' (in a sense). A hypertext is an infinite system. It is *plastic*. There is always the possibility of adding or changing things. And this exercise is one part of the *interactive* feature. The reader can choose paths, affect and alter the material. I will get back to this later.

The most wide spread example of a hypertext is of course, the Internet. Ted Nelson (who coined the term 'hypertext' in 1965[41]) had a vision that all knowledge could be integrated in one gigantic hypertext network. The project was called *Xanadu*, and is still active and availiable on the Internet <http://www.xanadu.com>. The hypertext concept was introduced and elaborated on, when the interfaces where text based. With the graphical interfaces of todays computers, the term hypermedia has instead been promoted.[42] The system or the structure of a multimedia product is hypermedia. In evaluating (or producing) a product, the variables above (linearity, centrality, interactivity, fragmentarity, and plasticity) can be used in describing and assessing the content, multimedia.

In the earlier reference to the interview with the creators of *Myst*, they stressed that the back bone of *Myst* was a linear story (they have even published *Myst - the Book*, which is almost a contradiction in terms). But, to the single-user of *Myst* (or *Riven*, *Full Throttle*, *Blackout*, *Lighthouse*, etc, for that matter), the usage is experienced as a linear succession of events, a story. And this effect can even be utilized for dramatic purposes. Jay David Bolter[43] talks about Michael Joyce (one of the fore runners in the genre of interactive fiction) and his *Afternoon* (1987).

> The significance of the episodes [in *Afternoon*] changes depending upon the order of the reading. At one point several characters are invited to tell about themselves. If they do this early in the reading, then their words and deeds will be measured against this history. Nausicaa, for example, who seems a benign presence, turns out to have been a drug addict and a prostitute.[44]

And this is definitely a challenge, but also a tremendous opportunity!

> [W]e find ourselves invoking familiar literary structures in the effort to make sense of this electronic fiction.[45]

Interactivity

Interactivity is considered to be an essential part of a presentation in a digital environment. And, '[i]nteractivity is one of the most spectacular, unique features which digital media offers.'[46] It is through the users intervention the product comes to life. But how much control can the user demand or be given? Ray Kristof and Amy Satran has tried to present the range of interactivity on a continuum from slide show to full-immersion virtual reality[47]. From left to right, the stages are: Control Pace; Control Sequence; Control Media; Control Variables; Control Transaction; Control Objects; and Control Simulation. And this has to be considered in the specific productions. Because,

> [i]nteractivity is as much part of the design of a multimedia product as an animation piece or a 3D graphic. Interactivity must involve, engage, and motivate the user to explore the product.[48]

But, I believe that the consideration does not necessarily have to come to the inclusion of the most elaborate interactivity possible. I think that balancing the presentational modi, *to let* and *to lead*, will prove successful.

> While few would question that to capture interest and attention is crucial to the long-term success of any form of media, experience so far suggests that interactivity has exactly the opposite effect. Instead of capturing interest and attention, interactivity becomes too much like hard work and makes users switch off, mentally and physically/—/interactivity can be too demanding for some people's taste.[49]

The challenge is to maintain the users interest. Apparently it is possible to capture and maintain interest in a strictly entertaining context. Games like *Command & Conquer*, *Myst*, *Riven*, etc, have proven that a large degree of user control (i.e. interactivity) still meant long-term use. Can this function be transferred to other content areas and target groups?

Summing up

I will definitely not argue for that a narrative form will solve every problem connected to organizing or presenting any kind of content, but I believe that it can contribute in many ways, and on several specific occasions. There is no intrinsic value in transferring the presentational modus in *Riven* to, for instance, a presentation of a corporation, but it could be valuable. I believe that many producers refrain from using a narrative form based on the misconception that it is inefficient and 'not suited' for the content at hand. I want producers to consider using a narrative form, and then choose if it is suitable. If you don't ask the question, how come you know the answer?

Notes

[1] Barthes, R. (1977). *Image-Music-Text*, New York: Hill & Wang, p. 79. This is the first sentence of Barthes famous essay 'Introduction to the Structural Analysis of Narratives'.

[2] Brooks, P. (1984). *Reading for the plot: Design and intention in narrative*. New York: Knopf.

[3] Richardson, L. (1990). 'Narrative and Sociology'. *Journal of Contemporary Ethnography, 19,* p. 118

[4] This system is a combination of the structuralist approach (derived from Roland Barthes, Tzvetan Todorov, Seymour Chatman, Mieke Bal, Gérard Genette, Claude Brémond, André Gaudreault et.al) and the phenomenological approach inspired by Martin Heidegger, Maurice Merleau-Ponty and Michel de Certeau, apparent here by Arthur Asa Berger, Don Ihde, Vivian Sobshack et.al. I will elaborate on this later.

[5] Among narratologists there is, on one hand, an ongoing discussion whether this or that representation is a narrative or not; and on the other, suggestions that everything is narrative. Neither of the standpoints, I believe, is very fruitful or useful.

[6] André Gaudreault (1990) moves in this direction in analyzing the Lumière brothers early films in 'Film, Narrative, Narration: The Cinema of the Lumière Brothers', in *Early cinema: space – frame – narrative*. ed. Thomas Elsaesser. London: BFI, p. 68-75. He works from a definition of the 'minimal condition in which a message can be said to convey a narrative/.../'. p. 68, suggested by Claude Brémond: 'The message should place a subject (either animate or inanimate) at a time t, then a time $t + n$, and what becomes of the subject at the moment $t + n$ should follow from the predicates characterising it at the moment t.' p. 68

[7] Jones, S. 'The Book of Myst in the Late Age of Print'. *Postmodern Culture* 7.2, <http://www.press.jhu.edu/journals/postmodern_culture/v007>.

[8] Ibid.

[9] In Barthes 'Introduction to the Structural Analysis of Narratives' (1977) the 'catalyser' can have this function (along with acceleration, delay, anticipation et.al.). Also, in a footnote he refers to Valéry's 'dilatory signs'. p. 95.

[10] For instance, Barthes discusses this in relation to the photographic image in *Image-Music-Text*. 'Such objects constitute excellent elements of signification: on the one hand they are discontinuous and complete in themselves, a physical qualification for a sign, while on the other they refer to clear, familier signifieds. They are thus the elements of a veritable lexicon, stable to a degree which allows them to be readily constituted into syntax.' p. 22f. And this argument still prevails in more recent publications such as David Harris' *A Society of Signs*. (1996) London: Routledge. 'The notion that buildings, clothes or most other objects are designed and used primarily as signs to communicate something becomes a way of understanding most aspects of life'. p. ix.

[11] Barthes, R. (1964). *Elements of Semiology*. New York: Hill & Wang. p.

[12] Barthes called these objects '/.../accepted inducers of associations of ideas/.../'. Ibid. p. 22

[13] Aumont, J. (1997). *The Image*. London:BFI. p.118

[14] The instrumentality of the apparatus vs. the content is expressed by many researchers in the areas of the history of technology and of the arts different media specifications. Vivian Sobschack (1992) puts it: '/.../while they [the films enabling mechanisms] enable the commutation of perception and expression that is the film, neither the camera nor projector (nor lenses, editorial equipment, optical printers, sound recording and transfer equipment, screen, et al.) are themselves the film we experience and see, which itself visually signifies vision as visible and significant experience.'. *The Address of the Eye: A phenomenology of film experience*. New Jersey: Princeton University Press. p. 169

[15] Ibid. p. 126

[16] André Gaudreault (1990) goes even further when suggesting that: [t]here are two types of narrative in the cinema: the micro-narrative (the shot), a first level on which is generated the second narrative level; this second level more properly constitutes a filmic narrative in the generally accepted sense.' Ibid. p. 71. And in footnote 16 he stresses 'that every shot, taken out of its context and projected on the screen as a single object, should be regarded as a narrative in itself.' p. 74

[17] Ricoeur, P. (1980). 'Narrative Time', in *On Narrative*, ed.W.J.T. Mitchell. Chicago: The University of Chicago Press. p. 167

[18] Seymour Chatman (1978) talks about reading-time and plot-time (or, with his terminology, discourse-time and story-time) in *Story and Discourse: Narrative Structures in Fiction and Film.* Ithaca: Cornell University Press. p. 62. In a referring footnote (23) he presents other terminologies describing, roughly, the same dichotomy as 'chronological' and 'pseudo-chronological' time (Mendilow) and Christan Metz' 'the time of the thing told and the time of the telling (the time of the significate and the time of the signifier)'. There are severeal others, basically every narratologist have it slightly his/her own way.

[19] Jacques Aumont expresses in *The Image*: 'The point is to never confuse the time of the image with the time of the spectator. The spectator has the freedom to view a photograph for three seconds or three hours, but in cinema the spectator can view only as long as the projector is running'. p. 120

[20] Ibid. p. 125

[21] Frank Kermode puts it as: 'First we look for story – events sequentially related (possessing, shall we say, an irreducible minimum of "connexity"). And sequence goes nowhere without his doppelgänger or shadow, causality.' 'Secrets and Narrative Sequence' in *On Narrative*, ed.W.J.T. Mitchell. Chicago: The University of Chicago Press. p. 80

[22] Carroll, N. (1988). *Mystifying Movies: Fads and Fallacies in Contemporary Film Theory.* New York: Columbia University Press. p. 172

[23] Branigan, E. (1992). *Narrative Comprehension and Film.* London: Routledge. p. 27

[24] It may, in different aspects, also be linked to Bordwells 'excess', Kermodes 'secrets', or Barthes 'hermeneutical codes'. In playwriting for the stage, an arbitrarily introduced incident is called clap-trap.

[25] Aristotle. *Poetics.* Translated by S. H. Butcher. paragraph 7:VII

[26] Todorov, T. 'The Two Principles of Narrative'. *Diacritics*, vol.1, no. 1 (Fall 1971) p. 39. See also Edward Branigan (1992) Ibid. p. 4 and footnote 7, p. 219 for further reference.

[27] Hennequins *The Art of Playwriting* is published by Houghton Mifflin & Co. I borrow this example from Barry Salts (1992) *Film and Technology: History and Analysis.* 2nd ed. London: Starword. p. 111ff

[28] Salt (1992). Ibid. p. 111. This is from p. 85-91 of Chapter XV.

[29] Salt (1992). Ibid. p. 111. This is from p. 92-96 of Chapter XVI.

[30] Ibid.

[31] Ibid. p. 112

[32] The term is losely connected to the discussion provided by David Bordwell (1989) in *Making Meaning: Inference and rhetoric in the interpretation of cinema.* Cambridge: Harvard UP where he notes that: 'The critic uses the schema to build up more or less "personified" agents in, around, underneath, or behind the text. Such agents, once endowed with thoughts, feelings, actions, traits, and bodies, become capable of carrying semantic fields.'. p. 152

[33] Vachss, A.(1994) *Shella.* London: Pan Books Limited. p. 3

[34] Aristotle. *Poetics.* Translated by S. H. Butcher. paragraph 6:IV

[35] Bordwell, D. (1990) Ibid. p 153

[36] Heider, F. & Simmel, M. (1944), "An Experimental Study of Apparent Behavior*", American Journal of Psychology*, 57 (2), April. p. 243-59. Republished in Aronson, E. & Pratkanis, A. R. (eds.) (1993). *Social Psychology, vol. 1, The International Library of Critical Writings in Psychology.* p. 279-295.

[37] Branigan, E. (1992). Ibid. p. 101

[38] This plot summary is picked from Internet Movie Data Base <http://www.imdb.com>.

[39] Landow, G. P. (1992) *Hypertext: The Convergence Of Contemporary Critical Theory and Technology.* Baltimore: The Johns Hopkins University Press. p. 4

[40] Jennings, E. M. 'The text is dead; long live the techst'. p. 11. in *Postmodern Culture* .592, May 1992. <http://jefferson.village.virginia.edu/pmc/>

[41] Landow, G. P. (1992). Ibid. p. 4

[42] Landow still uses the terms interchangably. But, the hypertext authors and the research and presentation area Interactive Fiction (IF) has somewhat changed the focus of discussion in a way that is not entirely connected to the original defintion of (or belief in) hypertext (or the extension: hypermedia).

[43] Bolter, J. D. (1991) *Writing Space: The Computer, Hypertext, and the History of Writing.* New Jersey: Lawrence Erlbaum Associates, Inc. p. 123ff

[44] Ibid. p.126

[45] Ibid.

[46] Feldman, T. (1997) *An Introduction to Digital Media.* London: Routledge. p. 17

[47] Kristof, R. & Satran, A. (1995*) Interactivity by Design: Creating & Communicating with New Media.* Mountain View: Adobe Press. p. 37

[48] Holmes, M. *Interactivity Primer.* <http://www.multimediator.com/food/write014.html>

[49] Ibid.